

Department of Transport (DOT)
Hanoi Metro One Member Company Limited (HMC)
The Socialist Republic of Viet Nam

**THE TECHNICAL ASSISTANCE PROJECT
TO STRENGTHEN THE CAPACITY
OF REGULATOR
AND
TO ESTABLISH OPERATION AND
MAINTENANCE COMPANY
OF
METROPOLITAN RAILWAY LINES
IN
HANOI CITY**

**FINAL REPORT
(Volume 2)**

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Report on Clarifying Responsibilities for Governmental Management of Urban Railway in Hanoi

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EXECUTIVE SUMMARY

Necessity of clarification of responsibility for governmental management of urban railway:

- In accordance with implementation schedule, by the end of 2016, Cat Linh – Ha Dong Urban Railway Line 2A will be the first line operating. The remaining projects like Line 3 estimated to operate by January 2018, and Line 1 by 2020. Hanoi Railway One Member LCC that was established in accordance with Decision No. 6266/QĐ-UBND dated 27 November 2014 of Hanoi City People Committee (HPC), is currently in operating, strengthening the capacity and preparing conditions for commissioning of Line 2A. Based on Law on Railway approved in 2005, Hanoi urban railway is managed by HPC (Article 55-2, Law on railway). Therefore, for the first urban railway line estimated to operate by 2016, it is necessary to clarify function and responsibility of governmental management about urban railways, clarifying the organizational model of the management agency in Hanoi City to coordinate and monitor Hanoi Railway One Member LCC preparing receiving conditions, carrying out commissioning and commercially operating to ensure quality and safety.

Hanoi Department of Transport (DOT) is the specialized agency of HPC to perform function “*advising and assisting HPC in governmental management of transportation, including roadways, waterways, urban railways, transportation, transport safety in Hanoi City*” (Decision No. 17/2008/QĐ-UBND dated 29 September 2008). However, in this decision, management function of urban railway is not implemented, clarified and concretized yet. DOT has not yet established department (board) or relevant organizational structure yet as well as lack of human resource with qualification and deep understanding of urban railway for implementation. Clarification of function, responsibility of governmental management about urban railways has important meaning, assisting HPC to develop and issue policy, regulations on management and monitoring urban railway activities to organizations and individuals participating in urban railway transport.

Objectives of this proposal:

The objective of this proposal is to define and develop UR institutional system, and based on that to stress on clarification of functions, responsibilities and preparing basic plans on operation and organization structure of regulator for UR.

Functions and responsibilities regarding UR management of several regulators in the world

The study, analysis and assessment of the management and operation of other regulators in the world shall be important basis for regulator of UR in Hanoi to refer to and learn experience and propose tasks and plans to ensure effective UR management (*More details are explained in part 1 of Chapter 3*)

Proposal on description of government functions on operation and maintenance of UR

Functions, responsibility of governmental management of urban railways are proposed to be applied for DOT (*find more details in part 1 of Chapter 4*):

- (1) To provide advices to develop regulations, and managing urban railway service quality
- (2) To provide advices to develop regulations, and managing urban railway safety
- (3) To provide advices to develop incentive policies for urban railway
- (4) To develop and proposing Fare policy and acquiring approval of HPC

- (5) To provide advices to develop regulations and managing urban railway infrastructures and equipment
- (6) To provide advices and proposal to submit HPC for issuance of documents on allocation, decentralization of governmental management of urban railway sector.
- (7) To advise, submit HPC regarding development plan, long term plan, and development program of urban railway consistent with socio-economic development master plan of the city, region plan and industrial plan.
- (8) To inspection, check and handle violation of laws on transportation in the city as prescribed;
- (9) To propagandize and educate laws related to urban railways.
- (10) To perform international cooperation in urban railway in accordance with provisions of law and allocation or authorization of HPC

Proposed organizational structure, operational system of UR regulator

In this report, UR regulator in Hanoi City is proposed in the following stages (*find more details in part 2 of Chapter3*):

- Stage 1:
 - + Option: MRB is UR regulator
 - + Option: an UR regulator is established under DOT (a center or an organization equivalent to a department)
 - + Option: Governmental management responsibility is added to TRAMOC
- Stage 2: An unique agency is established to manage public passenger transport in Hanoi City

Acronyms and Abbreviations

Abbreviations	Description
Government	Government of the Socialist Republic of Vietnam
TA Project	TA Project “to Strengthen the Capacity of Regulator and to Establish O&M Company for Metropolitan Railway Lines in Hanoi City”
UR	Urban railway
Plan of O&M	Plan of establishment of O&M Company for UR lines in Hanoi (2012)
Plan	Plan on Strengthening Hanoi UR regulator
GTCC	Public transport
GTVT	Transport
JICA	Japan International Cooperation Agency
HPC	Hanoi People’s Committee
MoT	Ministry of Transport
VNRA	Vietnam Railway Administration
DoT	Hanoi Department of Transport
DoF	Hanoi Department of Finance
MRB	Hanoi Metropolitan Railway management board
TRAMOC	Public transport management and controlling agency
O&M	Operation and Maintenance
QLDA	Project management
TP	City
TTg	Prime Minister
HKCC	Passengers
HMC	Hanoi Railway One Member LLC

CHAPTER I: LEGAL BASIC AND NECESSITY FOR CLARIFICATION OF RESPONSIBILITIES FOR GOVERNMENTAL MANAGEMENT ABOUT URBAN RAILWAYS

I. General of governmental management:

1.1. Role of the Government:

According to the Constitution of the Socialist Republic of Vietnam, 1992:

Article 3 The Government shall implement the targets of building a prosperous life for its people, a strong country and an equitable, democratic and civilized society, ensuring the well-being, freedom and happiness of all citizens as well as conditions for comprehensive development.

Article 52 In relation to economic development

The Government shall build up and perfect economic institution, regulate the economy on the basis of respecting market laws; implement assignment, decentralization of state management; promoting regional economic integration and ensuring the consistency of the national economy.

1.2. Concept of governmental management:

Governmental management is a form of special social management implemented by the agencies of the state system through the system of legal instrument and policy to adjust the behaviour of individuals and organizations to maintain stability and sustainable development of the whole society

1.3. Classification of governmental administrative agencies:

1.3.1. Governmental administrative agencies at central level:

Including: Government, ministries, ministerial-level agencies, agencies directly under the Government:

- Government is the executive body of the National Assembly, the highest administrative organ of the Socialist Republic of Vietnam. Responsibilities and powers of the Government are compliant with the constitution and Law on governmental organization.

The organizational structure of the Government includes ministries, ministerial-level agencies and agencies directly under the Government. Government members include Prime Minister, Deputy Prime Minister, Ministers, heads of ministerial-level agencies and the agencies directly under the Government. Ministries and ministerial-level agencies are the Government's bodies performing governmental regulatory functions for industries or sectors in the country, the governmental management of public services in the sectors and industries.

Ministries, ministerial-level agencies (commonly called the Ministry) are divided into industry ministries, general ministries, and sectorial ministries.

Organizational structure of the Ministry includes: Department, Inspection and Office of Ministry; Bureau, General Administration (not necessarily available in the ministries); organizations and business units.

The agency under the Government is an organization established by the Government to perform the functions, duties and powers stipulated by the Government.

Document issuance authority: the Government issues Resolution, Decree; The Prime Minister issues Decision and directives; Ministers, heads of ministerial-level agencies issue decisions, circulars and directives.

1.3.2. Classification of the governmental administrative agencies at local level: People committees of all levels and subordinate agencies:

People committees of all levels and subordinate agencies are elected by the same level People's Councils to be the executive organ of the People Council and the state administrative bodies at local level. People Committee shall be responsible for organizing and directing the implementation of the constitution, law; the text of the higher governmental organs and the resolutions of the People's Councils of the same level.

Members of the People's Committees at all levels include: Chairman, Vice Chairman, and Commissioner. People's Committees at all levels have specialized agencies to assist People's Committee in jointly performing the function of Governmental management in the locality and performing a number of tasks and powers under the authorization of the People Committee of the same level and under the provisions of law. Government shall regulate the organization of the specialized agencies of People's Committees and provide guidelines for organizing a number of professional agencies for the Provincial People's Council (PPC) to decide properly in accordance with the local features.

The professional agencies of PPCs are Department-level units, of District People Committees (DPC) are the departments and boards. People Committees at commune level do not have specialized agencies; advising and consulting in professions to assist Commune People Committee (CPC) are undertaken by commune officials.

Document issuance authority: PPCs, DPCs issued decisions and directives; CPCs issue a decision.

<i>Governmental level</i>	<i>Governmental administrative agencies having the common competence</i>	<i>Governmental administrative agencies having professional competence</i>
<i>Central</i>	<i>Government</i>	<i>Ministry, Ministerial level agency</i>
<i>Province</i>	<i>PPC</i>	<i>Department</i>
<i>District</i>	<i>DPC</i>	<i>Department</i>
<i>Commune</i>	<i>CPC</i>	<i>Board</i>

1.4. Basic function of governmental management (function of governmental administration)

1.4.1. Concept of governmental management function:

- The concept of function: Function is the aspect activity to perform the tasks.
- The function of governmental management (governmental administrative functions):

Governmental management functions are specific operational aspects of governmental administration, the product of the process of division and specialization of activities in the field of executive authority.

The governmental administrative functions are strictly regulated by normative documents and allocated to the governmental administrative agencies from the central to local:

- + *Governmental administrative function by prescribed by the Constitution, laws and other normative documents.*
- + *Clearly distinguishing the functions of general administration (common) from administrative functions of each specific administrative agency.*

1.4.2. Classification of governmental administrative function:

- Classification by the scope of implementation, internal functions and external functions.
- Classification by the nature of activity: Regulatory function (legislative), administrative management functions.
- Classification by the field of activity: Political functions, economic functions, social functions, cultural functions, etc.
- Classification by the management level, governmental administrations are classified into central administrative functions (the Government, ministries and ministerial-level agencies) and local administrative functions (functions of provincial people's committees, agencies at all levels of People's Committee)
- Classification by the object of influence, governmental administration has groups of functions to maintain the existence and development of governmental administration itself and group of functions influencing on objects outside of the system and providing public services.

1.4.3. Contents of basic functions of governmental administrative management:

1.4.3.1. Functions to sustain the development of governmental administration: (internal function)

- a) Function of planning and scheduling
- b) Function of organization
- c) Function of human resource
- d) Function of making decision on governmental administration
- e) Function of leading and execution
- f) Function of coordination
- g) Function of budget (Financial function)
- h) Function of report
- i) Function of control

1.4.3.2 Function to influence on the outside of administration:

Governmental administrative functions for the sectors, industries represent the contents of the governmental administration for different industries, sectors of society such as science - technology; resources - environment; post and telecommunication; finance; currency; education; medicine; culture; labour and employment; social security; industry; agriculture - rural; construction; transport; commerce; tourism; security and defence; foreign affairs etc.

Governmental administrative function for the industry, sector is expressed through a number of following contents:

- Providing economic infrastructure: The Government provides basic institution, rules and principles necessary for economic entities to select and conduct business and production activities, including: to define and protect property rights, enforce to comply with contract, to provide standard currency, measurers and measurement units, company law, bankruptcy, patents, copyright, law enforcement, sustainment of law and order and tax system etc..

- Providing of public goods and services

There are a number of public goods and services important to the entire society. These goods and services having general use features without competitiveness in consumption and not excluded, so-called public goods.

These public goods include national security, roads and bridges, assistance to the marine industry, flood control, wastewater treatment, traffic control systems and other infrastructure.

- Function of orientation through planning strategies, planning and development plan:

+ Governmental administration is based on the orientation of governmental agency, of the superior to build up strategy, planning, development plans within the assigned management competence.

+ Planning is to identify future goals and appropriate way to achieve those goals in a period of 5 years, 10 years or longer. In a broader meaning, the planning function is to define development guidelines and to establish long-term plans, medium term plan for the development.

+ Making strategies for sectorial and industrial development:

Strategy of socio-economic development is a system of basic viewpoints, the long-term goals of socio-economic development and solutions that are selected primarily in scientific manner on the basis of mobilization and optimal use of resources and development advantages of the country and locality to achieve the objectives.

+ Making planning for sectorial and industrial development:

Planning of sectorial and industrial development is a form of orienting development of industry, long-term field. In which, the scope and limits are clearly defined for the development. It is a premise for preparation of plans, programs and projects.

The nature of planning is to make macro framework of spatial organization in order to provide scientific basis for the levels for macro instruction of sectors and industries through plans, programs and investment projects that ensure fast growing, sustainable and effective economy.

For example: land use plan, urban plan, public passenger plan etc.

- Function of adjustment through system of institution, policy, legal normative documents, management rules, standards, technical norms issued by the Government:

Based on the laws, policies and decisions of governmental agencies and the superior agencies, governmental administrative agencies at all levels shall develop and promulgate institutions to concretize laws, policies to be suitable with nature and characteristics of the object in a certain environment.

- Function of guidance and implementation:

In order for subjects to implement properly the provisions of the laws, policies and development plans, administrative agencies at all levels shall make guidelines for these

subjects to understand and implement. At the same time, administrative entities at all level shall organize to implement laws, policies and plans to achieve the defined goals

- Function of check, inspection and violation settlement:

Function of check, inspection and violation settlement is to assess the compliance of laws, policies and tasks, the technical regulations, the rules of industry management of individuals and organizations in society, thereby, proposing timely measures to correct errors, to prevent and handle violations of individuals and organizations as well as proposing measures to remedy the unreason of laws and policies.

2. Plan and implementation results of UR construction projects in Hanoi. The existing organizational model of governmental management of public transport in Hanoi

2.1. Plan and implementation results of UR construction projects in Hanoi:

2.1.1. Hanoi UR network master plan

Master plan of urban transport was officially approved in July 2008 by decision of PM (no. 90/2008/QĐ-TTg). Accordingly, for urban railways, till 2020, there will be 5 lines to be constructed, with total length of 196km:

Table : UR lines in City's Master Plan of Transport Development in 2008

Line	Length (km)	Alignment	Remarks
Line 1	38.7	Ngoc Hoi – Yen Vien – Nhu Quynh	From the South East and North of City to City center, utilizing existing track.
Line 2	35.2	Noi Bai – City center – Thuong Dinh	From Noi Bai Airport to new urban areas
Line 2A	14	Cat Linh – Hao Nam – La Thanh – Thai Ha – Lang – Nga Tu So – Highway 6 – Thuong Dinh (connected Line 2) – Ha Dong – Ba La	To be expanded to Xuan Mai till after 2020
Line 3	21	Nhon – Hanoi Station – Hoang Mai	Phase 1: 12.5km Nhon – Hanoi Station To expand to Son Tay, estimated length after 2020 is 48km.

Line 4	53.1	Dong Anh – Sai Dong – Vinh Tuy – Thanh Xuan – Tu Liem – Thuong Cat – Me Linh	To be constructed as BRT system at earliest timing, then, to be developed as completed urban railway line.
Line 5	34.5	South of Ho Tay – Ngoc Khanh – Lang – Hoa Lac	From city center to urban areas along Lang – Hoa Lac corridor

Source: Decision 90/2008/QĐ-TTg in July, 2008

In 2011, after National Assembly of Vietnam issued Resolution no. 15/2008/QH12 regarding the adjustment of administrative border of the city, PM made Decision no. 1259/QĐ-TTg dated 20/07/2011 regarding the approval for Master plan of Capital city development till 2030, vision to 2050. In which, there are 9 lines/sections as following:

Table : List of UR lines in the Master Plan

Line	Length (km)	Alignment
Line 1	38.7	Ngoc Hoi – Yen Vien – Nhu Quynh
Line 2	35.2	Noi Bai – City center – Thuong Dinh
Line 2A	14	Cat Linh – Hao Nam – La Thanh – Thai Ha – Lang – Nga Tu So - Highway 6 – Thuong Dinh (connecting Line 2) – Ha Dong – Ba La
Line 3	21	Nhon – Hanoi Station – Hoang Mai
Line 4	53.1	Dong Anh – Sai Dong – Vinh Tuy – Thanh Xuan – Tu Liem – Thuong Cat – Me Linh
Line 5	34.5	South of Ho Tay – Ngoc Khanh – Lang – Hoa Lac
Line 6	47	Noi Bai – Phu Dien – Ha Dong – Ngoc Hoi
Line 7	35	Me Linh – An Khanh – Duong Noi
Line 8	28	Co Nhue – Mai Dich – Yen So – Linh Nam – Duong Xa

Source: Decision 1259/2011/QĐ-TTg dated July 20, 2011

2.1.2. Current implementing results for UR planned lines in Hanoi:

According to Hanoi City Construction Master Plan till 2030 and vision to 2050 approved by Decision no. 1259/QĐ-TTg dated 26/7/2011, the implementation of construction plan for UR lines in Hanoi city was assigned to two main organizations, i.e. MOT and HPC, which has been compiled as in following table:

Table: Implementing results of planned urban railway lines in Hanoi City

Plan following Decision no. 1259/QĐ-TTg dated 26/7/2011				Implementation status				
No	Line	Alignment	Length (km)	Project	Section (alignment)	Length (km)	Result of implementation	Expected schedule
1	Line 1 (elevated)	Ngoc Hoi – Hanoi Station HN-Yen Vien – Nhu Quynh	34.7	Phase 1	Ngoc Hoi – Yen Vien	15.3	Under planning and technical design	2008 -2021
				Phase 2	Yen Vien – Nhu Quynh	23		
2	Line 2	Thach Loi – Noi Bai – City center – Thuong Dinh	50	Phase 1	Nam Thang Long- Tran Hung Dao	11.5	EOI for civil packages: Submitting for approval of adjusted total investment	2009 – 2019
					Tran Hung Dao – Thuong Dinh	6	Under completion, and submit for approval for FS report	
	Line 2A (elevated)	Cat Linh – Nga Tu So - Ha Dong	13.03	Under construction for civil packages and implementation of equipment procurement, training packages.			2008 -2015	
3	Line 3	Nhon –Hanoi Station – Hoang Mai	26	Phase 1	Nhon –Hanoi Station	12,5	Under construction for infra civil package and depot architecture package; prepare to construct for station civil package, viaducts, prepare for	2008 -2018

							biddings of underground package and equipment package		
				Phase 2	Hanoi station – Hoang Mai	8,5	Under completion of procedures for investment preparation	2012 -2021	
4	Line 4	Me Linh – Dong Anh – Sai Dong – Vinh Tuy/Hoang Mai – Van Dien 2.5 – Co Nhue - Lien Ha	54	Not yet studied					
5	Line 5	Nam Ho Tay – Ngac Khanh – Lang – Hoa Lac	25.6	FS under making					2011 – 2030
6	Line 6 (elevated)	Noi Bai – Phu Dien – Ha Dong – Ngoc Hoi	43.2	During investment promotion, and prepare for study of project formation					2014 – 2025
7	Line 7	Me Linh – Nhon new urban – Van Canh – Duong Noi	35.7	Not yet studied					
8	Line 8	Mai Dich – Ring 3 – Linh Nam – Duong Xa	36.7	Not yet studied					

2.2. Organization and management model of public passenger transport in Hanoi:

- In addition to common organizational structure of governmental management about transport, in which, MOT is a representative of the Government to perform responsibility of governmental management. In Hanoi, DOT is a specialized agency of Hanoi to perform function “*advising and assisting HPC in governmental management of transportation, including roadways, waterways, urban railways, transportation, transport safety in Hanoi City*” (Decision No. 17/2008/QD-UBND dated 29 September 2008).
- For the public transport, currently bus system plays key role. Hanoi City established TRAMOC performing function “*to assist the Department of transport and public works (now DOT) in management and monitoring of public works in the City*” (Decision No. 2279/QD-UBND dated 31/5/2007). However, the major area of management of Tramoc is to manage public transport by bus (not including other public transport mode) with the following responsibilities:

- + To develop strategies of developing public transport types, structure types of vehicles to suit with each stage of urban development in order to meet the travel demand of the people and ensure the urban environment.
- + To make plan – planning of public transport network development plans in the city to submit to the competent authorities for approval.
- + To study and make policy on economic and technical indicators, benchmarks and valuation of flows and line of public transport to advise the Director of DOT to submit to the competent authorities for approval.
- + To organize bidding for development investment projects in public transport
- + To be authorized by DOT’s Director to directly manage and coordinate the network
- + To manage infrastructure related to public transport; to coordinate, regulate the operation of the bus network.
- + To print and issue bus tickets
- + To manage resources of subsidy and revenue of public transport.
- + To sign contracts, monitor the implementation of economic contracts with the units that participate in public transport in the city, acceptance and settlement etc.
- Besides TRAMOC, DOT assists HPC in performing function of governmental management towards public transport system. As approved by the Prime Minister, HPC established Transerco (Decision No. 72/2004/QD-UBND dated 14/5/2004) to perform main businesses in *“providing public transport service by bus and inter-city transport service, contributing to effectively implement the plan of public transport development till 2010, vision to 2020 of Hanoi City”*
- MRB is an advising body of HPC, which is to *“assist HPC in studying, developing, operating, maintaining Hanoi UR system”* (Decision no. 925/2012/QD-UBND dated 22/02/2012)
- In order to meet the situation of UR lines in Hanoi prepared to put into operation, as approved by the Prime Minister, HPC established Hanoi Railway One Member LLC (Decision 6266/QD-UBND of HPC dated 27/11/2014) to carry out function of operation and business of public transport by urban railway system.

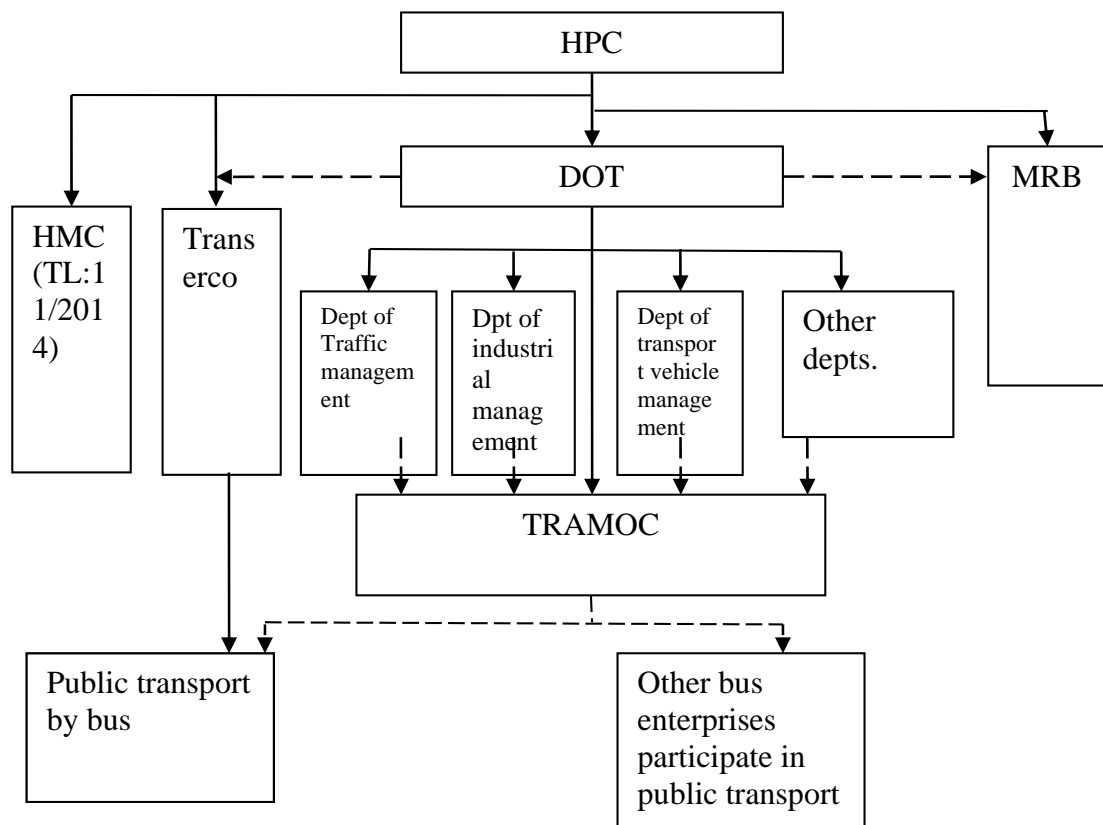


Figure : Management model of public transport in Hanoi

3. Necessity of clarification of responsibilities for governmental management of UR

Clarification of functions and responsibility of governmental management about urban railways is necessary based on the following factors:

- In accordance with implementation schedule, by the end of 2016, Cat Linh – Ha Dong Urban Railway Line 2A will be the first line operating. The remaining projects like Line 3 estimated to operate by January 2018, and Line 1 by 2020. Hanoi Railway One Member LCC that was established in accordance with Decision No. 6266/QD-UBND dated 27 November 2014 of Hanoi City People Committee (HPC), is currently in operating, strengthening the capacity and preparing conditions for commissioning of Line 2A. Based on Law on Railway approved in 2005, Hanoi urban railway is managed by HPC (Article 55-2, Law on railway). Therefore, for the first urban railway line estimated to operate by 2016, it is necessary to clarify function and responsibility of governmental management about urban railways, clarifying the organizational model of the management agency in Hanoi City to coordinate and monitor Hanoi Railway One Member LCC preparing receiving conditions, carrying out commissioning and commercially operating to ensure quality and safety.

- Hanoi Department of Transport (DOT) is the specialized agency of HPC to perform function “advising and assisting HPC in governmental management of transportation, including roadways, waterways, urban railways, transportation, transport safety in Hanoi City” (Decision No. 17/2008/QD-UBND dated 29 September 2008). However, in this decision, management function of urban railway is not implemented, clarified and concretized yet. DOT has not yet established department (board) or relevant organizational structure yet as well as lack of human resource with qualification and deep understanding of urban railway

for implementation. Clarification of function, responsibility of governmental management about urban railways has important meaning, assisting HPC to develop and issue policy, regulations on management and monitoring urban railway activities to organizations and individuals participating in urban railway transport.

4. Object, scope and objective of the study

4.1. Objects of Study

Object of this study is public transport institutional system, emphasizing on governmental management of urban railway.

4.2. Scope of study

Vietnamese administrative management system: policies, strategies on development relating to public transport and of Hanoi City, related experiences of developed countries.

4.3. Objective of the study:

The objective of this study is to define and develop UR institutional system, emphasizing on clarification of responsibilities, and preparing basic plans for operation and organization structure of government regulator for UR.

CHAPTER 2: VIETNAM'S LEGAL DOCUMENT SYSTEM AND URBAN RAILWAY ORGANIZATIONAL MODELS IN THE WORLD

1. List of legal documents on transport, railways in general and urban railway in particular:

1.1. Laws promulgated by the National Assembly:

- Law on Organization of the Government No. 32/2001/QH10 of the National Assembly dated December 25, 2001
- Law on Organization of People Council and People's Committees No. 11/2003/QH11 of the National Assembly dated 26/11/2003
- Law on Railway No. 35/2005/QH11 of the National Assembly dated 14/6/2005
- Law on Road traffic No. 23/2008/QH12 of the National Assembly dated 13/11/2008
- Law on Bidding No. 43/2013/QH13 of the National Assembly dated 26/11/2013
- Law on Investment No. 67/2014/QH13 of the National Assembly dated 26/11/2014
- Law on Environmental Protection No. 55/2014/QH13 dated 23/06/2014
- Law on Urban Planning No. 30/2009/QH12 of the National Assembly dated 17/6/2014
- (Law on Electricity)
- Law on State Budget No. 01/2002/QH11 of the National Assembly dated 16/12/2002; Law on State Budget (amended) No. 83/2015/QH13 of the National Assembly dated 25/6/2015.
- Law on Vocational Training No. 76/2006/QH11 dated 29/11/2006
- Law on professional education No. 74/2014/QH13 of the National Assembly dated 27/11/2014
- Law on Auction No. 11/2012/QH13 of the National Assembly dated 20/6/2012
- Law on Land No. 45/2013/QH13 dated 29/11/2013

1.2. Decrees issued by the Government

- Decree No. 14/2015/ND-CP of the Government dated 02/13/2015 providing detailed regulations and guidelines for implementation of some articles of the Law on Railways
- Decree No. 107/2012/ND-CP of the Government dated 20/12/2012 stipulating the functions, responsibilities, powers and organizational structure of the Ministry of Transport;
- Decree No. 24/2014/ND-CP of the Government regulating the organization of the professional agencies under the People's Committees of provinces and cities under central government;
- Decree No. 130/2013/ND-CP of the Government dated 10/16/2013 on production, supply of public products and services;
- Decree No. 79/2014/ND-CP dated 31/07/2014 detailing provisions of some articles of the Law on Fire Protection and Law on amending and supplementing some articles of the Law on Fire Protection;
- Decree No. 130/2006/ND-CP dated 11/08/2006 regulating regime of insurance of fire and explosion;

- Decree No. 78/2010/ND-CP of the Government dated 14/07/2010 on lending of foreign loans of the Government;
- Decree No. 38/2013/ND-CP dated 04/23/2013 on the management and use of resources of official development assistance (ODA) and preferential loans of donors;
- Decree No. 59/2015/ND-CP of the Government dated 06/18/2015 on management of construction investment projects;
- Decree No.46/2015/ND-CP of the Government dated 05/12/2015 on the management and maintenance of quality of construction works;

1.3. Circulars issued by Ministries and Ministerial-level agencies:

- Circular No. 77/2012/TT-BCA of Ministry of Public Security stipulating processes of investigation and solutions of railway traffic accident police of road and rail transport force;
- Circular No. 15/2009/TT-BGTVT of MOT providing regulations on handling railway traffic accidents, incidents;
- Circular No. 37/2014/TT-BGTVT providing provisions on the protection scope of works and corridor urban railway traffic safety;
- Circular No.20/2013/TT-BGTVT providing regulations on the management and maintenance of railway works;
- Circular No. 05/2015/TT-BGTVT providing regulations on standards of titles of the staffs who directly serve the urban railway train operation;
- Circular No. 21/2015/TT-BGTVT providing regulations on working time, rest time for workers having jobs with the special features of rail transport;
- Circular on regulations on passenger transport by urban railway (Draft)
- Joint Circular No. 42/2015/TTLT-BGTVT-BNV guiding functions, responsibilities, powers and organizational structures of specialized agencies transport of the people committees of provinces, cities directly under the central government;
- Circular No. 01/2013/TT-BGTVT providing regulations on registration of railway transport vehicles;
- Circular No.30/2014/TT-BGTVT providing regulations on Safety Certificate for railway enterprises;
- Circular No. 02/2009/BGTVT about quality control, technical safety and environmental protection of rail transport vehicles;
- Circular No.31/2015/TT-BGTVT dated 07/17/2015 providing provisions for the contents, examinations process for urban railway train driver license;

1.4. Decisions, directives issued by Ministries, HPC:

- Decision No. 1890/QĐ-BGTVT dated 07/03/2013 of MOT regulations on the functions, responsibilities, powers and organizational structure of the Viet Nam Railway Administration;
- Decision No. 862/QĐ-BGTVT dated 04/05/2013 of MOT regulations on the functions, responsibilities, powers and organizational structure of Vietnam Department of Registry;
- Decision No. 17/2008/QĐ-UBND of HPC providing regulations on functions, responsibilities, powers and organizational structure of the Hanoi Department of Transport;

- Decision No. 925/QD-UBND dated 22 Feb. 2012 of HPC, MRB is established based on re-consolidation of metropolitan railway project management board;
- Decision No. 2279/QD-UBND of HPC dated 31/5/2007 on the establishment of Tramoc under the DOT;
- Decision No. 5579/QD-UBND of HPC dated 13/09/2013 regarding "Approval for framework scheme for fare policy and e-ticket technology applicable to urban public passenger transport network in Hanoi city";
- Decision No. 3978/QD-UBND of HPC on management and application of technologies for e-ticket system of public passengers transport network in Hanoi City.

1.5. Technical codes and standards of ministerial level regarding railways and urban railways

- Vietnam Building Code No. QCVN 08:2009/BXD for urban underground works
- Vietnam Building Code No. QCVN 08-2015-BGTVT for railway operation
- Vietnam Building Code for urban railways (Draft)

2. Functions and responsibilities of governmental management of the existing levels of transport and urban railways:

Within the scope of this study, the report reviews the system of the related legal documents such as the Laws of the National Assembly, the Resolution issued by the Government, the circular, directives issued by ministries related to transport, railways and urban railways. Details are shown in the below table:

TABLE : RESPONSIBILITIES OF GOVERNMENTAL MANAGEMENT AGENCIES TOWARDS ACTIVITIES OF TRANSPORT, RAILWAYS AND URBAN RAILWAYS

Laws, decrees, circulars and regulations, other documents	Description of Laws, decrees, circulars and regulations, other documents	Responsibilities of the relevant agencies		
		MOT	HPC	Other ministries
LAWS ISSUED BY THE NATIONAL ASSEMBLY				
LAW RAILWAYS ON	Article 6. Overall planning on railway development	Minister of Transport made a master plan for development of the railway to submit to the Prime Minister for approval		
LAW RAILWAYS ON	Article 7. The state management responsibilities of the Government, ministries, ministerial-level agencies, Government-attached agencies with regard to railway activities Article 8. Provincial-level People's Committees' responsibilities for state management of railway activities	The Ministry of Transport is responsible before the Government for performing governmental management of rail operations.	HPC: + To organize and direct the implementation of law on railway; measures to protect rail infrastructure; protect the safety corridor of rail traffic; rescue accident and deal with the consequences of railway accidents occurred in local area. + To make and implement development planning on urban railway infrastructure of the locality. + To ensure order, railway transport safety; inspect and handle violations of the legislation on railways in local area.	+ Ministry of Public Security chairs and coordinates with the MOT, Ministry of Defence and the People's Committees of provinces and cities directly under the central government and related ministries to implement measures to protect social order and safety in railway activities; organizes forces to examine and handle violations of law on railways for people and vehicles involved railway transport as prescribed by law; carries out statistics and data of railway accidents. + the Ministry of Natural Resources and Environment chairs and coordinates with MOT in management and exploitation of resources under the land for railways, the area adjacent to the protection area of railway work that affects the safety of railway works and railway transport safety. + The Ministry of Industry has a responsibility to ensure stable power supply priority for railway electrification and, railway signalling telecommunication systems.
LAW RAILWAYS ON	Article 9. Railway inspectorate.	Railway Inspectorate of MOT's inspectors performs the function of specialized inspection of railway activities		
LAW ON	Article 10. Propagation and dissemination,		Local authorities at all levels (People's Committee of city, district and commune)	+ Ministry of Education and Training has responsibility to direct the education of law on rail in the educational

RAILWAYS	education about law on railway		take responsibility to propagate, disseminate and educate law on railways for local people	institutions. + Vietnam Fatherland Front and its member organizations have responsibility to coordinate with concerned agencies and local government to propaganda, mobilize people to implement the law on railway
LAW ON RAILWAYS	Article 11. Responsibilities of organizations and individuals upon occurrence of railway traffic accidents		People's Committees at all levels where railway traffic accident happens have to coordinate with the police agency, railway business enterprises to help victims, protect the property of the State and of the victims.	+ Ministry of Public Security and concerned organizations and individuals have responsibilities to come to the scene for handling immediately upon receiving information about railway accidents.
LAW ON RAILWAYS	Article 15. Formulating, approving and publicizing planning on railway infrastructure development	The Minister of Transport organizes to make planning for railway infrastructure development in the country to submit the Prime Minister for approval; make and approve for detailed planning for railway infrastructure development in each region, railway transportation hub consistent with the approved railway infrastructure development plan for national railways.	City People's Committee organizes to make planning for urban railway infrastructure development to submit to People's Councils of the same level for approval before submission to the Minister of Transport for approval.	The Ministry of Finance chairs and coordinates with the MOT, the Ministry of Construction to issue expense norms for the formulation, evaluation and publication of planning, landmark setting for area of planned land and adjust of national railway and urban rail infrastructure development plan.
LAW ON RAILWAYS	Article 20. Railway gauges and railway technical standards	The Minister of Transport stipulates technical grade and railway technical grade standard.		
LAW ON RAILWAYS	Article 21. Railway Station	The Minister of Transport issues regulations on technical code of operation, technical standards of railway station; decides and announces the closure or opening railway stations		
LAW ON RAILWAYS	Article 36. Responsibilities to protect railway infrastructures	MOT chairs and coordinates with Ministry of Public Security, Ministry of National Defence to protect particularly important railway works (e.g. international station, station class I)	People's Committees at all levels where the railway is passing through is responsible in disseminating and educating people to protect railway infrastructure; to prevent and timely handling infringements of railway infrastructure and railway transport safety	

LAW RAILWAYS	ON	Article 39. Registration of railway traffic vehicles Article 40. Registry of railway traffic vehicles	MOT make regulations on registration of railway vehicles; regulations on standards of quality, technical safety and environmental protection of the vehicles; regulations on standards, condition of facilities and technique of the registry agency and implement the unification of registry of railway transport vehicles.	in the area.	
LAW RAILWAYS	ON	Article 46. Conditions on railway personnel in direct service of train operation	Minister of Transport defines the contents, programs of training, conditions for training bases of titles; standards of titles in direct train service; content and process of examination and organizes to grant, renew, and revoke train driver license		
LAW RAILWAYS	ON	Article 55. Types of urban railways		Provincial People's Committee proposes guideline for investment, construction, management and business of urban railway	
LAW RAILWAYS	ON	Article 56. Urban railway development policies		Provincial People's Committee proposes guideline for construction investment, preferential policies to attract the resources to invest in construction and operation of urban railway.	
LAW RAILWAYS	ON	Article 60. Scope of urban railway work protection and traffic safety corridors	Scope of urban railway work protection and traffic safety corridors is stipulated by the Minister of Transport for each type of urban railway transport.		
LAW RAILWAYS	ON	Article 61. Management and maintenance of urban railway infrastructures		Provincial People's Committees provide regulations on management and maintenance of urban railway infrastructure of organizations and individuals investing in urban railway business in accordance with law.	
LAW RAILWAYS	ON	Article 62. Urban railway transport business		Fare of urban railway transport is stipulated by the Provincial People's Committee regulations. Subsidy of urban railway transport is performed under a	

			contract between the Provincial People's Committee and the urban railway transport operation enterprises.	
LAW ON RAILWAYS	Article 75. Safety certificate	MOT prescribes in detail for conditions and contents, certification procedures for safety and type of railway business enterprises that must have safety certificate.		
LAW ON ROAD TRAFFIC	Article 85. State management responsibilities for road traffic	<p>MOT is responsible before the Government for the State management of road traffic:</p> <ul style="list-style-type: none"> + To make planning, plans and policies for development of road traffic; develop and direct the implementation of the national program on road traffic safety. + To promulgate and organize the implementation of legal documents on road traffic; regulations and standards on road traffic. + To propagate, disseminate and educate law on road traffic. + To organization manage, maintain and protect roadway infrastructure. + To perform registration, issuance and withdrawal of number plates of road vehicles; issuance and withdrawal of certificates of quality, technical safety and environmental protection of road transport vehicles. + To manage the training and examination of drivers; to grant, renew and withdraw driving licenses, certificate of legal knowledge training on road + To manage transport activities and transport support services; to organize roadway rescue. + To research and apply science and 	People's Committees at all levels within their duties and powers performs governmental management of road traffic in accordance with this Law and other provisions of the relevant laws within the local area.	Ministry of Public Security performs the task of governmental managing of road traffic in accordance with this Law and other provisions of the relevant laws; implements measures to ensure traffic order and safety; coordinates with the MOT to protect road traffic infrastructure.

		<p>technology on the road; to train officials and technical workers of road traffic.</p> <p>+ To check, inspect and handle complaints and denunciations; to handle violations of the law on road traffic.</p> <p>+ To perform international cooperation on roadway</p>		
LAW ON ROAD TRAFFIC	Article 6. Road traffic and transportation planning	MOT make planning for road transportation in the whole country, inter-region, region; national highway planning, highways to submit to the Prime Minister for approval after obtaining opinions of the concerned ministries, ministerial-level agencies and Provincial People's Committees.	Provincial People's Committees formulates and submits to People's Council of the same level for decision on road transportation planning managed by local authority	
LAW ON ROAD TRAFFIC	Article 7. Road traffic law propagation, dissemination and education		People's Committees at all levels within the duties and powers are responsible to organize propagation, dissemination, education about law on road traffic locally.	Ministry of Education and Training is responsible for putting the law on road traffic on the curriculum in schools and other educational establishments to suit each learning major and grade
LAW ON ROAD TRAFFIC	Article 10. Road signal system	Minister of Transport prescribes in details for road signal		
LAW ON ROAD TRAFFIC	Article 12. Speed and distance between vehicles	Minister of Transport regulates vehicle speed and location of speed information signs; implements setting of speed instruction signs on the national highway.	Chairman of the Provincial People's Committee organizes installation of setting speed instruction signs on the roads managed by local authorities.	
LAW ON ROAD TRAFFIC	Article 28. Load-bearing capacity and size limits of roads	Minister of Transport regulates load bearing, size limits of road and announces load bearing, size limits of road of national highways; regulates on granting circulation permit for vehicles overloaded and oversized limit of road, caterpillar vehicles that might damage the road surface.	Chairman of the Provincial People's Committee announces load bearing, size limits of roads managed by local authorities.	
LAW ON ROAD TRAFFIC	Article 37.	Minister of Transport is responsible	Chairman of the Provincial People's	Ministry of Public Security instructs organization of

TRAFFIC	Organization of traffic and direction of traffic	for organization of transport in national highway system;	Committee is responsible for organization of traffic on the road system under its management area/	traffic control by traffic police: + Command, control road traffic; guide and order traffic participants to abide traffic rules; + When traffic jam happens or other requirements is required for security and order, it is allowed to temporarily suspense traveling in a certain number of road sections, to distribute flows and routines and temporary stops or parking for vehicles.
LAW ON ROAD TRAFFIC	Article 38. Responsibilities of individuals, agencies and organizations when traffic accidents occur		Organize to handle traffic accidents happened in the locality	Ministry of Public Security is responsible for doing statistical work, gathering and developing a database of information on road traffic accidents, providing agencies, organizations and individuals as prescribed by law.
LAW ON ROAD TRAFFIC	Article 39. Road classification	National highway system is decided by MOT	The system of provincial road, urban road decided by the chairman of provincial People's Committee after agreement with the MOT (for the provincial road) and an agreement with the MOT and the Ministry of Construction (for urban roads);	
LAW ON ROAD TRAFFIC	Article 41. Road technical standards	MOT develops and guides implementation of technical standards of road grades;		Ministry of Science and Technology issues national technical standards of road levels.
LAW ON ROAD TRAFFIC	Article 42. Land funds reserved for road infrastructure facilities		Identify and manage land for construction projects of road infrastructure in accordance with approved infrastructure planning in road traffic.	
LAW ON ROAD TRAFFIC	Article 46. Investment in construction and exploitation of road infrastructure facilities		City People's Committee directs the People's Committees of the competent authorities to be in charge of organizing land acquisition in accordance the decision on land acquisition of governmental competent agencies and to facilitate organizations and individuals investing in construction, operation and exploitation of road traffic infrastructure.	
LAW ON ROAD TRAFFIC	Article 48. Road administration and maintenance	+ Minister of Transport provides regulations on management and maintenance of roads + National Highway System managed	HPC is responsible for the system of provincial roads and urban roads.	

		by MOT		
LAW ON ROAD TRAFFIC	Article 50. Building of level crossings between roads and railroad tracks	MOT stipulates construction of the intersection at grade between the road and the railways, having design to ensure technical standards and traffic safety conditions		
LAW ON ROAD TRAFFIC	Article 51. Car terminals, parking lots, roadside service stations, vehicle mass inspection stations and road toll stations	MOT stipulates technical standards of bus stations, parking lots, bus stops, toll stations, vehicle load examination stations; regulations on organization and operation of toll stations and vehicle load examination stations		
LAW ON ROAD TRAFFIC	Article 52. Protection of road infrastructure facilities	MOT organizes and guides the implementation of protection of infrastructure of road traffic; examines and inspects the implementation of the provisions of law on management and protection of road transport infrastructure	People's Committees at all levels protects the infrastructure of road traffic in the locality; protects the road safety corridor as prescribed by law	Ministry of Public Security instructs and guides police forces to check and handle violations of law on protection of infrastructure road under its competence
LAW ON ROAD TRAFFIC	Article 53. Conditions for motor vehicles to join in road traffic	Minister of Transport regulates on technical quality, safety and environmental protection of motor vehicles allowed in traffic, except motor vehicles of military and police using for purposes of national defense and security		
LAW ON ROAD TRAFFIC	Article 55. Assurance of quality, technical safety and environmental protection standards of motor vehicles joining in road traffic	Minister of Transport regulates conditions, standards and granting license for the facility of registry of motor vehicles; regulates and implement motor vehicle verification		Minister of Defence, Minister of Public Security stipulates and organizes verification of military and police motor vehicles that are used for purposes of national defence and security
LAW ON ROAD TRAFFIC	Article 61. Driver training, examination to grant driver licenses	Minister of Transport stipulates the conditions, standards and licensing for educational institutions; prescribes form, contents and curriculums; examination and granting, renewal and withdrawal of driving licenses		

LAW ON ROAD TRAFFIC	Article 68. Passenger transportation by car	Minister of Transport stipulates organization and management of passenger transport by car.		
	Article 72. Cargo transportation by car	Minister of Transport stipulates organization and management of cargo transport by car.		
LAW ON ROAD TRAFFIC	Article 79. . Road transportation in urban areas	Provincial People's Committees specifies the activities of road transport in urban areas and the proportion of passenger vehicles to meet the travel demands of the disables.		
LAW ON ROAD TRAFFIC	Article 82. . Road transportation support services	Minister of Transport stipulates in detail on road transportation support services.		
LAW ON ENVIRONMENTAL PROTECTION	<p>Article 142. State management responsibilities of Ministers, heads of ministerial level bodies on environmental protection</p> <p>Article 143. State management responsibilities of the people' committees of all levels on environmental protection</p>	<p>The Minister of Transport presides over and coordinates with the Minister of Natural Resources and Environment, Ministers, heads of ministerial-level agencies and chairman of the provincial People's Committee to organize the implementation of the law on environmental protection in the construction of traffic infrastructure, management of transportation vehicles and other activities in the field of management;</p>	<p>HPC is responsible to organize the implementation of environmental laws in building transport infrastructure in the city:</p> <ul style="list-style-type: none"> - To develop, promulgate legal documents, programs and plans for environmental protection in transport infrastructures - To organize and implement laws, strategies, programs, plans and tasks on the environmental protection of transport; - To organize assessment and preparation of report on transport environment; To propagandize, disseminate and educate policies and laws on environmental protection of transport; - To organize evaluation and approval for planning of environmental protection, report on environmental impact assessment in construction of transport 	

			<p>infrastructure;</p> <ul style="list-style-type: none"> - To grant, extend, withdraw licenses, certificates of environmental protection in construction of transport infrastructure; - To check, inspect and handle violations of the law on environmental protection 	
LAW ON URBAN PLANNING	Article 14. Responsibility for governmental management about urban planning		HPC is responsible to perform state management of urban planning in localities under the Government's decentralization	The Ministry of Construction is responsible before the Government for performing state management of urban planning; to preside over and coordinate with state agencies in implementing the state management of urban planning.
	Article 37. Contents of urban technical infrastructure planning		City People Committee makes planning of urban transport including determination of land for construction and development of transport, location and scale of hub works; organizes urban transport system in on-ground, elevation and underground; determines protection area and traffic safety corridor.	
LAW ON LAND	Article 23. Responsibility for governmental management about land		People's Committees at all levels have the responsibility to manage state land (for traffic, transport infrastructure) locally in accordance with authority.	<p>Ministry of Natural Resources and Environment is responsible before the Government in unification of state management of land (land for transport)</p> <ul style="list-style-type: none"> - To issue of normative acts - To identify administrative boundaries, to prepare and manage files of administrative boundary, and make administrative boundary map. - To conduct survey, measurement, and make cadastral maps, maps of land use current situation and map of land use planning, investigate and evaluate land resources; investigate and set up land prices. - To manage the planning and plan of land use. - To manage land allocation, land for lease, land acquisition, change of land use purpose. - To manage compensation, support and resettlement in case of land acquisition.

				<ul style="list-style-type: none"> - To register land, prepare and manage cadastral records, to grant certificate of land use rights, ownership of houses and other assets attached to the land. - To do statistics and inventory of land. - To build up land information system. - To carry out financial management of land and land prices. - To manage and supervise the implementation of the rights and obligations of land users. - To inspect, check, monitor, track and evaluate execution of regulations of the law on land and handle violations of law on land. - To disseminate and educate law on land. - To resolve land disputes; to handle complaints and denunciations in the management and use of land. - To manage services activities on land.
LAW ON ELECTRICITY	Article 38. Authority to issue, amend, supplement and withdraw licenses for electricity activities		Provincial People's Committees grants license for electricity activities to organizations and individuals having small-scale electricity activities in localities under the guidance of the Ministry of Industry and Trade	Ministry of Industry and Trade grants license of electricity activities for units of electricity generation, power transmission, power distribution with connection to the national electricity system, for units trading on wholesale and retail of electric and consulting of electrical sector
LAW ON PRICE	Article 8. State management competence in the field of price	MOT within its responsibilities and powers is responsible for performing the state management of prices in the fields prescribed by of law	Provincial People's Committee within its duties and powers, is responsible for performing the function of state management in the field of price (UR transport fares) locally prescribed by law	The Ministry of Finance is responsible before the Government for performing state management functions in relation to prices
LAW ON CONSTRUCTION	Article 162. Responsibilities of the Ministry of Construction Article 163. Responsibilities of ministries, ministerial-level agencies Article 164. Responsibilities of	MOT: - To coordinate with the MOC performs governmental management of investment and construction activities and is responsible for quality control of UR construction work;	HPC: - To perform the state management on UR construction investment activities in the local area in accordance with decentralization of the Government; promulgate documents according to its competence; direct the implementation of construction planning and construction	MOC: - To preside over formulating and submitting to the Government and the Prime Minister legal documents, strategies, schemes, master plans and plans on development of the construction market and capacity of the construction sector. - To promulgate, and organize the implementation of,

	<p>People's Committees at all levels</p>	<ul style="list-style-type: none"> - To research, issue, guide and supervise the implementation of regulations, standards and economic-technical benchmark of UR sector after obtaining the consent of the MOC; - To monitor, inspection and summarize the implementation situation of construction investment evaluation of UR works under its management as prescribed by law; - To coordinate and support the ministries, agencies and other relevant organizations and People's Committees at all levels in the implementation of investment projects on UR construction regarding matters within its management area. 	<p>investment plans; organize the provision of guidance, examination and handling of violations in construction investment activities;</p> <ul style="list-style-type: none"> - To Coordinate with and support MOT and MOC for implementation of UR construction investment projects in the area under its management; To be responsible for quality management of UR construction works under the assigned area. - To make Send periodical and annual reports on the management of their UR construction investment activities to the MOC for summarization and monitoring; 	<p>legal documents on construction according to its competence; to promulgate national technical regulations on construction and documents on construction techniques according to its competence.</p> <ul style="list-style-type: none"> - To organize and manage construction planning, project management activities and appraisal of construction projects and designs; to promulgate and publicize construction norms and prices. - To direct, guide, examine and assess the quality management of construction works; - To grant, re-grant, adjust, extend and withdraw licenses and certificates in construction investment activities according to its competence. - To examine, inspect and settle complaints and denunciations and handle violations in construction investment activities. - To organize scientific and technological research and application in construction and dissemination of knowledge and law about construction. - To guide, examine and assess the management of safety, labor sanitation and environment in the construction of works. - To coordinate with related ministries, sectors and localities in examining and evaluating the implementation of projects. - To manage and provide information to serve construction investment activities. - To manage and archive construction work dossiers. - To carry out international cooperation in construction activities.
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DECREES OF THE GOVERNMENT

<p>Decree No. 14/2015/ND-CP on detailing and guiding implementation of Law on railways</p>	<p>Article 15. Detail regulation on transport railway transport</p>	<p>The Minister of Transport details and guides the implementation of transportation of freight, passengers, luggage, baggage on the railway.</p>		
	<p>Article 16. Development and announcement of mission orders on loading capacity, speed, and train operation diagram</p>	<p>The Minister of Transport guides the implementation of development, promulgation and publication of mission orders on loading capacity, speed, and train operation diagram on national railway and urban railway.</p>		
	<p>Article 39. Staffs directly serving train operation of urban railway</p>	<p>The Minister of Transport stipulates standards for staffs directly serving train operation of urban railway prescribed in Clause 1 of this Article.</p>		
	<p>Article 40. Certificate of safety for urban railway system</p>	<p>MOT issues regulations on the safety of urban railway systems and conditions, order and procedures for safety certification system for urban railway</p>		
<p>Responsibilities of ministries and provincial people committees regarding guarantee of safety and order in railway transport</p>	<p>Article 41. Responsibilities of MOT:</p> <ul style="list-style-type: none"> - To develop standards, regulations, economic and technical norms in the field of rail sector to issue in accordance with its authority or submit to the governmental agencies for announcement. - To provide regulations for bases in charge of design, new production, repair, and registry of railway equipment and vehicles; regulations and organization of the registration and registry of railway vehicles. - To provide regulations on contents, training programs and conditions for establishments undertaking training of staff titles directly serving train operation; to manage training and grant train driver 	<p>Responsibilities of City People Committee:</p> <ul style="list-style-type: none"> - To direct and organize the propagation and dissemination of law order and safety of railway traffic; take all necessary measures to establish order and discipline, railway traffic safety; to assign to the District People's Committee, Commune People's Committee where have railway projects that are under their responsibility for protection of railway works at locality. - To make plan and direct the clearance of illegal construction works on the land areas reserved for railway. - To steering the lower-level People Committee where its location has damaged tracked cause by accidents or disasters in 	<p>Ministry of Public Security:</p> <ol style="list-style-type: none"> 1. To organize and direct the work to ensure security, order and safety of railway traffic. 2. To check and penalize violations of security, order and safety of railway traffic. 3. To preside over investigating and penalizing railway accidents rail; to do statistic, monitoring, analysis work and conclude causes of railway accidents; to provide data on railway traffic accidents. 4. To preside over and coordinate with the MOT to make regulations and make recommendations to ministries, provincial People's Committees to implement preventive measures and overcome the causes of railway traffic accidents. <p>Ministry of Finance</p>	

		<p>licenses.</p> <ul style="list-style-type: none"> - To inspect, examine and handle violations of law in railway operations as prescribed by law. - To coordinate with the local People's Committees and related ministries to carry out propaganda, popularization and guide about railway law and ensure order and safety of railway transport; to resolve and overcome the consequences of the incident or accident in railway transport. - To coordinate with the Ministry of Public Security to monitor and analyse the causes of serious and particularly serious accidents to propose effective measures to limit railway traffic accidents. 	<p>collaboration with the railway sector to promptly deal with the consequences and restore railway traffic.</p>	<ol style="list-style-type: none"> 1. To ensure funding for management and maintenance of railway infrastructure in the country invested by the Government. 2. To ensure funding to ensure order and safety of railway traffic at the rate approved by the Prime Minister on the proposal of the MOT and the Ministry of Public Security. <p>Ministry of Information and Communications</p> <ol style="list-style-type: none"> 1. To develop plan of communication and popularization about law on railway regularly and widely to the entire population. 2. To direct the Central and Local press agencies to regularly propagate and disseminate the law on railways, encouraging the people to strictly abide by law on order and safety of railway traffic. 3. To guide permission for advertising without affecting the order and safety of railway traffic. <p>Ministry of Education and Training</p> <p>To preside over and coordinate with the MOT and Ministry of Public Security to select contents necessary to ensure order and safety of railway transport for disseminating and educating pupils and students suitable with learning major and grade.</p>
<p>Decree No. 177/2013/NĐ-CP detailing and guiding implementation of Law on Price</p>	<p>Competence of governmental management in the field of prices</p>	<p>Competence of governmental management in the field of prices of MOT</p> <ol style="list-style-type: none"> 1. To submit to the Government the policies, management methods and management of prices of goods and services in the fields of governmental management of the MOT 2. To promulgate of normative legal documents on transport service prices under its competence. 3. To implement and direct the 	<p>Competence of governmental management in the field of prices of Provincial People Committee</p> <ul style="list-style-type: none"> - To promulgate legal documents on prices within its jurisdiction. - To organize and direct the implementation of policies, measures, decisions on prices of goods and services of the Government, Prime Minister, the MOF and the in-line management ministries of. - To set prices of goods and services 	<p>Competence of governmental management in the field of prices of MOF</p> <ul style="list-style-type: none"> - To study and develop to submit to the Government for promulgation or issue pricing policy and price control measures within its jurisdiction. - To issue or submit to the competence agencies to issue legal documents on pricing field. - To guide and direct the implementation of policies, measures, and decisions on prices of goods and services of the Government, the Prime Minister. - To set prices of goods and services within its

		<p>implementation of policies, measures and decisions on prices of goods and services of the Government, Prime Minister, the MOF under the management field of MOT.</p> <p>4. To issued economic-technical norms; to determine the prices of transport goods and services under its competence.</p> <p>5. To inspect, check the compliance with the provisions of the law on price and other provisions of relevant laws under the management area of the ministry; to handle violations of law on prices within its competence.</p>	<p>within its jurisdiction.</p> <p>- To check and inspect the observance of the provisions of the law on price and other provisions of relevant law in the locality; to settle complaints and denunciations and handle violations of the law on prices according to its competence.</p>	<p>jurisdiction.</p> <p>- To perform the function of specialized inspection on prices.</p>
	Article 23. Price inspectorate	.	Inspectorate of Department of Finance performs the function of inspection on prices within the provinces.	Inspectorate of the MOF and the Price Management Department under the MOF to perform the function of inspection on prices in the whole country
Decree No. 130/ND-CP of the Government on the production of public-utility products and services	Article 5. Selection of method of provision of public-utility products services	<p>Line ministry (MOT) is responsible for formulation and promulgation of regulations on management of public utility services and products within the functions and assigned tasks, in which it must be defined in terms of quality and specifications and levels of implementation, price, unit price stipulated by the Government to mainly implement in compliance with procurement and order methods.</p> <p>For example: maintenance services for railway infrastructure, maritime services, flight control</p>	<p>The City People Committee is responsible for formulation and promulgation of regulations on management of public utility services and products within the functions and assigned tasks, in which it must be defined in terms of quality and specifications and levels of implementation, price, unit price stipulated by the Government to mainly implement in compliance with procurement and order methods.</p> <p>For example: public passenger transport, lighting and water supply and drainage</p>	
	Article 6. Competence agencies and organization to decide method of provision	<p>MOT decides method of providing public-utility products and services for the public-utility products and services under the expenditure estimates of the central budget and allocates to the subordinate</p>	<p>The City People Committee decides method of providing public-utility products and services for the public-utility products and services under the</p>	

	<p>of public-utility products and services</p>	<p>units for implementation as prescribed.</p>	<p>expenditure estimates of the local budget and allocates to the subordinate units for implementation as prescribed.</p>	
	<p>Article 7. Competence to decide level of subsidy for production and provision of public-utility products and services</p>	<p>For public-utility products and services under management of the line-governing ministry, then that ministry coordinates with MOF to decide the level of specific subsidy.</p>	<p>For public-utility products and services under management of Provincial People Committee, then the specialized departments set up subsidy scheme to send to DOF for appraisal and submission to Provincial People Committee for decision on specific subsidy.</p>	<p>For nationally important public products, services, MOF chairs and coordinates with the concerned agencies to decide or propose the Prime Minister to decide on the level of specific subsidy as prescribed.</p>
<p>Decree No. 24/2014/ND-CP of the Government on regulations on specialized agencies directly under People Committees of provinces and city directly under the Central government;</p>	<p>Article 8. Department in locality</p>		<p>7. DOT</p> <p>To advise and assist the Provincial People Committee in governmental management in roadways, inland waterways, urban railways; transportation; traffic safety; management; exploitation, maintenance of urban transport infrastructure including roads, bridges, fly-overs, sidewalks, streets, separators, road signboard systems, traffic control signals, underpasses, tunnels for motors, pedestrian bridges, bus stations, parking yards</p> <p>8. Ministry of Construction:</p> <p>To advise and assist the Provincial People Committee in governmental management in construction planning and architecture; activities of urban construction and development; urban infrastructure and industrial parks, economic zones, hi-tech parks (including water supply, drainage in urban area and industrial parks, economic zones, hi-tech parks; management of</p>	

			<p>normal solid waste in urban areas, industrial zones and economic zones, hi-tech parks, production facilities construction materials, urban lighting, parks, urban green trees; management of cemetery, except martyrs cemetery; urban transport infrastructure excluding management of the exploitation, use and maintenance of urban transport infrastructure; management of urban underground construction; management of common use infrastructure urban engineering); House; office; real estate market; construction materials.</p>	
<p>Decree No. 46/2015/ND-CP of the Government dated 05/12/2015 on the management and maintenance of quality of construction works</p>	<p>Article 51. Responsibilities of governmental management for quality of construction works</p>	<p>MOT manages the quality of construction works except the construction works that are managed by MOC</p>	<p>City People's Committee performs governmental management over the quality of construction work in its area. Department of Construction and Department of specialized construction management assist the City People's Committees in managing quality of specialized works in its localities as follows:</p> <p>a) Department of Construction manages the quality of civil works; industrial works of construction materials, light industrial works; public utility works; urban transport works except railway works, bridges over the river and the highway;</p> <p>b) Department of Transport manages the quality of transport work except transport works managed by the Department of Construction.</p> <p>c) Department of Agriculture and Rural Development manages the quality of agricultural and rural development work; Department of Industry and Trade manages industrial works except industrial</p>	<ul style="list-style-type: none"> - Ministry of Construction unifies governmental management of the quality of construction works in the country and manages the quality of specialized construction works, including: Civil works; industrial works of construction materials; light industrial works; public utility works; urban transport works except railway works, bridges over the river and the highway. - Ministry of Agriculture and Rural Development manages the quality of agricultural and rural development work; - Ministry of Department of Industry and Trade manages industrial works except industrial works managed by the Ministry of Construction - Ministry of Defense, Ministry of Public Security Quality manages the quality of defense and security works.

			works managed by the Department of Construction.	
CIRCULAR				
- Circular No. 02/2009/BGTVT about quality control, technical safety and environmental protection of rail transport vehicles	Article 13. Responsibilities of Vietnam Register Department	<p>MOT assigns Vietnam Register Department (under the Ministry of Transport):</p> <ul style="list-style-type: none"> - To implement registration for railway vehicle in the whole country. - To comply with the provisions of the existing regulations, standards and technical regulations when performing inspection of quality and technical safety of products. - To develop and issue guidance documents related to registration work within its jurisdiction. - To perform inspection and certification in objective and lawful manner. The Heads of registry agencies and the person directly examining are responsible for the inspection results. - To unify management regarding issuance and granting certificate for the inspected objects. - To review, evaluate and authorize testing department and to perform registration in abroad. - To collection and use charges and fees for registration under current regulations. - To annually report to the MOT on its performance of quality inspection, technical safety and environmental protection of railway vehicles 		
- Circular No. 01/2013/TT-BGTVT providing regulations on registration of	Article 14. Responsibilities of the agency for vehicle registration (Vietnam register	<p>The Ministry of Transport is responsible to assigns Vietnam Register Department as follows:</p> <ol style="list-style-type: none"> 1. To implement the registration of railway vehicles under the provisions of 		

<p>railway transport vehicles</p>	<p>department)</p>	<p>this Circular, to guide vehicle owners to prepare registration dossiers of vehicles. 2. To develop database for management railway vehicles nationwide; to store and manage vehicle registration records. 3. To monitor and report to the Ministry of Transport every 12 months on the registration of vehicles. 4. To management, print and use printing serving for registration of vehicles. 5. To collect and use the fees of vehicle registration as prescribed by law.</p>		
<p>Circular No.30/2014/TT-BGTVT providing regulations on Safety Certificate for railway enterprises;</p>	<p>Article 20. Responsibility of Vietnam Railway Administration</p>	<p>The Ministry of Transport takes responsibility to assign Vietnam Railway Administration to implement as follows: + To inform the businesses subject to requirement of Security Certificate, to guide the implementation of the procedures for granting, re-granting of safety certificates. + To appraise and report on conditions for granting Certificate of Safety, records for proving safety condition of the enterprise when implementing procedures for newly granting, re-granting of safety certificates and to grant safety certificate as prescribed. + To chair and coordinate with concerned agencies in conducting the annual inspection of implementation of the contents in the statement report for conditions for granting Certificate of Safety as prescribed in this Circular and to handle violations as prescribed by law. + To withdraw the Safety Certificate as prescribed. + To gather happened problems and report to MOT for solutions. + To take responsibility before law and</p>		

		MOT to grant, renew, and with draw certificate of safety.		
Circular No. 05/2015/TT-BGTVT providing regulations on standards of titles of the staffs who directly serve the urban railway train operation	Article 6. Responsibility of Vietnam Railway Administration	The Ministry of Transport takes responsibility to assign Vietnam Railway Administration to implement as follows: 1. To guide, disseminate and check the implementation of this Circular. During the implementation process, to gather recommendations, proposals, studies submitted to the MOT to amend and supplement regulations to suit the actual situation. 2. To preside over and coordinate with the concerned agencies and units to regularly or non-regularly implement standards for railway employees directly serving the urban railway train operation under the provisions of law.		
Circular No.31/2015/TT-BGTVT dated 07/17/2015 providing provisions for the contents, examinations process for urban railway train driver license	Article 23. Responsibility of Vietnam Railway Administration	The Ministry of Transport takes responsibility to assign Vietnam Railway Administration to implement as follows: 1. To implement regulations on content, process of examination for urban railway driving license 2. To chair and coordinate with the enterprises which manage and operate urban railway to develop and approve for examination content appropriate for each line, each type of urban railway train; to develop and approve the rules on examination. 3. To chair and coordinate with relevant agencies to make examination questions; to approve and implement. 4. To evaluate and summarize the examinations for granting driving license, reporting to MOT.		
Circular No.	Article 15.		- Provincial People's Committee stipulates	

<p>37/2014/TT-BGTVT providing provisions on the protection scope of works and corridor urban railway traffic safety</p>	<p>Responsibility for management and protection</p>		<p>the management and maintenance of urban railway infrastructure of organizations and individuals investing in urban railway business in accordance with law. - People's Committees at all levels where the railways are crossing are responsible for disseminating and educating people to protect railway infrastructure; preventing and timely handling infringements to railway infrastructure and railway transport safety in their areas.</p>	
<p>Circular No.20/2013/TT-BGTVT providing regulations on the management and maintenance of railway works</p>	<p>Article 1. Scope of adjustment</p>		<p>Management and maintenance of urban railway works is implemented based on regulations Provincial People's Committee.</p>	
<p>Joint Circular No. 42/2015/TTLT-BGTVT-BNV guiding functions, responsibilities, powers and organizational structures of specialized agencies transport of the people committees of provinces, cities directly under the central government</p>	<p>Article 1. Position and functions</p>		<p>1. DOT is a specialized agency of the People's Committees of provinces and cities under central government (hereinafter referred to as the Provincial People's Committee), performing the function to advise and assist the PPC in governmental management in roadways, inland waterways, urban railways; transportation; traffic safety; management; exploitation, maintenance of urban transport infrastructure including roads, bridges, fly-overs, sidewalks, streets, separators, road signboard systems, traffic control signals, underpasses, tunnels for motors, pedestrian bridges, bus stations, parking yards in the locality.</p> <p>2. DOT has its legal status, separate seal</p>	

			and account; is subject to the direction and management of the organization, staffing and activities of Provincial People Committee; and simultaneously under the direction, guidance, inspection, checking regarding expertise and profession of MOT	
DECISIONS ISSUED BY MINISTRIES AND HPC				
-Decision No. 17/2008/QĐ-UBND of HPC providing regulations on functions, responsibilities, powers and organizational structure of the Hanoi Department of Transport	Article 1. Provisions on position, functions, responsibilities, rights and organizational structure of DOT		DOT shall play function of advising and assisting HPC in governmental management of transportation, including roadways, waterways, urban railways, transportation, transport safety in Hanoi City;	
Decision No. 5579/QĐ-UBND of HPC dated 13/09/2013 regarding "Approval for framework scheme for fare policy and e-ticket technology applicable to urban public passenger transport network in Hanoi city"	Article 2: Allocation for implementation		DOT: To chair and coordinate with other concerned departments to implement the contents of the scheme after getting approval from City People's Committee. On behalf of the city, to perform governmental management of public passenger transport, including e-ticket system through establishment, management and control of e-ticketing system administration Centre, to advise the city in promulgate specify regulations on framework for fare policy and e-ticket technology. To coordinate and guide the project owner during implementation process of e-ticket item under public passenger transport projects in the Hanoi City.	

3. Experiences and functions of urban railway management models in the world

In this part, the report shall describe and analyse Functions and methods of managing UR systems in several countries which has developed Public transport system. Typical examples include 2 developed countries, i.e. France (in Europe) and Japan (in Asia), as two very experienced countries in UR management.

The regulator of Ile – de – France region (Paris capital city area) is STIFF, which manages the biggest public transport system in Europe, and having quite close relationship with HPC via assistances for public transport, especially supports in developing infrastructures and managing bus system.

MLIT – Japan has also many activities to support common development for transport system in Vietnam, especially for railway in general, and UR in particular, such as funding, supporting by sharing experiences for safe operation, etc. In addition, the institutional organization for railway has many similarities with Vietnam.

Those are important basis for Hanoi regulator to learn and refer to their experiences, in order to work out suitable management scheme for the real context of Vietnam.

3.1 Experience of France - Transport organizer in Ile – de – France (STIFF)

3.1.1 Features of Ile – de – France

Île-de-France has the population of 11.6 million and 6 million jobs. The area contributes 29% GDP and 22.5% of the whole country's labour force. It covers an area of 12,000 square km. The travel volume is around 41 million each day in the whole region. On average, each person travels around 3.9 times/day and the average length of each time is 4.4km. Of which, walking accounts for 39%, private vehicle is 38 %, and public transport is 20%. Nearly 8.3 million travelling times each day is by public transport, which is 1.5 million more than that of 2001, achieving growth rate of 21%. In general, total length of public transport travelling is huge: from 8.7km in 2001 to 9km in 2010.

The transport organizing agency of the area is STIFF.

3.1.2 Public transport agency (PTA) of Ile – de – France: STIFF

Established in 1959, STIFF was under the management of the Government until July 1st 2005. Until then, the Government had a clear majority in the Board of Directors and held the Chairman position. The Government only withdrew when the management of UR was decentralized to local authorities and 2 years after implementing the zoning plan of railway transport. Currently, the French government has no representative in STIFF, the Capital region Board has the majority in the Board of Directors and holds the Chairman position of the Company. There are two representative sides in the components of the Board of Directors: representatives from the Economic side and representatives from the authorities of villages and cities, as well as authorities between villages in Île-de-France. There are 29 members of STIFF Board of Directors, chaired by Île-de-France president. STIFF is considered to be the GTCC regulator of the region, under which is transportation companies, i.e. SNCP and RATP.

STIFF is a general transportation organizer, which is competent to all forms of vehicles, over the administrative boundary of Île-de-France. Currently, STIFF is responsible for managing one of the biggest transportation networks in Europe:

- RER (Réseau express régional) : is the public railway system connecting Paris with the suburbs (Regional express system), consisting of 5 lines, 1,525 km, 448 stations, 1,167 million passengers per year.
- Metro: 14 lines, 217 km, 300 stations, 1,524 million passengers per year.

- Tramway: 4 lines, 70 stations, 42 km, 114 million passengers per year.
- Bus: 1,449 lines, 24,660 km, 32,024 stations, 1,332 million passengers per year

3.1.3. Responsibilities of STIFF

Main responsibilities of STIFF are:

- To define the necessary public transport services, fare level, capacity of the system, service purpose and quality;
- To bind network operating companies contractually and manage the operation of those companies;
- Develop plans and transportation planning;
- Conduct researches, implement modernized investment portfolio and develop the network;
- Set forth plans to connect vehicles in the network;
- Ensure the sustainability of financial balance.

3.1.4 Fare policies

Public transport organizer discusses and decides on the fare level each year. The increase in fare level depends on CPI and operation cost (there is preferential price for certain groups). Additionally, fare level also depends on the policies of regional Board and the aim to restrict the use of small change when buying tickets.

Currently, the fare level in Ile – de – France is calculated based on the fare zones. Until July 1st 2011, the whole Ile – de – France area was divided into 5 zones. Zone 1 is the central area of Paris, cover all Paris Commune. Zone 2 covers all of zone 1. Zone 5 is the farthest area from the centre. The regional fare level was set when STIFF had decided on the fare structure. All types of tickets (daily, weekly, monthly) were valid in each area and were applied to all public transportation modes. For example, a passenger buying a ticket to travel from zone 2 to zone 4 is free to travel around in these areas. However he/she must buy another ticket to go beyond these areas, for instance to zone 1 or zone 5.

Public transportation organizers in Europe, including France usually set the regional fare level. The advantage of this fare structure is its simplicity for public transportation organizers to compute and manage.

3.1.5 Finance

In Ile – de – France, Public transportation organizer STIFFF is assigned by the regional Board to manage financial activities of public transportation operation. In which, one important goal is to balance the financial sources, ensure the rationality of income and expenses so that public transportation activities could be stable and sustainable

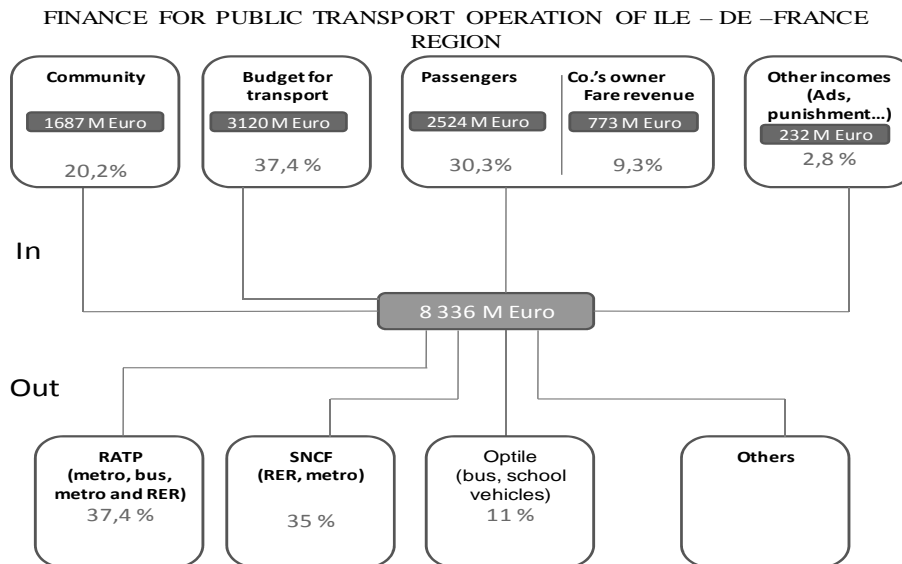


Figure:

Source: STIFF, 2011

Of STIFF's income source, passenger tickets only account for around 40%. So the rest must be covered by community financial assistance and transportation budget. Community financial assistance is comprised of capital and provincial donation and budget... Transportation budget is from urban transportation tax, accounting for 37.4%. Urban transportation tax is put on total salary budget of employers and enterprises with more than 9 employees, which is imposed all over France.

STIFF has contracts with transportation service supplier. Accordingly, after the annual budget has been approved, STIFF will transfer the operating fund for these companies. Besides, STIFF must have plans to invest in infrastructure, make major repairs and improve equipment.

3.1.6 Relations with operation companies

In Ile de France, UR network operation is assigned to state-owned companies: RATP, which was formerly a metro network operator in Paris, and French National Railway Company SNCF. Besides, there are 76 private companies and branches of different groups EOLIA TRANDEV, KEOLIS, RATP DEV...

There is no competition in the UR activities of Île-de- France. As a result, there is no bidding process. However, the activities in this area are managed under a contract signed between STIFF and each operating company. Accordingly, operating companies do not collect fare or conduct marketing campaigns. They are committed to providing services at rates predetermined by STIFF.

The strategic direction built by Stiff will be specified into goals, which will be committed to implement by companies. They are primarily related to ensuring the services

provided (quality and safety), price and costs. Contracts to ensure the implementation of the objectives generally last for 4 years. This will be the framework to ensure that the committed company would perform their duties and responsibilities in organizing and developing transportation network in Île - de - France.

To ensure the provision of services under the terms of the signed contract, STIFF, together with operating companies, prepares the efficiency evaluation index. These indicators will be combined with the specific objectives and financial stimulus measures. The new contract signed in 2012 placed incentives and priority on punctuality and information adequacy.

Since 2005, STIFF has had an ambitious policy, aiming at the modernization and development of the network. Under the management of the government, the public transportation network is not properly invested for a long time. Therefore, the target set for 2016 is to replace or overhaul the entire train system. The total amount invested in this policy reached 4 billion euros, 50% of the amount was undertaken by Stiff.

Stiff also signed contracts with various companies (RATP, SNCF, and members of the business association Optile) to assign them the role as investors. Specifically, during the 2008-2011 period, 7 billion euro investment was committed by RATP and SNCF, which is higher than the amount of 5 billion euros pledged in the previous contracts.

3.3.7 Incentive policy on use of public transport

A complete public transportation system will help improve traffic operation locally, protect the environmental and foster sustainable urban development. The investment and development of a complete and efficient Public transportation system, including different modes of transportation accounted for a big amount of the budget of the Ile - de - France. Failing to attract people to use Public transportation system is a waste, and the failure of Public transportation system may cause great damage to the region's economy. So STIFF proposed measures to encourage regional residents to use the public transportation system to the government.

One of the important policies proposed is to restrict people from using personal vehicles. Specifically, setting high parking fee for those who commute by personal vehicles or limiting the number and capacity of car parks in the city. Another measure is not to expand the area of road in which congestion often occurs, but to set priority to the construction of lanes for public transportation. It is important that transportation agencies should take measures and propaganda to convince people to change their lifestyles. The surveys show that people are aware of the benefits of these solutions and the majority accept them for better living quality.

In addition, the transportation organizer has policy to generate income to invest, develop and renovate Public transportation system. One solution has been applied not only in Ile - de France but all over France is levying urban transportation tax on firms with 09 employees or more. Tariffs in Paris ranging from 1.4 to 2.6 % of total salary fund of enterprises. On the other hand, there is a way for businesses to contribute to Public

transportation that is to support employees with Public transportation system usage fee. Since 2009, a policy that requires all employers to pay 50 % of monthly public transportation ticket of employees was applied all across France. This had very positive impact, on one hand to encourage people using Public transportation system, on the other hand to reduce pollution due to the impact of personal vehicles.

3.2: Japan experience – MLIT regulator (Ministry of Land, Infrastructure, Transport and Tourism)

3.2.1 Institutional model for management

Currently, institutional management systems in general and urban railways in particular in Japan are composed of 02 divisions: Administrative agency represented by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and enterprise division doing business in railways.

Ministry of Land, Infrastructure, Transport and Tourism - Railway Department is the railway administrative agency in Japan, in which Railway Department under MLIT is a specialized management agency on behalf of MLIT to manage railway operation:

- Develop a comprehensive policy for the railway sector: general planning for the railway system (UR)
- Granting licenses for railway companies; directing, supporting and supervising so that railway companies can operate and do business safely

The Japanese railway enterprises are licensed by competent governmental authorities to provide transportation services to people.

Besides private railway enterprises, there are businesses managed by local authorities and businesses invested by local authorities. In addition, there are enterprises investing in infrastructure and then transfer to operating companies for subcontractor (Railway company of class 3).

3.2.2 Current railway legal system in Japan.

Currently in Japan, there are 02 regulation codes for railway, including: Railway Operation Act and Railway Business Act.

- Railway Operation Act: regulates on the rights and obligations of railway businesses and railway users...

It was developed in 1900 as the basis of the basic legal regulations (Circulars and documents issued by MLIT), technical standards ...those railway enterprises must obey.

- Railway Business Act:

- + It is the only law provisions on railway business.
- + Regulates on the power of governmental authorities in granting licenses for new road construction, fares level, task completion, sites inspection... as well as obligations and procedures that railway businesses must perform.

3.2.3 Responsibilities and authorities on UR activities of MLIT regulator – Railway Bureau:

3.2.3.1 Train operation and safety:

In Japan, MLIT manages train operation and safety following Railway Business Act and Railway Operation Act of the government. This is the basis for MLIT to develop and issue circulars under their authority:

- Provisions to ensure safety.
- Railway technical standards system (Regulate the requirements and essential features related to techniques to ensure safety and proper operation).
- Infrastructure and rolling stock test method. (Articles 10, 11, 13 Railway Business Act)
- Report on railway problems and accidents. (Article 19 Railway Business Act)

Railway companies must follow and implement train operation and safety in accordance with the provisions and circulars of MLIT. In case the company does not guarantee business conditions, or risk the operational safety, MLIT has the right to require railway companies to improve the situation or may suspend and revoke business license (if necessary).

In addition, management agencies are responsible for approving the business plan of UR operating companies (Article 3,4,5 in Japanese Railway Business Act). Specifically, to consider the following conditions:

- + The suitability of the business plan on train operation.
- + The suitability of the business plan on train safety.
- + Whether the capacity of the company is guaranteed or not

One of the safety measures which MLIT attaches great importance to is the railway staff training program. Management agency will be in charge of examination and licensing for train drivers. Management agency will mandate and instruct big railway companies to develop professional trainings that follow general safety standards issued by MLIT.

During the operation of railway companies, MLIT organizes inspection teams and field inspection (Article 56 Railway Business Act). Purpose of the inspection is not only to detect, figure out and handle violations, but also to ensure safety and prevent unfortunate problems and accidents from happening. The inspection can be recurring or unannounced, consisting of experts from MLIT. Inspection often includes: safety inspections, inspection of rail operations.

- Safety Inspection:
 - The condition is compliance with the laws, regulations and circulars as MLIT' stipulation about transport safety.
 - The condition is compliance with regulations about facilities and equipment, train and operation
 - Implementation is compliance with regulations of licenses, certifications or reports.
 - Condition of dealing with incidents, disasters.
 - Condition to implement a preventing method for incidents and disasters
 - Strategies of repairing, repairing results for facilities, equipment and train.

- Condition to organize office staff to participate in exploiting activity related to secure and operational status.
- Condition of training and level of skills
- Inspection on railway business activity:
 - Condition is compliance with laws and regulations of operation
 - Fare and schedule of train

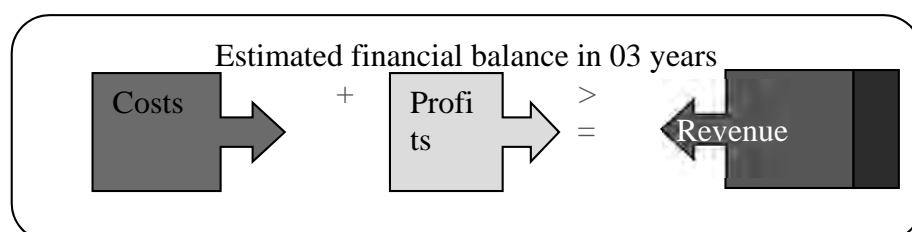
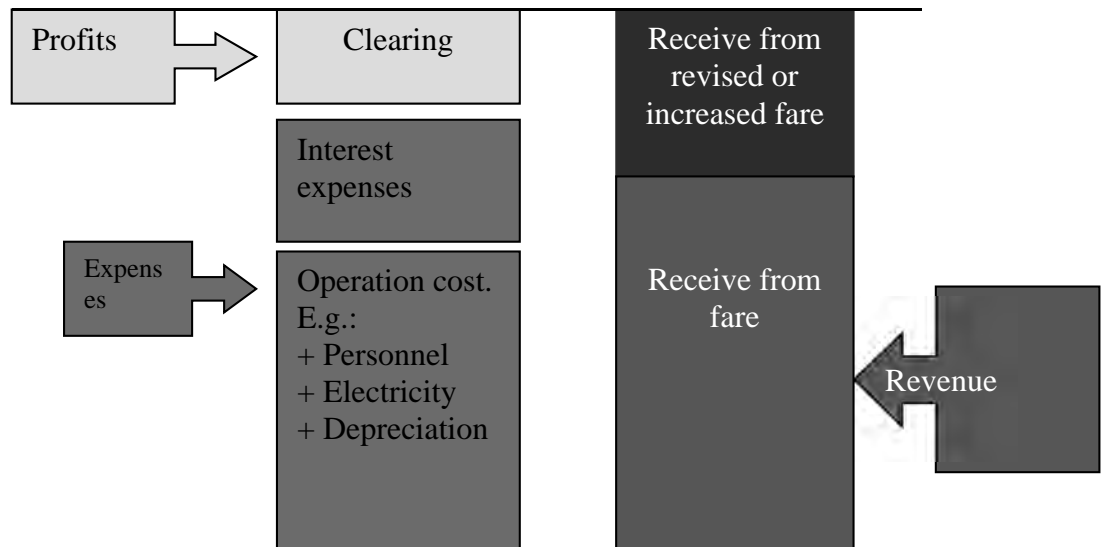
3.2.3.2 Approval on fare level:

According to Article 16 of Railway business Law: all railway transport business companies propose a ceiling price for passengers (passenger fare) as stipulated of the ordinance of Ministry of Land, Infrastructure, transport and tourism (MLIT) and submit to MLIT for approval. When there is a fare adjustment proposal from the company, the process of approval is repeated.

When MLIT Management Agency considers to approve for such proposal, MLIT experts are responsible for checking whether the ceiling price (passenger fare) exceeds the total of appropriate efficiency management plus a reasonable profit or not. Some kinds of approved fare including:

- Regular fare
- Discount fare (compared to regular fare): Example for the employee are discounted 30-50%, students and pupils are discounted 50-80%
- Fare for express train service

Table : Figure of finance balancing



3.2.3.3 Subsidy for urban railway system:

In Europe and America, It is popular for the State agency to support fare for public transport systems in general and urban railway in particular, in which the price support for the construction is 100%, for the operation is 20-80% of the cost.

The price support for Japanese urban railway system is implemented through a construction investment process. The price support of Central government is about 25%, local government is 25%, while the entire cost of construction depends on the capacity of urban railway business companies.

Before being supported from the MLIT Management Agency, urban railway enterprises are suffered an interest expense, high depreciation plus other operating expenses such as labour cost, power cost... Therefore, the enterprises should propose a high fare rate at the beginning of exploitation. Although lower fare rate will be considered, urban railway operating enterprises still get loss.

Thanks to the construction expense support from government, the interest expense and depreciation will be cut down due to the decreased construction expense, the urban railway operating enterprises will improve their balance sheets of finance. Thus, operating enterprises can decide to propose a more reasonable “considered price” because the losses will be improved.

In Japan, as the success of the privatization process of the railway sector, the private railway companies are currently unsupported costs during operation and exploitation. At the first operating phrase, companies will suffer a certain loss, the accumulated losses will be increased over time. Depending on the level of management capacity and the efforts of the railway companies, the financial status will be balanced, and about 30-40 years later, the railway businesses will be profitable.

The fact is that most of railway companies (metro) in Tokyo are profitable. This happens only in Taiwan.

Table : Operation features of several metro systems in the world (as of 2005)

	Tokyo		Seoul		Taipei	London	New York
	Tokyo Metro	Toei	Seoul Metro	SMRT			
Length (km)	183	109	135	152	67	408	37
Passengers (million/year)	2110	761	1440	819	361	971	1449
Passengers/km-day (000 persons)	32	19	29	15	15	7	11
Revenue/costs	1,29	1,07	0,74	0,55	1,07	0,59	0,51
Fare (US\$)	1,3 ~2,5	1,4 ~ 3,5	0,8~1,1		0,6 ~1,9	3,0 ~ 8,0	2,0~

(Source: Main issues of UR in Hanoi, Prof. Shigeru Morichi, GRIPS -08/2013)

3.3 Functions of several other public transport (urban railway) regulators:

1.3.1 CRTM - Consorcio Regional Transporte (Madrid region)

- Planning for public transport infrastructures: expand, newly develop metro lines, intersections, bus lines, etc.
- Planning and license the provision of public transport service: defining routes in the network, stops, schedule and controlling the quality of public transport service.
- Defining fare policy and fare level framework for public transport. Control monthly and annual pass, multi-modal ticket.
- Information of public transport, promotion and improving the image => encourage passengers to use public transport system

1.3.2 Land and transport authority (LTA) – Singapore

Main functions of LTA:

- Develop policies, regulations of road transport
- Plan for connection between transport and land use
- Plan, design and develop high speed transport system and infrastructures.
- Manage the transport and maintain related infrastructure system
- Policy to enforce public transport system
- Regulations on service quality of public transport
- Regulations on ownership of private transport modes
- Plan for bus network (since 2009)

Table : Compiling main functions of public transport authorities in the world

Functions / Responsibilities	Public transport regulator (Urban railway)					
	Grenoble/SMTC	STIFFF/ Ile-de-France	SYTRAL / Lyon-Rhone	CRTM/ Madrid	LTA/ Singapore	Railway bureau MLIT (Japan)
Managing transport service quality	x	x	x	x	x	x
Fare regulations	x	x	x	x		x
Fare subsidy	x	x	x	x		
Policy to encourage passengers to use urban railway	x	x	x	x	x	x
Regulations on infrastructure maintenance					x	
Planning, investing to	x	x	x	x	x	x

develop public transport						
Monitoring and operate safely	x	x	x	x	x	x

4. HPC's Responsibility for governmental management, roadmap for development of institutional model for urban railway system in Hanoi

4.1 Legal basis, responsibilities of HPC in governmental management of UR

On 14/06/2005, National Assembly of Vietnam issued Railway Law to regulate on the planning, investing, constructing and protecting railway infrastructures, railway vehicles, obligations and authorities of organizations and individuals relating to railway activities, transport rules, signals, and the guarantee of transport order and safety for railway, railway business.

This Law is applicable for organizations, individuals in and outside the country relating to railway activities in the boundary of the Socialist Republic of Vietnam, a importance basis for determination and proposal for role and responsibility of regulator in Hanoi. In railway law, which is mainly applicable for national railway, UR is also regulated insufficiently and unclear in terms of management, operation and maintenance. Below is the table to explain the responsibilities of MOT, HPC and proposals for applicable mechanism for organizations, and individuals relating to the management, operation and maintenance of UR in Hanoi City, contributing to clarification of governmental management about UR.

Table: Responsibilities of institutional bodies in urban railway activities (proposed)

Article	Description	MOT –VNRA (Proposed)	HPC –Proposed	Proposed		
				DOT	O&M Company (HMC)	Remark
4	<p>Basic principle in railway activities</p> <p>2. To develop railways under plannings and plans toward modernity and synchronism; to combine railway communications and transport with other modes of communications and transport</p>	<p>2. MOT (VNRA) carries out urban rail development, prepares feasibility study report in accordance with the general capital construction plan of Prime Minister and according to Railway Law, urban railway line, urban railway share the same track with national railway will be delivered by MOT to line agency to be the employer for management and operation.</p>	<p>2. All urban railway lines in the general planning of the Prime Minister will be allocated by HPC – the line agency – to competent authorities to advise on investments, construction, of the construction, management and operation (except for Line 1 sharing with National railway).</p> <p>- HPC assigns the concerned bodies such as DOT, MRB to study, connect public transport modes such as construction of urban railway to the airport, in combination with bus, BRT</p>	<p>2.DOT helps HPC make F/S report, call for investment, be construction investor, manage urban railway lines in the general construction plan of Prime Minister in Deion No. 1259/QD-TTg.</p>		

4	4. To clearly define the state management by state agencies from business management by enterprises; the infrastructure business from transport business on railways invested by the State	4. MOT is the highest professional governmental management organization in the field of transportation, the local authority shall manage urban railway. However, MOT is responsible for development of legal documents about urban railway governmental management and organization of inspectorate for implementation of urban railway law.	4. HPC issued Decision 17/2008/QĐ-UBND functions, responsibilities, power and organizational structure of DOT, including governmental management of urban railway - Hanoi Metropolitan Railway Operation and Maintenance is established before 1 st urban railway line is put into operation	4. It is clearly stipulated that DOT plays main advisory function to HPC for State management of urban railway activities.	4. O&M Co is state enterprise. In the initial stage, it will function as operation and maintenance of urban railway infrastructure	
5	The State encourages domestic and foreign organizations and individuals to invest in, do business with, railway infrastructures and railway transport; to participate in bidding for provision of railway public-utility products and/or services.		At initial stage of developing UR system, the receiving and mastering technology of O&M is especially important. However, it is impossible to specify the standards (or benchmarks). HPC assigns HPC and functional bodies to provide advices and study in order to submit HPC for promulgation of economic-	DOT is advising body for HPC to promulgate economic-technical benchmarks, unit price, charge and price of UR service	At initial stage, The Company (State-owned) will operate, maintain and provide UR transport service under the method of paying as real expenses. Gradually, this orients such methods as Plan	

			technical standards/benchmark unit price, cost of UR services.		assignment, orders, and in long term, it is possible to utilize tendering.	
7	2. The Ministry of Transport shall be responsible to the Government for performance of the state management of railway activities.	Urban railway projects will be assigned to the provincial People's Committee for management, but the MOT is responsible for directing the subordinate units as the project employer, preparation of specifications of urban railway, development of legal documents for the management of safety, safety certificate for UR system and standard certification of urban railway operational positions, execution of inspection of urban railway activities.				
8	Responsibilities of provincial people committee (1) To organize, direct the implementation of legislation on railways; measures to protect railway infrastructures; protect the railway traffic safety corridors; organize rescues and settle consequences of railway traffic accidents upon the occurrence thereof in their respective localities.		(1) HPC is the state management unit for implementation of aggregation, mobilization, linking their resources (human, relevant departments) to clearly define the functions and tasks of the resource, create the actions with purpose, coordination, planning etc. to implement the law on railways. (Law on Railway, Documents of The Government, the MOT) in accordance with conditions, economic development strategies of the city.	(1) DOT is administrative units under the HPC's direction of HPC for urban railway operations. DOT, in cooperation with functional organizations, is authorized by HPC to help HPC manage urban railways in the city.	1) As Urban Railway Transport Enterprise, O&M Co. is under direct management of HPC, and other functional organizations by laws and Law on Enterprise.	(1) Departments related to state management activities of railway such Dept. of Public security, DOT, DOF, HAPI etc.

8	<p>Responsibilities of provincial people committee</p> <p>(2) To formulate and organize the implementation of their localities' planning on development of urban railway infrastructures.</p>		<p>(2) Development railway infrastructure planning must be compatible with transportation development plan and Capital planning of the Prime Minister, in accordance with the conditions and policies of socio-economic development of the city</p>	<p>(2) DOT is advisory unit , in coordination with functional organizations, to help HPC in planning infrastructure development of urban railway</p>		.
8	<p>Responsibilities of provincial people committee</p> <p>(3). To ensure railway communications and transport order and safety; to inspect and handle violations of railway legislation in their respective localities.</p>	<p>(3) MOT is responsible for issuing of UR system safety certificate, developing railway technical codes, legal documents for safety of urban railway; to perform inspection function for implementation of urban railway laws in local area where urban railway passes through.</p>	<p>(3) Railway system is stretching from north to south, passing through many provinces and cities, with more permanent factors impeding daily train operation safety at central level cannot be controlled completely. Therefore, local authorities, particularly HPC must also have the responsibility to ensure orderly, safe railway transportation, communication and assign public security organs subordinate Committee to handle violations in railway legislation to ensure local rail systems are operated safely and sustainably.</p> <p>For urban railway, in addition to directing the implementation of the legislation on urban railway safety, HPC directs the compliance with safety regulations for urban railways, developing and promulgating specific regulations on safety in operation and maintenance of UR in the city, on the basis of compliance and consensus from MOT.</p>	<p>(3) DOT takes initiative in giving advices, and be responsible in front of HPC for developing regulations about safety, system safety supervising for UR at locality</p>	<p>(3) O&M Co is an unit directly operating urban railway daily, with great frequency of train operation and short headway. Ensuring orderly urban railway safety is a top priority in the operation plan of O & M Co.</p>	<p>(3) People Committees, polices at all levels where urban railway runs through are responsible for coordination to ensure orderly, safe rail transport, dealing with accidents, incidents, disorderly incidents related to railway safety.</p>

9	1. The railway inspectors, under inspection department of MOT, perform the function of specialized inspection of railway activities.	MOT instructs inspectorate unit of MOT or inspectors of VNRA, VR in conducting inspection resources for urban railway, inspection of transportation business, urban railway structure units and other units or organizations relating to implementation of urban railway law in locality.	HPC instructs Hanoi Metro Co., organization and units relating to implementation of urban railway activities in accordance with standard, procedure, and code of the Government and MOT.	DOT plays functions of inspection and speeding up O&M Co. to properly implement laws on urban railways.	O&M Co. implements adequately in accordance with law on railway and comply with inspection of appropriate authorities.	
Article 11	Responsibilities of organizations, individuals upon railway accident occurrence: 4. People's Committees of the localities where the railway traffic accidents have occurred shall have the responsibility to coordinate with the police offices, railway enterprises in rescuing the victims and protecting the property of the State and the victims. In cases where victims die without identification, without relatives or with relatives who are, however, incapable of carrying out the burial, People's Committees of the localities where the railway traffic accidents have occurred shall have the responsibility to bury the	Serious accident shall be reported to MOT. MOT requests units under MOT in coordination with O&M Co., MRB, and other appropriate authorities to settle railway trouble and accident. If necessary, "Accident Analysis and Investigation council" shall be established including urban railway expert of MOT and other agencies to conduct urban railway accident investigation.	When a railway accident occurs, HPC will assign MRB to chair, in coordination with functional organizations, to rescue, restore the tracks back to original condition and investigate the causes of the accident. Minor accidents (e.g., no deaths, no major property damages) shall be aggregated and reported to HPC, serious accidents shall be reported to the Ministry of Transport.	For urban railway, DOT coordinates with other departments, people committees at levels and O & M Company to resolve accidents, implement accident reporting mechanism and investigate causes of the accident. - To advise the Committee to issue guidelines, assign responsibility for the accident rescue, and urban railway accident report in locality	When urban railway accident occurs, O & M employees and train driver rescue victims, keep the site untouched and immediately notify OCC. UR Company establishes Accident rescue committee, and simultaneously, reporting local people committee, police to settle accident. Propose specific methods for accident rescue. Provide the necessary information to conduct accident investigations, and draw lessons.	The local People Committee and police coordinate with O & M staff and other units solve railway traffic accidents, save lives and property, and conduct accident investigations.

	<p>dead persons.</p>					
<p>Article 15</p>	<p>Formulating, approving and publicizing planning on railway infrastructure development: 2. Provincial-level People's Committees shall organize the formulation of urban railway infrastructure development planning and submit them to the People's Councils of the same level for approval before submission thereof to the Minister of Transport for approval. 4. The Minister of Transport, provincial-level People's Committee Chairperson shall, within the ambit of their respective tasks and powers, have the responsibility to publicize the approved planning; organize the implanting of boundary markers for planned railway land.</p>		<p>(2) HPC directly manages urban railways locally. With fast economic growth on average 10% per year, rapid mechanic population growth, speed of urbanization, HPC is responsible for developing public transport systems in general and railway infrastructure in particular, contributing to sustainable urban development. The first task is prepare planning to develop urban railway infrastructure to fit with the general construction planning of the capital, integrate with the existing public transport system and in line with the future development orientation of the city.</p>			

<p>Article 17</p>	<p>Land reserved for railways: 3. People's Committees of all levels shall have the following responsibilities: a) To assume the prime responsibility for, and coordinate with investors in, ground clearance and resettlement of displaced people; b) To manage the land planned for railways.</p>		<p>a) Chair, coordinate with the employer in land acquisition and settlement for residents: HPC assigns and authorizes Land Acquisition Steering Committee of the city, district level people committee, ward level people committee to work with the employer to measure and enumerate land and property of local people and prepare compensation, support and resettlement plan for affected people . b) Based on Article 29 of Law on Land, provincial, city-under-state, district, ward, city-under-province people committees shall direct implementation of local planning and land use plan; direct inspection of implementation of planning and land use plan of the lower level locality. HPC directs people committee at all level to strictly prohibit all illegal manners to construct and invest in real estate in the land area planning for railway.</p>			<p>-HPC authorizes district people committee to establish land acquisition, compensation, support and resettlement council to prepare land acquisition, compensation, support, resettlement and occupation shifting plan for people. -Commune/ward people committees coordinate with the employer to popularize measuring and inventory plan, compensation, and support and resettlement policy.</p>
<p>Article 18.</p>	<p>Investment in construction of railway infrastructures 3. Investors in construction of national railway infrastructures, urban railway infrastructures shall enjoy the following preferences: a) To be allocated land without the collection of land use levies</p>		<p>Urban railway is an optimal transportation means contributing to reduction of local traffic congestion and accident, environmental protection, and convenience for people, creating sustainable modern and development for the city.</p>			

	<p>for land used for construction of rail routes; to rent with the most preferential terms land for construction of other railway infrastructure works;</p> <p>b) To be provided with full support in ground clearance fund for land used for construction of rail routes;</p> <p>c) To be entitled to exemption or reduction of import tax on supplies, technologies, technical equipment, which cannot be manufactured at home yet under the provisions of tax legislation;</p> <p>d) Other preferences as provided for by law.</p>		<p>Therefore, HPC shall create most favourable condition, mobilize sources to support the employer of urban railway infrastructure construction in order to put the work into operation as scheduled.</p>			
Article 35	<p>Railway traffic safety corridor: 4. The Minister of Transport shall specify the railway traffic safety corridors in crossroad, urban railway areas.</p>	<p>MOT shall issue specific regulations and standards for railway traffic safety corridor to ensure that urban railway works are not invaded; urban train operation safety within urban railway traffic safety corridor.</p>		<p>DOT coordinates with people committees of all level where urban railway passes through, O&M company to protect urban railway safety corridor as prescribed by law.</p>		
Article 36.	<p>Responsibilities to protect railway infrastructures 3. People's Committees at all levels in the localities where railways run through shall have the responsibility to organize the propagation for and educate in railway infrastructure protection among people; prevent, stop and handle in time acts of infringing upon railway infrastructures and railway communications and transport safety in their respective</p>		<p>HPC directs local authorities at all levels where urban railways run through to cooperate with Traffic Safety Committee, O & M Co. to organize measures to protect urban railway infrastructure such as propaganda and education for people not to encroach, throw obstacles in the urban railway safety clearance, check against encroachment, illegal usage of urban railway activity area like</p>	<p>DOT advises to help HPC build up rules and guidelines to protect urban railway infrastructures.</p>	<p>O&M Co. is responsible for execution and coordination with local authorities where urban railways run through to propagandize and educate people to protect railway infrastructure such as regulations and voice notice in the station and fence to protect urban railway right of way etc.</p>	

	localities.		viaducts, piers, stairs up to the station, signal telecommunication system etc.			
Article 38	<p>Conditions for circulation of railway traffic means</p> <p>Railway traffic means, when being circulated, must be adequately accompanied with registration certificates; valid registry certificates of quality, technical safety and environmental protection standards.</p>	<p>Stage management bodies like Vietnam Register (VR), VNRA cooperate with one another to appraise technical design, quality standards, technical safety and environmental protection etc. urban railway transport vehicle and issue certificates of licence and register for urban railway vehicles.</p> <p>MOT is organization to verify, evaluate and issue certificate of UR system safety, which also includes UR vehicles.</p>			<p>O&M Co. must obtain licence and register certification for urban railway vehicles by state management bodies before putting them into operation.</p>	
Article 44	<p>Railway traffic means suspended from participation in railway traffic</p> <p>1. Railway traffic means shall be suspended from participation in railway traffic in the following cases:</p> <p>a) The means registry certificate has expired;</p> <p>b) The means are detected as failing to meet the technical safety standards while operating.</p>	<p>Inspectorate of MOT and Vietnam Register shall conduct inspection of urban railway vehicles. If certificate of register is found invalid or urban railway vehicles is not technical safety standards ensured, urban railway vehicles shall be suspended till new certificate of register is obtained.</p>		<p>When certificate of register of urban railway vehicles is expiry, O&M Co. must prepare documents to ask for re-issuance of register certificate for vehicles.</p>		

<p>Article 55, sub-clause 02</p>	<p>Urban railway investment, construction, management and business shall be organized by provincial-level People's Committees.</p>		<p>HPC organizes and mobilizes its sources to prepare and develop urban railway infrastructure planning and call for donors to invest fund and technique in urban railway projects.</p> <ul style="list-style-type: none"> - Prepare condition for construction of the projects such as execution of land planning, land hand over, connection of urban technical infrastructure, issuance of construction licence etc. - Manage construction quality in accordance with Decree. 209/2004/ND-CP, Decree No. 12/2009/ND-CP. Carry out acceptance for construction works and urban railway facilities and equipment. - Assign tasks to MRB and concerned departments to organize management, operation of urban railway => Establishment of O&M Co. - Carry out management, operation and maintenance of urban railway lines such as approval of train operation schedule, fare and subsidies, issuance of regulations on urban railway infrastructure maintenance etc. 	<ul style="list-style-type: none"> - DOT advises HPC in studying, building up and developing, managing and operating Hanoi urban railway system. - Help HPC establish, organize, manage, operate urban railway lines including both state management unit and urban railway operation unit. - Perform functions of state management in operation and management of urban railway lines such as appraisal of business plan of the company, safety supervising plan, fare and subsidies alternatives, advice on prepare of urban railway infrastructure maintenance and safety plan of O&M Co. 	<p>To be unit directly under HPC to perform functions of management, operation and maintenance of urban railway.</p>	<p>Departments help HPC execute investment, construction, management and operation of urban railway such as HAPI, DOC, DOT, DOF, HAUPA, DOHA, DOJ, DONRE, etc.</p>
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<p>Article 56</p>	<p>Urban railway development policies 2. Provincial-level People's Committees shall propose undertakings on construction investment, incentive policies to attract resources for investment in construction and exploitation of urban railways.</p>		<p>HPC implements investment encourage and preference policies for early and effective construction and operation of urban railway to meet travel demand of the people and for the sustainable urban development: - Assist the employer in investment and construction of urban railway works (as explained in Article 18) - Policies to encourage people to use urban railways - Proper subsidy policy for urban operation companies.</p>	<p>DOT is the regulator of Hanoi urban railway to advise in policies to encourage use of urban railway, project program, urban railway development policy to submit the city for approval: -</p>	<p>O&M Co. as urban railway operation unit shall be annually subsidized with proper expenditure from HPC in order to ensure continuous, safe and sustainable operation to meet travel demand of the people.</p>	
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61	<p>1. Urban railway business enterprises shall have the responsibility to maintain urban railway infrastructures invested by the State through bidding or public-utility product and/or service orders placed by provincial-level People's Committees.</p> <p>2. Provincial-level People's Committees shall stipulate the management and maintenance of urban railway infrastructures by organizations or individuals investing in urban railway business according to the provisions of law.</p>		<p>1. Urban railway infrastructure shall be directly operated and maintained by O&M Co. Every year, O&M Co. proposes railway maintenance plan to HPC, HPC shall assign state management bodies to appraise and sign contract with O&M Co. in forms of assigning plan or order, tendering.</p>	<p>1. DOT is assigned and authorized by HPC to appraise and inspect maintenance plan of O&M Co, DOT will sign a contract with O&M thru bidding or ordering. During implementation of the contract, DOT will check and accept to pay in advance and settle payment for O&M Co.</p>	<p>O&M Co. proposes maintenance plan for urban railway infrastructure (For example, safety, expenditure, cost, maintenance staff, implementation method, effectiveness)</p>	<p>At the beginning stage, (State owned) company will conduct maintenance of urban railway structure (and provide urban railway transportation service) in accordance with method of payment based on real expenses. Gradually, plan assignment, order form will be applied. In the long run, bidding form will be possibly applied.</p>
Article 62	<p>The ticket prices of urban railway transportation shall be stipulated by provincial-level People's Committees. The urban railway transport freight subsidy shall be implemented under contracts between provincial-level People's Committees and urban railway transport enterprises.</p>		<p>HPC assigns functional departments/organizations for proposal, evaluation of fare level before HPC will approve. When O&M Company proposes any subsidy, MRB, in coordination with DOF, and other agencies, will chair the assessment and review, and then submit for HPC for approval. After being approved, the subsidy shall be executed by following contract via orders or plans. According to the roadmap, bidding method will be conducted.</p>	<p>DOT is assigned by HPC to evaluate, in corporation with functional organizations, to propose fare policy for urban railways. Regarding the subsidy, DOT cooperates with organization to evaluate, review business plan and subsidy alternatives, then submit HPC for approval</p>	<p>At initial timing, O&M Company provides UR services based on method of payment based on real expenses. According the schedule, the method of plan assignment, orders and bidding shall be conducted.</p>	<p>DOT, DOF coordinate with MRB during preparing proposal for fare level and subsidy.</p>

Article 62	Clause 3. The urban railway transport enterprises must ensure safe, regular and timely train operations.		HPC assigns DOT to advise, assist HPC to develop regulations and instructions for implementation by O&M Company, aiming at ensuring operation, maintenance of UR in safe, effective and quality manner, satisfying demand of the citizens.	DOT is chairing organization to evaluate, develop regulations: about safety in compliant with local context and regulations, operation plan, supervision, accident reporting, etc.	O&M Company shall develop safe operation plan, including organization of personnel, other resources, plans, procedures to guarantee the safety, taking over/certifying for safety under its own responsibility and following regulations of the government	
Article 74	Contents of railway communications and transport controlling	MOT will develop and issue technical standards for urban railways.	HPC assigns DOT to be responsible for advising, developing and issuing regulations about UR operation, in accordance with city's eco-social condition.	DOT advises and issues regulations on UR operation, asking for opinions from related Ministries, departments before promulgation, direct operation units for implementation	O&M Company control the operation of the transport via line OCCs and integrated OCC - Follow legal regulations on UR controlling	
Article 82:	<p>1. People's Committees at all levels shall, within the scope of their tasks and powers, have to organize the implementation of the provisions of Clause 2, Article 10 of this Law in order to raise the people's sense of maintaining railway traffic security, order and safety.</p> <p>2. People's Committees at all levels of the localities where railway stations are located and/or rail routes run through shall have the following responsibilities:</p> <p>a) To direct the local police forces in coordinating with the railway security forces to</p>		HPC has methods to monitor and instruct functional organizations, sub-ordinate PCs where UR lines go through, in promulgating, educating citizens in implementation of policies, regulations on urban railways: protect UR infrastructure, without intervening into operation limit of urban railways, guarantee the attitude while participating in urban railway transport system. When an accident happens, PCs at all level will coordinate with the police to support victims, participating in rescue activities. Isolate the accident site and	DOT provides advices, assists HPC in promulgation of regulations or implementation of regulations of higher authorities	O&M Company develops and implements specific programs, activities	

	<p>prevent and handle in time acts of encroaching upon railway infrastructures and/or railway traffic means and other acts of violating the legislation on railway communications and transport safety;</p> <p>b) To participate in settling railway traffic accidents under the provisions of Article 11 of this Law.</p>		<p>conduct inspection for accident's reasons</p>			
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Via the above table that analyse the responsibilities of HPC in UR activities based on Railway Law in 2005, proposed main responsibilities of HPC in governmental management of UR are as following:

- Organize, monitor the implementation of legal regulations on urban railways; prepare methods to protect infrastructures and urban rail transport safety corridor; organizing the rescue activities, dealing with consequences of urban rail transport in the city.
- Development plan, long term plan, 5 year plan, annual plan, development program of urban railway consistent with general socio-economic development master plan of the City, regional and sectorial plan.
- Ensure the order and safety of UR; inspect and handle with legal violations in UR in local area;
- Organize promulgation, education towards citizens about protection of UR infrastructure; organize activities to prevent, avoid and handle with any violations to railway infrastructure and safety of UR in the locality.
- Propose preferential policies to attract resources for operation and maintenance of UR.
- Regulations on responsibilities of individuals and organizations investing into UR business for management and maintenance of UR infrastructure.
- Regulations on fare level of UR.
- Subsidy for UR.
- Approve for operation plan of UR
- Organize the promulgation and education of legal regulations about urban railways for local residents.
- Regulations and management of maintenance of infrastructures and equipment of urban railway.

4.2. Clarification and details about related legal documents, institutions, policies, coordinating & supervising mechanism among governmental agencies in Hanoi

4.2.1. Related legal documents to clarify regulations and policies:

- Joint Circular No. 42/2015/TTLT-BGTVT-BNV dated 14 August 2015 of the Ministry of Transport and the Ministry of Home Affairs, providing guidelines for the functions, responsibilities, powers and organizational structure of the professional agencies in transport under the People's Committees of provinces or centrally cities and the People's Committees of districts, towns, or provincial cities.

Accordingly, DOT is clarified to be a specialized agency under HPC, with the function of advising and supporting HPC to manage urban railway.

- Decision No. 6266/QĐ-UBND dated 27/11/2015 of HPC on establishment of HMC, with the main function of operating public transport business through urban railway system in Hanoi.

4.2.2. The relationship among governmental agencies regarding institutions, policies and coordinating & supervising mechanism about urban railway:

4.2.2.1. Principle for management coordination:

In execution of governmental function regulated by law and guidance of HPC, governmental management agencies are in charge of governmental management activities within their responsibility, coordinating with related organizations and agencies to ensure consistency in urban railway management in the city.

Form of communication: coordinate through written documents or direct discussion between assigned divisions of governmental authorities.

4.2.2.2. Coordinating mechanism of governmental management agencies:

- Coordinate in informing and providing guidance to HMC, organizations and individuals related to urban railway system; conform to regulations on governmental management roles in urban railway in Hanoi.

- Coordinate in developing programs, implementing plans to examine and inspect law execution in the city; within agency's competence, strictly deal with law violating activities.

- Provide information related to urban railway activities in the city as requested by related state management agencies .

- Periodically every year, management agencies related to urban railway governmental management shall make preliminary summary, total summary and evaluation of coordination, management and supervision work, as well as draw experience and propose recommendation (if any)

4.2.2.3. Responsibilities of management agencies:

- HPC: integrate governmental management of urban railway in Hanoi, assign Hanoi DOT to preside and advise HPC in conducting management activities in the city; Regulate functions, assign responsibilities and authority to departments and agencies in managing and coordinating urban railway sector.

- DOT: specialized agency under HPC, conduct advisory role for HPC in managing urban railways.

- DOT:

+ Preside over and coordinate with related agencies to allocate funding to HMC.

+ Preside over and coordinate with departments, industries, railway companies to develop accounting and financial mechanism for operating model of the company.

+ Work as the focal point for HPC to supervise finance and evaluate business performance, consolidate financial report of HMC

CHAPTER 3. PROPOSAL FOR DESCRIPTION OF RESPONSIBILITIES AND ORGANIZATIONAL STRUCTURE OF HANOI URBAN RAILWAY REGULATOR - DOT

1. Specific description of responsibilities of UR regulator in of urban railway:

1.1. Quality management for urban railway transport service

1.1.1 Scope of application

Quality management of urban railway services mentions influential factors, measures to ensure, improve and allocate responsibilities in passenger service quality management of Hanoi urban railway system.

1.1.2 Applicable objects

Management of UR service quality is related to operation and participation in urban railway transportation.

1.1.3 Concept of urban railway service quality

In the current integration process, with the development of science and technology and economy – society, product quality in general and service quality are increasingly interested. It is possible to say that improving quality has always been the primary objective for every enterprise.

According to Vietnam Standard ISO 8402:1999 "Quality is a set of characteristics of an entity created for entities that meet the stated needs and latent needs". Or follow Vietnam Standard the ISO 9000:2000 "Quality is a set of characteristics of the product, system or process to meet the needs of customers and stakeholders."

Service quality of urban railway passenger transport is a set of service characteristics that can satisfy the travel demands of passengers from one place to other and the other demands (before, during and after traveling time) to serve the process of moving (time, space, convenience and safety etc.).

Urban railway service quality is provided and ensured by two main objects:

1. Hanoi Metro Company: directly determine quality objective and supply quality guaranteed services.
2. Hanoi City People Committee: accept and control quality objectives, provide common condition about service quality (regarding connectivity, subsidy, etc.)

1.1.4 Purpose of UR service quality management

Building up the system to manage standard, check and control service quality of urban railway to make sure service quality provided by the operator stable and increasingly improve to meet requirements of the passengers and in accordance with the general progress of the UR world.

The further objective is to enhance production of public passenger transport, limit, minimize personal vehicles, reduce pollution, save energy and contribute to building the modern, civilized and sustainable city of Hanoi.

1.1.5 Factors impacted on UR service quality

1.1.5.1 Quality of planning and implementation of urban transport planning:

Quality planning is shown in the factor of alignment length, station length, platform width, etc. If at the very beginning, planning quality is well studied with inter-connection among lines to meet current demand and orientation for expansion in the future, improvement of UR services will be easier and investment costs will be minimized.

In the current period, the planning and implementation of planning is the responsibility of the authorized state agency. In the future, UR Company may propose alternatives of planning and investment and operation implementation on accordance with laws.

1.1.5.2 Infrastructure:

Infrastructure is understood to be construction works along the lines, station facilities and tracks.

- Quality related to facility usage: Platform, access path, architectural space (mainly based on design stage).
- Quality of construction work, maintenance work: affect smooth operation of infrastructure items. For example: degraded construction works that are non-aesthetics, unsanitary, unsafe, causing performance not to be as designed.

1.1.5.3 Capability of connection among lines and with other public transport means:

This is an important factor in attracting and encouraging people to use public transport system. Integral and proper connection will increase convenience for passenger trip, help passengers shorten travel times and increase public transport system users in general and urban railways in particular.

1.1.5.4 Operation vehicle factor:

UR operation vehicles are electric rolling stocks:

- Service quality impact by vehicle performance: capacity, design speed, braking system, arrangement of seats and standing areas, width of car doors, etc. are mainly in the design and production stage of rolling stocks.
- Maintenance quality of operation vehicle: direct impact on the train operation plan of the company, the comfort of the passengers and safe train operation.

During transportation, vehicle quality will greatly affect service quality. This is the element that makes safety in operation, bringing physical and spiritual comfort passengers.

1.1.5.5 Other passenger services:

- Passenger information services
- AFC system (depending on fare policy of the city and efforts to improve the company)
- Socio-economic services in the stations and surroundings (commercial, medial, entertainment and administrative areas): depends on the planning and strategy of the city and also depends on strategy and effectiveness of non-fare business of the company.

1.1.5.6 Train operation and organization factors:

This is a key factor that makes passengers choose UR means. In the competition of the market economy, time accuracy is the target to compare between UR transportation means with personal vehicles and other public transport modes.

The quality of this work is to minimize unplanned and non-punctual trips, specifically emphasizing on the running time with the following criteria:

- + Time: arrival time, departure time, delay time, operating time interval
- + Space: congestion percentage in rush hours at platforms or in cars, train stopping, and car door opening and closing properly as regulated.

1.1.5.7 Human being factor:

- The leader must have a vision and general policies to ensure UR service quality.
 - + For the City authority, ministries: the leaders make policies and have long-term vision as appropriate appraisal of UR planning with connectivity; invests in large facility in harmony with UR system.
 - + For the Company: makes a long term plan, puts commitment of the vision leaders in guarantee of UR service quality.
- Direct operation workers: They are those who directly participate in train operation process, receiving and instructing passengers at the stations, including: train driver, station staff, and dispatch staff. Quality, efficiency, attitude, responsibilities to passengers are decisive factors to safety and service quality of urban railway transport.

1.1.6 Measures to guarantee and improve UR service quality**a) Infrastructure:****In the design and construction stage:**

- + It is necessary to clearly indicate or display line name and number, name of the station, operation times of UR, headway, and ticket price, information of transiting to other lines or other modes on the electronic information board.
- + Arrangement to serve the disables with wheelchairs: It is required to build a convenient entrance for wheelchairs and positions reserved only for the disable with wheelchairs waiting for train arrival.

- + Arrangement of leading paths for the blind from the streets down to the platform.
- + Arrangement of platform door types to ensure the safety of the passengers, not falling down the tracks.
 - + Invested and equipped with escalators, elevators in the stations.
 - + Each urban railway station must have separate number which will be shown in the map for management and information for passengers.

Operation stage: Maintenance work, maintenance of UR infrastructure must be focused to ensure that the infrastructure is in technical state of best quality and safety, and does not impacted on train operation.

b) Transportation vehicles:

- + Maintenance and repair of vehicles must be conducted in compliance with the maintenance rules and procedures, ensured daily technical safety conditions and passenger service equipment and facilities in best condition before operation. Concretely, air conditional system must operate stably suitable with passengers' demands. Lighting systems on board must ensure sufficient light when trains get in tunnel or during night time.
 - + Outside the car: it is required to paint typical colour for each line, number of train, name of the line for passengers to easily differentiate.
 - + Inside the cars: it is required to equip device to display line route map, broadcast speaker to inform the name of the next station, rules for passengers, telephone number, hot line number for complain or contribution about service quality.
 - + Advertisement (in and out of the car) must comply with law.

c) Train operation organization and control:

Time criterion:

- + Train operation control must comply properly with train diagram approved by the competent authorities. Making train diagram must be based on the actual number of passengers or forecasted one, surveys, operational period; transportation capacity of the line.
 - + Ensure safe operation without incidents, accidents; avoid disorder and change of train diagram. When station is very crowded, up and down time will be lengthened. Accordingly, in order to ensure the safety, trains will departure later than normal causing changes of train diagram and delay. Therefore, it is required to promptly notify passengers and remedy as soon as possible. (Based on experience and smooth coordination between train operation division)
 - + Train operation plan includes train diagram made and adjusted by the operator, reviewed and appraised by the regulator and submitted to HPC for approval.

Space criterion:

- + The ratio of congestion during rush hours: This is a condition in which the number of passengers exceeds the designed capacities of cars and platforms. To improve this situation, the regulator requests and instructs the operators to increase number of trains, reduce

headway, mobilize more platform staff to support passenger in or out of the train safely and orderly. In the long run, if the congestion condition has not been improved, it is required to expand platforms and car door.

- + The regulator must calculate congestion ration in rush hours to enable the operator to find proper countermeasure. In Japan, acceptable congestion ratio does not exceed 150%.

- + Train must arrive at right position and within allowable deviation. For example, in Japan allowable deviation is smaller than 01 m.

d) Human being factor:

- + The leader always puts the mission of improving transport service quality in the long-term mission and vision of the City, of the company, serving travel needs of the people

- + Build a team of well-trained with proper qualification and certificates in accordance with title recruitment. Annual training and testing is taken in order to improve qualifications, responsibilities and professional ethics.

- + Ensure the staff to be always in good physical and spiritual condition.

- + Build cultural behaviour of station employees passengers, responsible for providing guidance and answers to the information needs of passengers on the line information, fares, buying tickets, assisting the passengers on/off the train safely, especially the disable, the elderly, children, pregnant women, international tourists, etc.

e) Line connection:

- Among UR lines: in the planning and planning implementation stage, the state company must determine connectivity among UR lines with integration and connection among lines.

- Between UR and other public transport means: UR regulator and other transport means regulators such as bus, BRT need to study and coordinate for the purpose of facilitating and attracting passengers. Coordination is shown such as synchronization ticket collection; avoid using many kinds of tickets with different prices, possibility to change the line easily and conveniently.

1.1.7 Responsibilities of organization and individual related to UR service quality

1.1.7.1 Responsibility of the Central Agency:

The Government and Ministry of Transport builds up, promulgates regulations, common technical standards for the management and quality assurance of UR services

1.1.7.2 Responsibility of HPC:

- Organize activities, monitor UR service quality management in Hanoi
- HPC assigns the professional bodies to advise and assist the city in issuing regulations, evaluation and monitoring of UR service quality provided by the company and other related agencies.

1.1.7.3 Responsibility of DOT:

- To promulgate, instruct, implement normative documents, regulations, standards and technical standards for quality of urban railway transport services of the Government for urban railway operation companies managed by HPC.
- To participate in formulation of regulations on quality management of transport services by urban railways.
- To evaluate train operation schedule, urban railway service quality plan of the Company.
- To check and evaluate implementation process of train operation schedule, urban railway service quality plan of the Company.
- To periodically perform statistic works, report results of public transport by urban railways.
- To develop a database, conduct public consultation on results, needs and ability to improve the quality of transport services by urban railways.
- To propose programs and plans to improve urban railway transport services.

1.2: Proposal to advise on regulations and management of urban railway safety

Until now, Vietnam Railways only inspects and certifies safety and quality in each specialized field such as road, bridge, telecommunication, signal, rolling stocks but not executes evaluation and certification for the entire system. Since urban railway system is a closed large system including many small systems closely related and linked to one another, therefore, railway safety assessment by the old methods is not logic and low-reliable. In the near future, in Vietnam, many urban railway projects shall be put into operation and invested in construction such as metro, elevated urban railway, high-speed railway system, etc. In order to ensure the highest safety for these newly-built railway systems, it is necessary to evaluate and certify safety for the systems in accordance with certification method based on risk management (this method is applied by the advanced countries in the world).

The Railway Law, Decree No. 109/2006/ND-CP dated 22 June 2006 and other lawful documents have not mentioned assessment and certification of safety for urban railway, while regulations on assessment and certification of safety for urban railway is necessary and suitable with international practices.

However, urban railway is new and complicated field not yet completed and operated in Vietnam. It requires strictness of safety in design, construction and operation. On the other hand, human resources understand about urban railway systems as well as manages safety of the system is very limited, therefore, in the current period, safety management should be focused on in the specialized state management agency, MOT.

Division of responsibilities for state management of urban railway safety in this period is proposed as follows:

1.2.1 Responsibilities and rights of urban railway management of MOT:

As a state agency managing urban railway activities nationwide (based on Decree No. 107/2012/NĐ-CP dated 20 Dec. 2012 of the Government defining the functions, tasks, powers and organizational structure of MOT), MOT has responsibilities for state management of urban railway safety as follows:

- a) Develop, promulgate, and publicize under its authority regulations, legal documents on urban railway safety; involve in building up legal projects and relevant legal documents;
- b) Approve, promulgate technical standards, regulations on safety management for urban railway system;
- c) Perform state management over verification and certification on urban railway system safety; Participate in certification on system safety for urban railway lines; Issue and revoke certificate on urban railway system safety; Guide and check implementation of investment organization, and urban railway operation company;
- d) Organize to inspect, check, and monitor compliance with legal regulations, standards, technical codes on urban railway safety management for individuals and organizations under its authorization; Inspection and monitoring may be held regularly or irregularly;
- e) Recommend the local People's Committee where has urban railway passing through to refuse starting of new construction for urban railway system or suspend operation if any unsafe factor for railway system is found;
- f) Receive and summarize reports on traffic safety situation of urban railway from urban railway operation companies and other concern agencies; Participate in investigation and dealing with urban railway incidents and accidents if necessary;

1.2.2. Responsibilities, authorities in terms of state management over urban railway safety in Hanoi City:

Hanoi People's Committee is state-management organization for urban railway at the locality, which is responsible for organizing and directing the implementation, as well as allocating the functions to organizations to ensure urban railway safety.

Responsibilities of DOT

- Instruct, inspect implementation of methods for assurance of traffic safety under the department's functions

+ Promulgate, instruct and undertake the execution of laws, legal documents, regulations, technical standards and regulations about UR system safety which are issued by the Government towards urban railway O&M Company under HPC;

+ To chair to compose or coordinate with other sectors to compose new legal documents or supplement or amend documents relating to urban railway safety as regulations, in order to submit for consideration and promulgation by HPC for promulgation;

+ To check and implement measures to ensure urban railway transport safety under functions of DOT as prescribed by law

- To chair and coordinate with relevant agencies to deal with and investigate accidents, incidents regarding urban railway operation.
- To advise, submit HPC in promulgating regulations on protection of urban railway safety corridor; to propagandize and educate people to protect urban railway infrastructure; to prevent and timely deal with invasion of urban railway infrastructure and urban railway safety in the area.
- To appraise urban railway operation safety plan
- To check, evaluate implementation process of safety plan of urban railway operation company
- To participate in checking preparation of requirements for safety assurance (under responsibility of the HPC) before launching a new urban railway line or extended urban railway line;

1.3. Recommending incentive policies for using urban railways

1.3.1 Necessity of making urban railway incentive policy

To construct a public transport system in general and UR in particular, the State has to invest a huge amount from the budget, normally accounting for 1 -2% of GDP. Accordingly, if people are not encouraged to transfer from private modes to UR, this shall create a big waste for the society, and it also can be a public debt disaster of the city government. Therefore, Hanoi City has to build policies to encourage people to use UR and to attract a certain amount of passengers, creating a custom of using public transport system in which UR is one part, reducing traffic congestion, environmental pollution.

1.3.2 Necessary solutions to encourage use of public transport (Urban railway)

a) Development and attraction of financial resources for investment, construction and operation of public transport system (Urban railway)

- From the state budget, local budget.
- Grants from banks, international donors
- Charges levied on personal vehicles when using public transport works such as roads, bridges, tunnels, highways, etc. and these charges are partially added in the construction and operation of the public transport system.

- Taxes on employers (Taxation of transport):

Enterprises engage in investment for transport through taxation in general, but in some countries they have to contribute directly because regulators think that these enterprises indirectly get benefits from the transport system. This compulsory participation is performed mainly via tax on salary fund, which is paid directly to the transport sector, and support for staffs that use public transport.

The most commonly known example is to compulsorily collect taxes, which is a form of transport tax on state or private enterprises that have more than 9 employees in France. Taxes are set in accordance to the percentage on salary fund for employees. In the Paris area, the ceiling is 2.7%; in other parts of France, tax rate is 1.75% for the city having public transport projects with separate lanes, 1% for the city of more than 100,000 people; and 0.5% with the city under 100,000 people.

- Less commonly, tax is imposed on the value of real estate increased thanks to the introduction of railway system.

For example: in Dublin, Ireland all buildings constructed adjacent to railway line are taxed because the value of their real estate increases.

b) Solution group of urban transport orientation to public transport:

- To make plan and organize urban railway stations into a system of commercial services, industry, office etc. with development of high density population within a 20-minute walk distance, radius of from 0.4 to 0.8 km.
- Services for accessing to stations with vehicles arriving at and departing from the streets:
 - + Design of bus service area, bus stops, waiting area for passengers
 - + Provision of parking lots for two wheelers (motorcycles, bikes)
 - + Provision of parking places for motor-taxi and taxi adjacent to near the station location
 - + Provision of locations for vehicles receiving and releasing passengers, near to the station entrance without obstructing traffic
- Services for pedestrians accessing to station:
 - + Provision of open spaces for pedestrians, removal of the obstacles on the sidewalks impeding pedestrians
 - + Improvement and upgrade of pavements, curbs, allay surface approaching station for pedestrians; Installation of appropriate navigational strip to guide the disable to access to the station.
 - + Provision and assurance of and ensure adequate lighting, trees, drainage, markings, signboard, etc. to help people walk better access to station area
 - + Additional provision with system of overpasses, underpasses for passengers, where traffic density of vehicles is high.
- To design places for passengers able to transit between urban railway and other public transport means. Transitional services such as bridges, underpasses, shelters, paths, shelters, commercial area should be properly arranged for passengers' convenience

c) Integration and improvement of public transport service (UR)

- Urban railway lines and bus routes are extended, space is expanding, increasing the frequency of services, day-time operation duration meets demand for public passenger transport. Priority is given for passenger vehicles with large coefficient of road occupancy, such as dedicated lanes for buses, traffic signal priority for buses, minimizing delays for public passenger transport vehicles.
 - Innovation is made to ensure convenience of service facilities for passengers at railway stations, bus shelters, seats, toilet etc.
 - System integration and fare price of public transport should have a consistent policy for integrating ticketing system and public transport means, creating a form of convenient fare payment s by smart electronic card.
 - Integration of passenger information, improvement of marketing program is to give passengers information, options for route, fare price of public transport service.
 - Improvement is made for those who use cycles:
 - + To construction parking lot, lanes dedicated to bicycle users

- + To provide map, sign board for bicycle user
- + To provide services of bicycles for rent

Some cities in the world are successful with their assistance for people who use bicycles daily for travelling, accordingly promoting usage of public transport modes. For example, Cambridge, London (England), Copenhagen (Denmark), Osaka (Japan)

d) Control and management of private vehicles ownership:

Measures of taxes and fees used by the governmental management agencies as an effective economic instrument for controlling and managing the ownership and use of private vehicles. In addition, this economic instrument also brings a part of income to support the development of public transport system.

- Import duties on vehicles: Many countries impose tariffs or import duty for cars from overseas in order to prioritize policies for domestic use of goods. Vehicle sales tax is generally applicable to all types of vehicles. In some cases, a lower tax is imposed on vehicles which consumes fuel efficiently in order to encourage rotation of vehicles, or to replace vehicles using fuels caused pollution to meet the objective of ensuring environmental quality.

- Road tolls: In the developing countries, the automobile owners often must pay annual or semi-annual fees for contributions to income source allocated to road and bridge maintenance. The level of this fee may be based on engine size, to encourage vehicles to use fuel efficiently.

- For example, in the US, registration fees range from \$30 to \$ 150 per year, and with a piece of adhesive stickers on license plates. Road tolls in Singapore are classified according to engine size, fuel type, and vehicles (cars, motorcycles, etc.) to encourage people to use the means with fewer emissions. Under this system, the owners of a small car with 1000cc engine may pay \$600 annually, whereas, the owners of 4000cc engine car pay more than \$6,000. Payment for Diesel vehicles is 6 times higher than that of similar vehicles using gasoline.

- Fuel tax: more or less depends on the conditions of each nation. In some developed countries this tax brings a big income source to re-invest in public transportation system (urban railway). For example, in the State of California allocates 70% of fuel tax revenue, including transport sector and public transport.

- Ecological taxes (environment protection tax): It means that the tax is imposed on destruction of personal vehicles and solutions of consequences due to pollution.

- Fees for entering the city in rush hours (urban transport fees): urban traffic fees is aimed at minimizing the number of vehicles moving in a metropolitan area through requesting people (owned personal vehicles) to pay fee for entering certain areas. The important thing is that it discourages private mode users to enter the city at a certain place in a certain time and to consider using alternative means of public transport. Example: Some cities in the world which collect this charge are Singapore, London etc.

- Management of parking inherent public transport policy:

The competent authority may consider parking in urban centers as a tool as a lever to control traffic. However, in order to achieve effectiveness, this measure should be implemented in coordination with other transport policies. Parking fees is not just a way of asking traffic participants to pay for the use of urban lanes but also is a source of revenue and as a tool to encourage motorists to switch to public transport modes such as urban railway, bus.

Transport policies must balance between one side is the desire to provide space to meet the needs of the driver and the other side is the need to control the space occupation and minimize its negative consequences.

Limiting the number of parking yards and adjusting this number according to many different criteria is one of the measures to control demands of personal transport in the city center.

To achieve this target, it is necessary to satisfy the following elements:

- + Provision of alternative or combined transport modes, such as parking lots for transition in the area surrounding the center.

- + Keeping a minimum parking lot to ensure activities in the city center.

Similar to collections of urban transport fees, provision of parking yard services and collections of parking fees is a measure to encourage people to shift to use public transport. This measure also brings remarkable revenue which is partially invested in public transport.

Successful example is Sanfrancisco city (American), Monterpilier (France)

- In addition, solution to ban and force private mode users should be considered to apply such as parking limit, ban on circulation on some streets and certain areas or during rush hours, limiting car to enter under license plates in the city (for example, China, Mexico, the Philippines ..)

e) Encouragement and financial assistance for public transport users (UR):

To provide appropriate fare policy (fare type, fare structure, fare level), subsidy for passengers using public transport, especially students, workers, staff, the disable, pensioners etc.

- To indirectly support for public transport by funding through users rather than services. Enterprises, public administrative agencies shall assist their staff amount of money to buy monthly pass of public transport, or business owners will buy transport fee at operation agency and hand over the transport card to their employees.

In Brazil, when Vale Transporte card was launched, employers support their employees. Accordingly, enterprises will pay for public transport fee for their employees up to 6% of the salary. The business owner purchase public transport fees at the transport agencies and handover employees the transport cards. This is a legal obligation for enterprises, taking validity for the entire urban center. This is also a tool of social equality because priority is only given to the poorest workers.

In France, from 1980s to the present, the payment of monthly traffic fee from employers to employees is applied nationwide regardless of their ranks and salaries. A current payment level (2009) is 50% of the monthly ticket. The payment is done at the end of the month after workers return monthly ticket.

f) *Propaganda and raising awareness of people towards usage of public transport (urban railway):*

Public transport service also faces challenges like any other products in the market. It is the more people know the more people access. Advertisement of new transport service

(Urban railway) is a key sector for development of urban transport. Information about route, fares, service quality and benefits of energy savings, environmental protection, prevent of traffic congestion and accidents, etc. can be easily available for new users through various channels such as its website, maps, sign boards, kiosks, telephone hotlines, mass media and billboards.

These public events and advertising campaigns can help raise awareness of people about the efforts to manage travel demand and at the same time to win their likings. These events can help the city distribute a map and other information, providing advices on cycling, walking and using public transport, and getting feedback from people about the offered plans.

1.3.3 Proposal for responsibilities of regulator – Department of Transport in encouraging people to use urban railways in Hanoi City:

In the initial stage, currently, the urban railway network has not been completed yet, just only one or two line to be put into operation, therefore, it is not easy and convenient for people access to the network and use the urban railway. With the measures mentioned above, there are many things that are not able to immediately apply in Vietnam. Indeed, Vietnam is still poor, scientific and technical capacity is still under slow development, therefore, social security assurance remains difficult. Application of multiple taxes on people using private transport modes, on residential systems, real estate for the time being is very difficult, complicated and must be carefully considered with a gradual roadmap when public transport system is underdeveloped, especially mass transport modes such as urban railway. That invisibly forces the residents in transport, which can cause instability in the society

Responsibilities of urban railway regulator – DOT in encouraging people to use urban railway in Hanoi City:

- *To coordinate with relevant agencies to advise the HPC in policies to raise funds for construction and operation of the urban railway system.*
- *To coordinate with relevant agencies to advise the HPC in solutions for urban design in accordance with orientation towards public transport, enhancing accessibility of passengers to urban stations.*
- *To propose integration solutions to improve the quality of public transport services, especially the quality of urban railway services.*
- *To participate in programs and projects on reducing traffic volume of personal transport modes and switching modes of transport for private vehicles to public transport system;*
- *To propose measures to encourage and support financially passengers using urban railway system*
- *To propose solutions for propaganda and raising awareness of citizens regarding use of public transport.*

1.4. Development and proposal for urban railway fare policy:

Fare policy is relatively important, since it is a basis for coordination among urban railway lines, public transport modes, ensuring the supply and improvement of urban railway quality under reasonable price level, encouraging citizens to use urban railways, creating a corridor attracting investors while participating in development of urban railway system in Hanoi City.

Fare policy is to orient decision making for setting up and changing fare structure and level. Fare policy is formed by objectives and guidelines. Goals of fare policy show the general objectives of the city which the fare structure can satisfy.

1.4.1: Fare policy applicable to Hanoi urban railway system is studied to meet the following objectives:

- To ensure a number of passengers using urban railway system: this is main priority objective of investment in urban railway lines;
- To strengthen people's awareness of urban railway transportation; to build up advance transport culture; to increase competitiveness of urban railway system with private transportation modes.
- To contribute significantly main income for operation of urban railway system; to build the basis to call for new investment in urban railway line and to engage in operation of urban railway systems.
- To contribute to narrow the income gap in the society; to create opportunities for the poor, war invalid and the disable.

1.4.2: Main contents of fare policy applicable to urban railway which are studied in other reports of TA Project are as follows:

a) Based on the goals of the fare policy report, the regulator will determine the criteria to decide strategies of fare: initial fare, fare structure, and fare types:

- Fare structure: The fare structure should be established diversification to meet passenger demand, to encourage passengers to regularly use public transport, and to support low-income people, the disabled, and policy favoured subjects.

Fare structure is catergorized in the following groups: Flat fare, distance-based fare, zonal fare, time-based fare. Distance-based fare should be preferentially chosen as it maximally ensure social equality (in order for fare equality, fare should be depended on type of service. It means passengers should pay more for longer trips) and maximize fare revenue (normally fare revenue is understood to be reach maximum under this structure as passengers traveling long distances often have psychological willing to pay more)

- Type of fare shoule be diversified, morden, convenient and integrated many functions to attract users and promote the dynamic of the economy. Type of fare includes::

- + Single Journey Ticket
- + Stored Value Ticket 100,000、 200,000、 500,000

- + 1 Day Ticket, 3 Days Ticket, Monthly Ticket
- + Fare for public transport network (Hanoi Pass)
- + Group Ticket
- + Single Journey Concession Ticket (Child, Elder, Student, Military, Disabled, etc.)
- + Concession Pass (Child, Senior, Student, Military, Disabled, Motorist, etc.)

- Propose for initial fare: The regulator should calculate to proposals fare level based on total cost (i.e. cost and revenue structure to ensure the operation and maintenance of the Company), based on the willingness of passengers to pay (WTP), and based on ticket price comparison among other modes.

b) Transfer pricing and discount:

Study on transfer pricing and discount among urban railway lines of urban railway company, among urban railway and BRT system, between urban railway and bus (with and without IC).

c) Fare regulation:

Fare regulation is necessary to enable and support conveniently and feasibly implementation of set fare policy goals, fare structure and fare system.

Moreover, the railway operators often require subsidies (recovery ratio is about 40% in Europe and less than 20% in the US), therefore, regulation on fare is necessary because of the following reasons:

- Hanoi urban railway will gradually invested and completed, including the connection with the other transport modes while standard of living and inflation in Hanoi will be improved/changed significantly. Therefore, the incremental costs or fare review and fare adjustment should be applied.

- The policy on fare review to be accepted is a key for the operation and maintenance company for preparation of long-term plan, including human resource plan, service quality, maintenance, and reform etc., ensuring a comprehensive plan for operation and service improvements of urban railway.

- Transparency of the fare adjustment will be one of many important factors that are considered by non-state parties in investment in urban railway as well as operation of urban railway which often need to consider and participate in the long term.

Fare regulation includes one of the following methods:

- Price cap regulation: In this regulation, the regulator will apply a price limit, or a cap, and the operator have the full right to change prices at or below this ceiling. Probably, many services is applied with price cap, and also have impact of the average level of prices on the price cap.

- Rate of Return Regulation: The principle is to control prices to let the operators do as regulations that will be able to earn a rate of return based on invested fund.

- Regulations on fare adjustment: to learn appropriate practice of several Asian countries, fare adjustment formula is proposed as follows:

$$\underline{(\text{Rate of Fare Adjustment}) = \alpha (\Delta \text{CPI}) + \beta (\Delta \text{WI})}$$

Where,

ΔCPI : change in Consumer Price Index over the preceding year

ΔWI : change in Wage Index defined as national (or transport sector) average monthly earnings

$\alpha + \beta = 1$ (α is share of non-personnel cost over O&M cost, β is share of personnel cost over O&M cost of the corresponding year. These figures must be figured out from the result of operational benchmarking during the period from 2016 to 2021.)

Alternatively, utility (i.e. energy) cost may be separately assessed with the following formula.

$$\underline{(\text{Rate of Fare Adjustment}) = \alpha(\Delta \text{CPI}) + \beta(\Delta \text{WI}) + \gamma(\Delta \text{EPI})}$$

where,

ΔEPI : change in Energy Price Index (i.e. electricity cost) over the preceding year

$\alpha + \beta + \gamma = 1$ (α is share of non-personnel non-energy cost over O&M cost, β is share of personnel cost over O&M cost, and γ is share of energy cost of the corresponding year. These figures must be figured out from the result of operational benchmarking during the period from 2016 to 2021.)

d) Subsidy system of urban railway transport:

Fare policy applicable to Hanoi urban railway system must meet the public transport development objectives of Hanoi and match the standard of living of the majority of citizens and socio-economic conditions of the City. However, in order to implement fare policy to achieve the goal to guarantee the numbers of passengers using urban railway with the objective of ensuring financial significant revenue balance for operation of urban railway system is very difficult. The majority of city residents still have low living standards and affordability. If fare price is low, suitable with affordability of people, it is certainly not enough to offset operation cost of urban railway system. But if fare price is high, able to offset operation operating costs of the urban railway operator, the majority of people will not use the service. Thus, standing in the middle of this matter, transport subsidy of Hanoi city is necessary.

Decree No. 130/2013/ND-CP dated 10/16/2013 of the Government providing regulations on production and supply of public utility services as a legal basis for Hanoi City to regulate and develop subsidy scheme for urban railway transport services. Subsidy level for urban railway transport services is the difference between fare price prescribed by the Government and reasonable cost of urban railway operation company for supplying public services. The importance is HPC with advices of the relevant authorities to identify the subsidy system corresponding to each supplying mode of urban railway services in

accordance with each development stage of the urban railway company. In the first stage of operation of the urban railway company, it is not yet not identified the economic-technical benchmarking, urban railway transportation cost benchmark subsidized in the form of reimbursement; the coming periods, plan assignment or order is applied when economic-technical benchmarking and cost benchmark and number of urban railway passengers are relatively clear and accurate.

1.4.3. Responsibilities of regulator – Dot in development and proposal for fare policy for urban railway in Hanoi:

- To advise, propose and coordinate with the concerned departments to draft regulations on fare policy (fare structures, fare types, fare level, fare adjustment, and subsidy system) applicable to Hanoi urban railway network.
- To advise in development of mechanisms and policies, technical-economic indicators, unit prices of urban railway transport sector.
- DOT coordinates with departments of HPC to determine subsidy amount and to support for additional, renewed assets in accordance with requests in later stages because the value this is too big and is a burden for urban railway company.

1.5 Advice on regulations on maintenance of urban railway infrastructure and equipment:

Proposal for responsibilities of DOT in advising regulations on management of urban railway infrastructure and equipment:

- To participate in formulation of regulations on management of maintenance and upgrading of urban railway infrastructure systems and equipment.
- To perform management functions of monitoring technique and quality of urban railway works.
- To evaluate maintenance programs and plans proposed by urban railway company.
- To inspect, evaluate and report implementation process of maintenance programs and plans of urban railway company; to request requirement or suspension of operation of urban railway company.
- To regularly or irregularly hold or request the operator to perform verification and revaluation of longevity and quality of infrastructure and equipment.
- To comment on programs, plans to improve the quality of maintenance proposed by operators.
- To propose programs and policies to encourage improvement of quality and effectiveness of maintenance of urban railway infrastructure and equipment.
- To perform periodical report on performance results of maintenance plans of urban railway infrastructure and equipment to HPC.

1.6. To provide advices and proposal to submit HPC for issuance of documents on allocation, decentralization of governmental management of urban railway sector.

1.7. To advise, submit HPC regarding development plan, long term plan, 5 year plan, annual plan and development program of urban railway consistent with socio-economic development master plan of the city, region plan and industrial plan.

1.8. To inspect, check and handle violation of laws on transport, transport safety in the city area as prescribed;

1.9. To propagandize and educate laws related to urban railways.

1.10. To perform international cooperation in urban railway in accordance with provisions of law and allocation or authorization of HPC

2. Proposal for organizational structure of urban railway regulator – DOT

2.1 Existing organizational structure of DOT

In accordance with Decision No. 17/2008/QĐ-UBND of HPC, organizational structure of DOT includes Director, Vice Director, officials, staff and employees working in specialized or equivalent department:

- The Director of the Department is the head of the department, taking responsibilities before the Chairman of HPC and before law for all activities of the Department.

- Vice Director of the Department is a person who assists the Director of the Department, taking responsibilities before the Director and before law for his/her assigned tasks; When the Director is absent, a Vice Director of the Department is mandated to execute operations of the Department.

Appointment of the Director and Vice Directors of DOT is decided by the Chairman of HPC based on profession and qualification standards issued by the Ministry of Transport in accordance with governmental regulations on staff management.

- Specialized departments and equivalents:

+ Office;

+ Inspection of Department;

+ Human Resource Department;

+ Appraisal Department;

+ Planning and Investment Department;

+ Urban Traffic Management Department;

+ Suburban Traffic Management Department;

+ Transportation Management Department;

- + Traffic Vehicle Management;
- + Quality Verification and Technical Management Department;
- + Economic Management Department;
- + Office of Traffic Safety Board;

The functions, responsibilities and rights of the Office and of departments of the department and responsibilities of the leading person shall be decided by the Director of DOT in accordance with law:

- Administrative organizations:
 - + Scientific Research and Training Centre;
 - + Training Centre of transport profession;
 - + Urban transport management and operation Centre;
 - + Hanoi Center for Examination for issuance of driving licenses;
 - + Urban Transport Project Management Board;
 - + Hanoi Urban Transport Development Investment Project Management Unit;
 - + Transport Project Management Unit 1;
 - + Transport Project Management Unit 2;
 - + Hanoi Road Motor Vehicles Registry Centre;
 - + Hanoi Bus Station Management Centre.

Administrative organizations directly under DOT that were established by HPC have legal status, seal and separate accounts for transactions and activities in accordance with law.

- Staffing

Staffing of DOT is assigned by HPC annually. The Director of DOT shall base on the assigned staffing number to arrange cadres, public officials and civil servants and contract employees of the Department in accordance with current regulations of the Government and City.

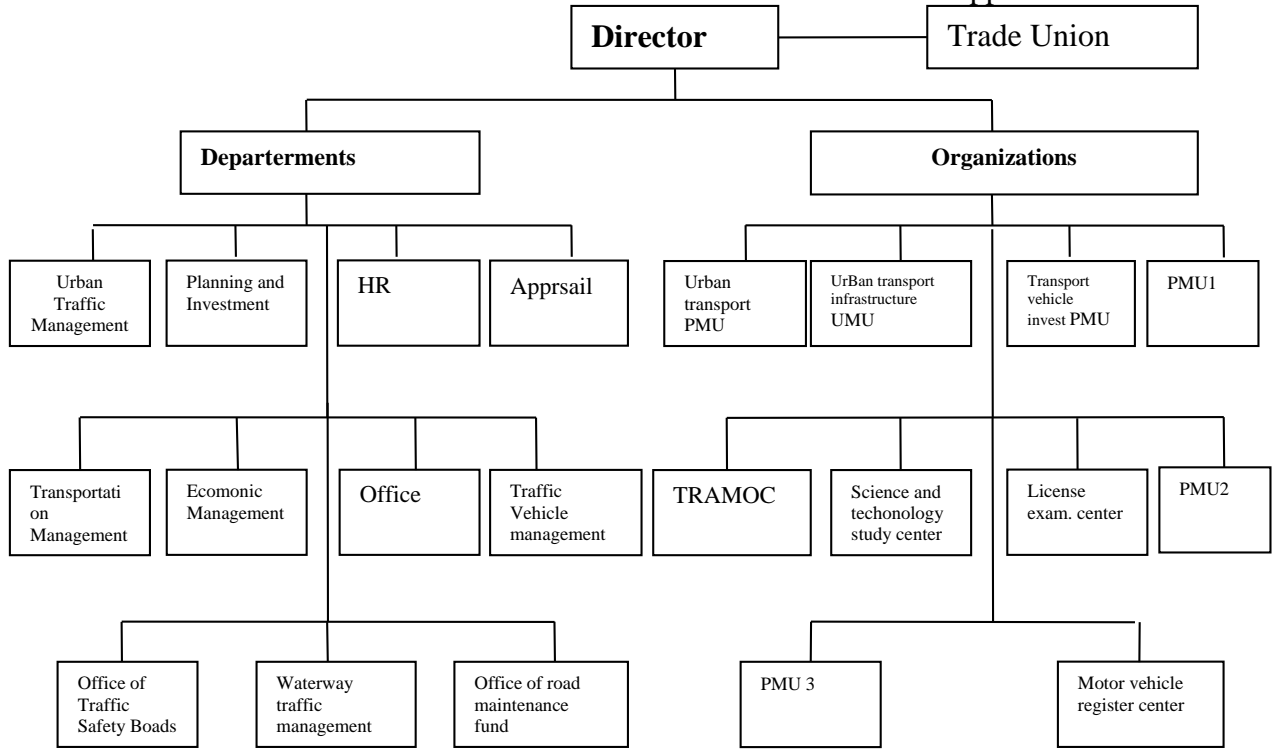
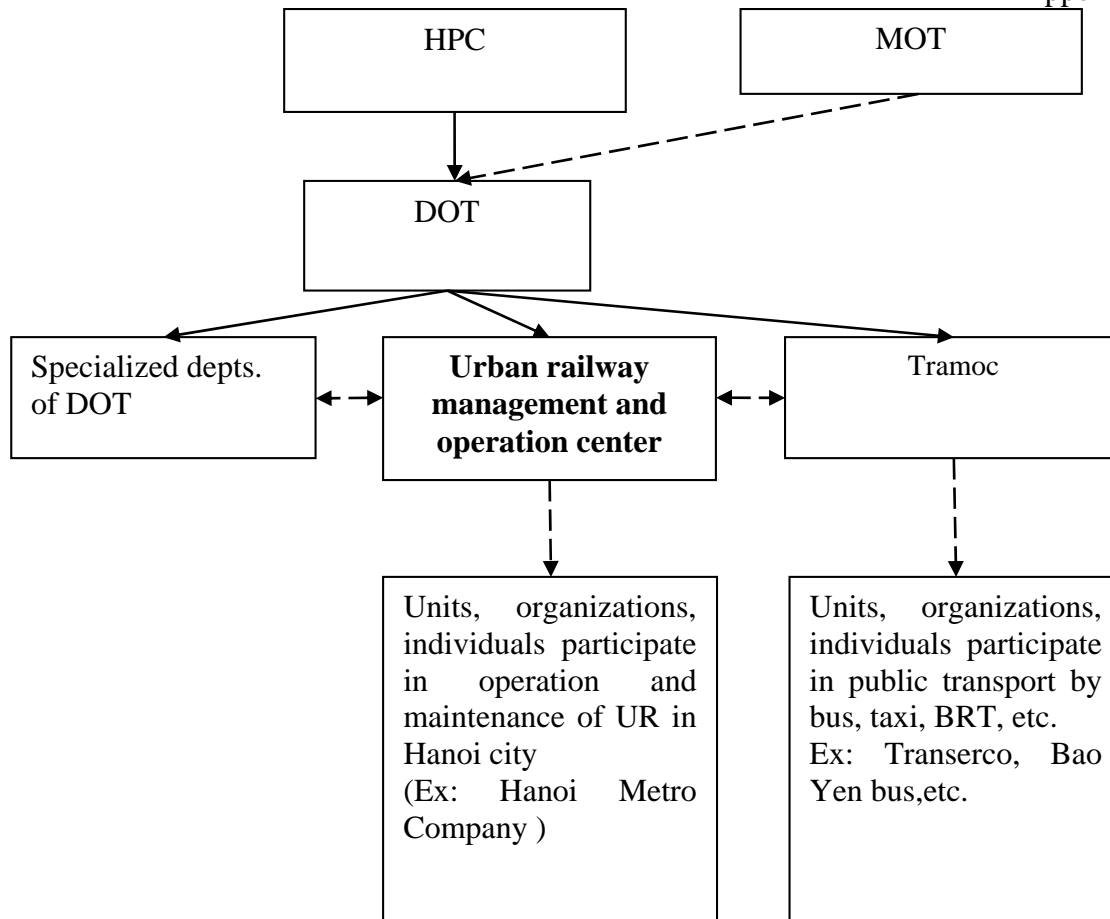


Figure: Existing organizational structure of DOT

2.2 Proposal for organizational structure of urban railway regulator – DOT

2.2.1.Stage 1: (Current stage)

2.2.1.1. Establishment of UR Regulator under DOT (Option 1):



With this option, it is proposed to establish an UR Regulator under DOT. The investment construction, management and operation of the UR system is very complicated and without antecedent with Hanoi. Currently, in addition, TRAMOC is performs management for public transport network primarily by bus, it is necessary to establish a management agency for UR.

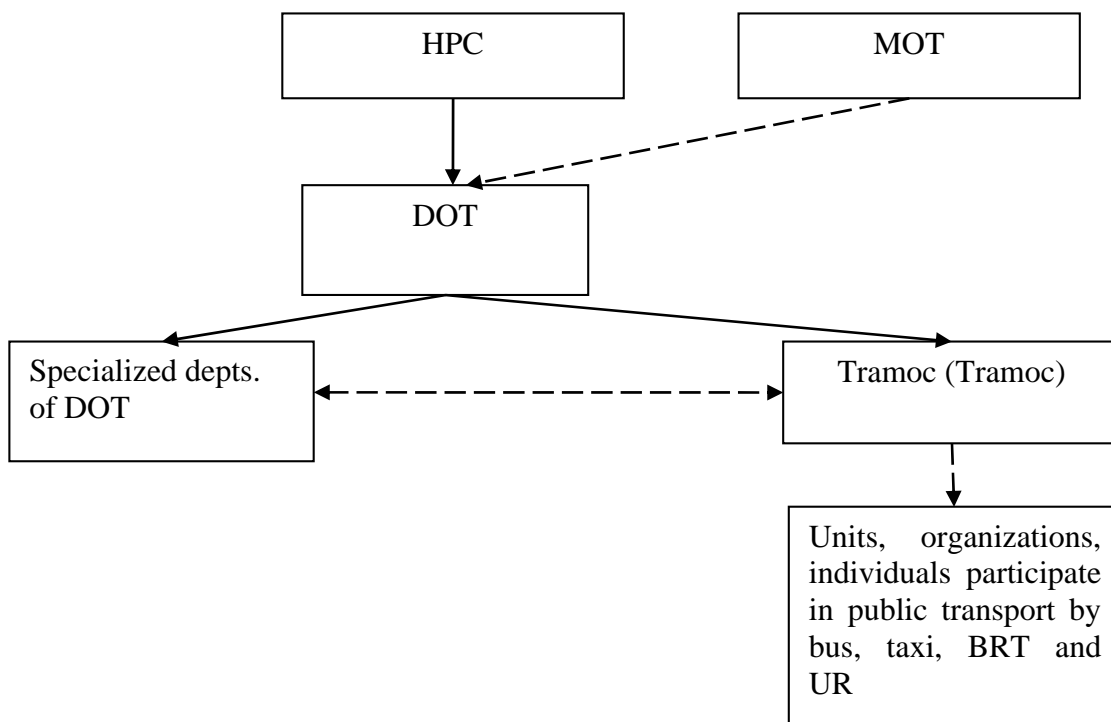
- Position: the agency under DOT, equal level to departments of the Department
- Function: Governmental management of UR
- Relationship among agencies:
 - + To assist DOT's Director to advised HPC policoes, programs, regulation reargding UR governmetal management
 - + For HMC: To guide, disseminate, and check implementation of legal regulation on urban railway; To check and supervise activities related to UR operation and maintenance, etc of HMC
- Financial activity: State budget
- Advantages of the plan: forming an independent UR regulator in this period is significant, meeting the management scale of the special sector of mass and complicate transport as UR. This option is to help decisions and advisory role of UR regulator be quick, timely, simplifying the coordinating relations between the regulator with relevant agencies and UR companies.

As functions and responsibilities are clearly, specifically defined, it is a hub agency of UR system in the City. Specialized DOT's departments will assist and guide the UR regulator regarding governmental management.

- Disadvantage of this option is to build a completely new organization with the organizational structure and appointment of officials, employees, personnel, budget, policies and mechanisms, and other resources etc. of the Government, with roadmap and requirement of relevant agencies's decisions, etc. for implementation.

In order to coordinate activities between UR Regulator and Tramoc, this stage requires strong instruction policies of HPC (among related departments) to handle issues when connecting and interoperating among bus transport, UR, and BRT, etc. such as fare policy for public transport system, common fare system, integration of inter-modal service, incentive policy for use of public transport etc.

2.3.1.2. Model 2: Tramoc under DOT is UR Regulator in Hanoi City: (Option 2):



Assessment of option application:

- This option, Tramoc, the unit under DOT having obvious functions and responsibilities, is the hub in governmental management of public transport in the city (Bus, BRT, UR), the specialized departments of DOT play role to assist Tramoc in performing governmental management of UR.
- Advantage: taking advantage of the existing resources and facilities of Tramoc. Ngoài ra, TRAMOC đã trải qua một quá trình phát triển, hoàn thiện thể chế, nâng cao, tăng cường năng lực quản lý vận tải hành khách công cộng tại Hà Nội.
- Disadvantages: Tramoc has been mainly playing the role of managing public transport by bus, therefore, experience in management and knowledge of UR is very limited. That UR governmental management is added to Tramoc is beyond its capacity to meet

the requirements of the assignment, which may cause difficulty for connection and coordination among transport modes

2.3.1.3. Model 3: MRB participates in UR management in Hanoi city - Option 3

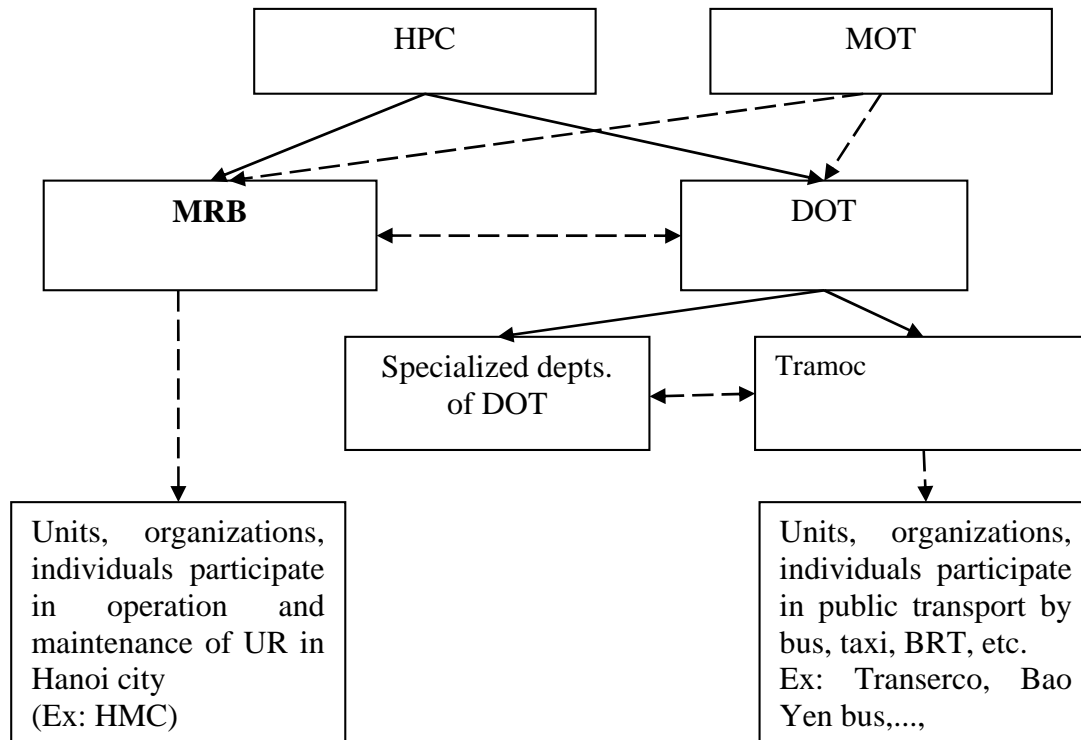


Figure: MRB participates in UR management in Hanoi city

Assessment of option:

MRB was established in accordance with Decision 925/QĐ-UBND dated 22 Feb. 2012 of HPC, as a public service unit under the HPC, whose function is to advise the HPC, is the project owner of UR construction projects and orients management of operation and maintenance of UR in Hanoi City.

- **Advantages** of this option is MRB is the agency that manages UR in Hanoi City:
 - + MRB is initially the agency having a lot of experience in early accessing to scientific and technological knowledge and profession about UR.
 - + MRB is under HPC, therefore, decision, advice and report to the higher level are made promptly and timely.
- **Disadvantages** of this option:
 - + In the process of performing the function of Hanoi UR project owners, typically, the pilot UR project, Line 3: Nhon - Hanoi Station, Line No. 2 South Thang Long - Tran Hung Dao, MRB faces many difficulties in project management, difficulties in land acquisition, etc. with huge workload, therefore, it has not meet the schedule of completion of construction projects yet. As a result, that function of governmental management for UR in Hanoi is assigned to MRB is considered relatively heavy and difficult to meet the general requirements of UR governmental management, quality and safety as well as other targets of HPC.

+ Moreover, Decree No. 24/2014/ND-CP of the Prime Minister; Joint Circular No. 42/2015/TTLT-BGTVT-BNV of MOT and MOHA guiding functions, responsibilities, powers and organizational structures of specialized agencies transport of the people committees of provinces, cities directly under the central government, the DSDT responsibility of provincial Department of Transportation, central cities already specified clearly that the functions of governmental management is under responsibility of department of transport of province and city directly under the central government.

Therefore, within the study area of this Report, it is recommended that MRB should not undertake responsibilities of UR governmental management.

Conclusion: Among 3 options mentioned and analyzed above, the Report recommends to select the option 1, with establishment of a new center (department): Urban railway management and operation center under DOT.

2.3.2. Stage 2: (from 2022 onwards): a common public transport management model – Public Transport Authority (PTA):

2.3.2.1. Proposal for public transport regulator model -PTA:

Tramoc (under DOT) and UR Regulator under DOT are suitable, effective model, have a positive effect in the governmental management, planning, and regulating public transport sector, especially with buses and UR. However, the public transport system that is gradually improved with operation of many UR Lines, BRT with mass volume and modern, sophisticated technologies of operation, etc. models of Tramoc and UR Regulator separately will be no long suitable, capable to perform governmental management functions of public transport in Hanoi, the capital region period 2020, the development orientation towards 2030

In addition, the program “strengthen the institutional capacity for Tramoc and create PTA” is within the framework of Hanoi Urban Transport Development Project – HUTDP funded by World Bank to assist HPC, which is under implementation, with direct connection to the future transport of Hanoi City. This program has been conducted since July 2012, with following overall targets:

- To assist Tramoc to establish and operate BRT in the first year;
- To create an independent agency under HPC, which will be financial safety and strong human resource with sufficient skills on control and management of all works including preparation of plan and operation of public transport in Hanoi city.

Accordingly, the study proposes model of PTA in the period of 2022 and afterward as follow:

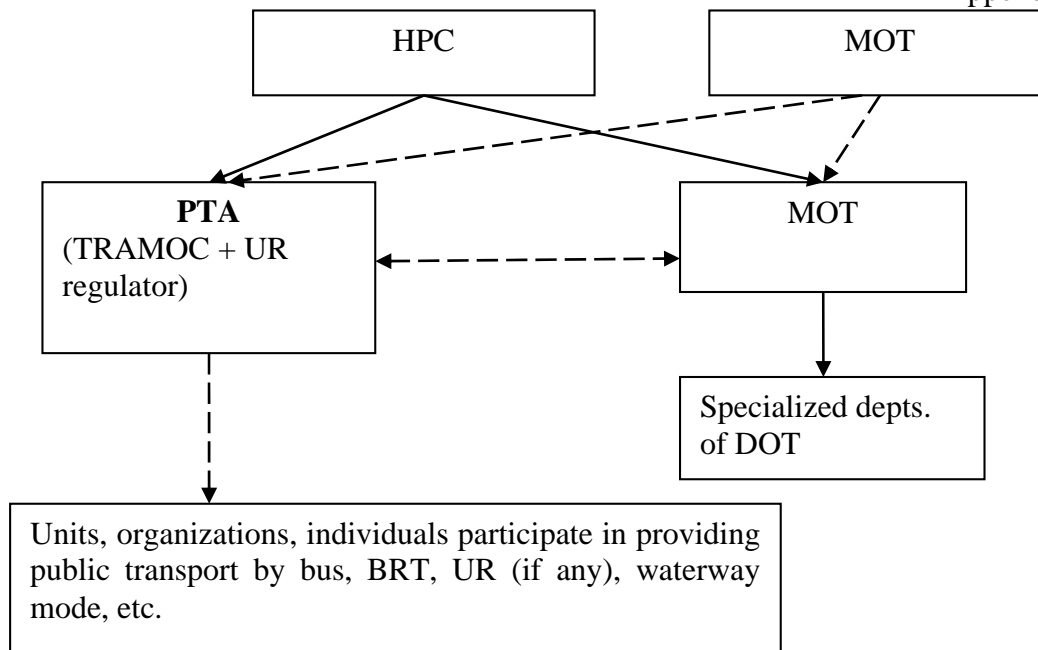


Figure: Proposal for PTA model

2.3.2.2. Advantages of a common public transport management model (PTA) under HPC:

- The model satisfies principle of one Leader: Process of public transport management is performed by a agency specialized in public transport.
- There are no overlaps regarding functions and responsibilities.
- Organization and management model is consistent with the real condition: with the participation of several modes of public transport with much complexity and high frequency; Management of public transport are made by an agency of departmental level with function of coordination between public transport modes.
- Decision-making process is simple and quick.
- Management power is smooth from top to bottom because public transport management agency does not have to share much its management power with other departments within DOT.
- Gathering and processing of information and feedback information is simplified, more reasonable because information goes directly to HPC. Hence, the decision is made quickly and integrally.

2.3.2.3. Functions, responsibilities and position of Hanoi PTA:

Hanoi PTA shall be responsible for governmental management of all modes of public transport in the city:

- To submit the HPC planning, common strategy for public transport (UR, buses, BRT, taxi, inland waterway transport, etc.)

- To perform planning of public transport infrastructure
- To investing in infrastructure for public transport
- To advise on regulations on public transport in the scope and authority of the City
- To provide public transport services in the city through order contract, bidding
- To supervise the quality of service and safety in public transport
- To propose fare price of public transport
- To manage fare collection systems for public transport
- To propose policies and scheme to encourage usage of public transport
- To perform international cooperation on public transport

2.3.2.4. Organizational structure of Hanoi PTA:

Based on above-proposed functions and responsibilities, the Report proposes the organization structure of Hanoi PTA as follow.

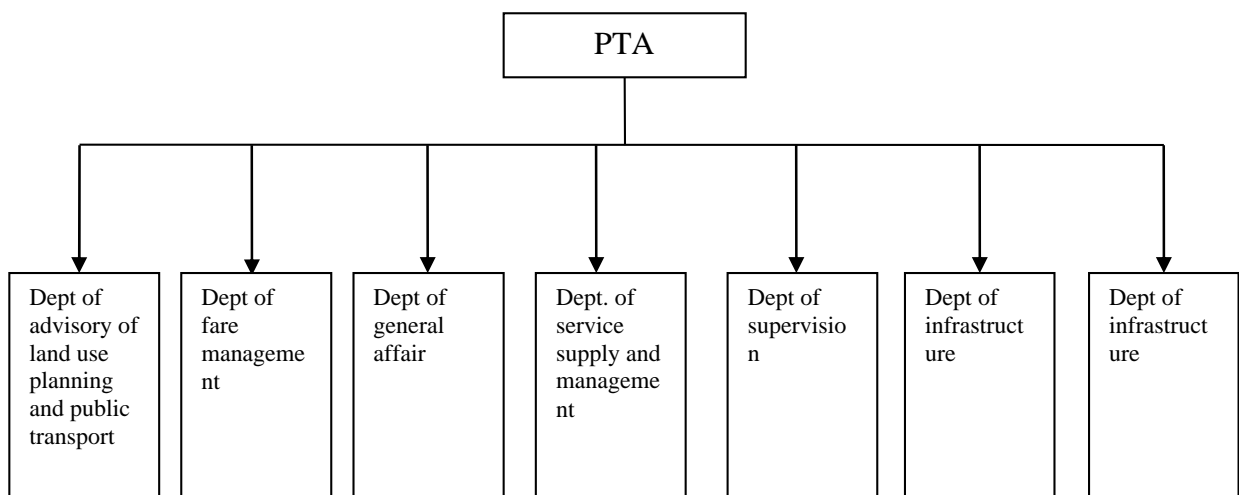


Figure: Proposal for PTA for later stage

CHAPTER 4. CONCLUSIONS, RECOMMENDATIONS

1. Conclusions

Since 10, 2010 till now, there have been discussions, studies by foreign consultants (especially studies by JICA SAPI Team) under the instructions of HPC, departments of Hanoi City and related departments of MOT, the establishment of O&M Company and UR regulator for Hanoi City is defined as necessary and urgent tasks when Hanoi City prepares to put UR lines into operation in the near future.

Along this spirit, JICA has supported HPC to implement TA project to “strengthen the capacity of regulator and to establish operation and maintenance company for metropolitan railway lines in Hanoi City”. Within the frame of the TA project, studies regarding the strengthening of UR regulator have been conducted, and in short term, it is necessary to define Functions, responsibilities and suitable organization model for UR regulator in Hanoi City.

Based on the mentioned above target, this activity of the Project, with analysis, evaluation and proposal in the report, important points are summarized as follows:

- a) Proposal for governmental management responsibilities for UR in Hanoi:
- To advise on regulations and management of UR service quality
 - To advise on regulations and management of UR safety
 - To advise on incentive policy for UR use
 - To develop and propose Fare Policy Report and asking for approval by HPC
 - To advise Tham mưu quy định và quản lý kết cấu hạ tầng và thiết bị ĐSDT
 - To advise and manage infrastructure and urban railway facilities
 - To advise, submit HPC documents related to assignment and arrangement of urban railway governmental management.
 - To advise, submit HPC development plans, long term and 5-year plans, urban railway development programs that suit master plan on socio-economic development of the city, regional and sectorial planning.
 - To check, inspect, and deal with law-violating activities under current laws in term of transportation management, transportation safety in the city area.
 - To propagandize and propagate knowledge related to urban railway laws.
 - To promote international cooperation in urban railway field in accordance with current laws and assignment/authorization of HPC.

b) Governmental agencies currently in charge of urban railway management in Hanoi: Hanoi DOT, which proposes to establish one organization directly under DOT in charge of urban railway governmental management.

2. Proposals and recommendations

On the basis of study results, evaluation and analysis, in order to ensure the effectiveness of proposals and goals, within this document of “strengthening the capacity for Hanoi UR regulator”, it is recommended to HPC and JCC the following:

- Direct and review this Proposal, obtain more comments from functional organizations to complete this before approval of HPC.

- DOT, under the support of JICA TA Team, shall continue to study and develop regulations of Hanoi UR regulator for UR system in Hanoi City, and to develop the personnel for operation and maintenance of UR.

- The approval of HPC for DOT's functions, responsibilities as operating and maintaining UR system in Hanoi City is a basis for DOT and concerned departments to study and advise HPC to develop and promulgate regulations about UR's governmental management in the city.

**URBAN RAILWAY USE INCENTIVE POLICY
STUDY REPORT**

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CHAPTER 1: INTERNATIONAL EXPERIENCE IN PROMOTING, ENCOURAGING THE USE OF PUBLIC TRANSPORT (INCLUDING URBAN RAILWAYS)

I. Necessity of the study, objectives, scope and objects of study:

1. Necessity of the study:

At present, Hanoi City is implementing many investment projects to promote the development of public transport such as investing and improving bus lines, BRT lines, constructing urban railways, etc. Accordingly, related TA projects funded by foreign and domestic donors have helped HPC to approach technology of management, development of policies and institutions, then, giving out necessary instructions for public transport development projects to achieve optimal results, such as projects of integrating urban development with public transport (for UR Line 1 and 2) funded by JICA, project of enhancing the accessibility to UR stations (Line 3), other projects of PTA, WB, etc.

However, at present, there have not projects or programs of technical assistance studying comprehensively about public transport, especially for urban railway network, in order to bring about an overall picture of policies encouraging the use of urban railway. TA project “to strengthen the capacity of regulator and to establish O&M Company for metropolitan railway lines in Hanoi City” funded by JICA, with item of “Study on Incentive policies for UR”, shall work out proposals, necessary recommendations to encourage the use of public transport, integrating public transport vehicles (including bus, BRT and urban railways, etc.) to bring about the efficiency of operation, convenience and the most safety for people.

2. Objectives of the study:

Objectives of the study are to work out evaluations and proposals of projects and programs encouraging the use of public transport, responsibilities of concerned organizations, action plans, and implementation plan, in order to ensure the feasibility of incentive policies’ implementation for public transport system and urban railway network in Hanoi City.

3. Scope of the study:

Hanoi City, projects which are in accordance with Resolutions, policies of the National Assembly and the Government.

4. Objects of the study:

UR system (public transport) of Hanoi, institutional system of Hanoi, which relate to the encouragement of UR use.

II. Background and necessity of promoting public transport (urban railways) in Hanoi City:

While the growth rate of population in Hanoi city is high, especially core center area (4.1% per year), transport infrastructure system is insufficient, often causing traffic congestions, slow traveling speed, and high noise and air pollution.

Citizens in Hanoi City are mainly using private vehicles, which accounts for 90% of their traveling demand. And, public transport could only serve 10% of the demand (*Trancocen, 2012*), equivalent to about 1.296 million passengers. Main public transport

vehicle is bus, which transport about 1.06 million passengers. Other than that, there are taxi, motorbike taxi, etc.

Ground public transport has many problems due to restricted space for roads: this ratio in Hanoi is 7%, while it is 25% in Paris.

At present, to improve public transport system, selected feasible solution is development of urban railway system, playing the role of backbone in public transport system in Hanoi City.

To develop public transport system in general, and urban railway system in particular, the Government must disburse large amount of money from the budget for this investment. The investment and completion of urban railway system for two cities of Hanoi and HCMC will account for more than 40% of GDP, thus, if people are not encouraged to transfer from private vehicles to public transport (urban railways), there will be large waste for the society, and probably becoming public debt disaster for the city's authorities. Thus, Hanoi City must develop policies to encourage the usage of urban railways, attracting certain number of passengers, creating the habit of using public transport (including urban railway), in order to mitigate traffic congestion and environmental pollution.

Within the fringe of this report, TA Project shall study and refer to management experiences, measures to promote and attract the usage of public transport system in general and urban railway in particular in big cities in the world. Accordingly, lessons will be learnt and suitable recommendations and policies for Hanoi City to develop sustainable UR system will be worked out.

III. International experiences in promoting and encouraging public transport (including urban railways):

Reasons of implementing measures and policies to encourage usage of public transport, especially urban railways by organizations, cities in the world?

Passenger transport using public vehicles is normally faster and cheaper than riding a car – especially in crowded areas where there is limited space for car parking.

More frequent usage of public transport modes mean benefits for the community and environment: mitigating environment pollution and traffic congestions, accidents, traffic collisions, and making social environment more active and connected.

In addition, the usage of public transport system will bring about big benefits for users: significantly reducing daily transport expense in the urban area comparing to the cost of using private transport vehicles, and parking fee in urban areas. Frequent usage of public transport system will help to improve conditions, people's health environment, and indirectly increasing productivity of the community.

A study in Perth (Australia) showed that by using public transport, passengers have walked significant distance. Passengers on public transport modes will averagely spend 13 minutes walking for each trip, and about 26 minutes per day. This satisfies 30minutes/day-recommendation on necessary physical activities that body needs in order to ensure good health.

1. Strengthening institutional capability in transport management (passenger public transport)

Government organization is one of main parties providing capital for urban transport and passenger public transport. In general, the Government invests into infrastructures and usually support the operation of that system, or directly joins in the operation via enterprises in the localities even though this is not compulsory regulation. Governmental organizations of each country shall have extremely different methods of operation, due to history of administration organization in that city or country.

Governmental organization at each level from central to local ones shall have certain authorities in urban transport sector, from developing to promulgating legal regulations, planning and funding. These administrative levels often operate in a common certain locality, being coordinated or not. In fact, there is possible situation in which funding sources, development and encouragement policies may focus more on some certain transport modes, resulting in lack of coordination among concerned organizations, not synchronous connecting between urban transport modes, causing less attractiveness to people.

The integration in one urban transport agency will help to create unification and coordinate operation of all stakeholders and transport modes. When many stakeholders join in activities, or network consists of different transport modes, transport agency shall coordinate the operation of such transport modes, being responsible for stabilizing the organization, planning and monitoring urban transport system (passenger public transport – urban railways).

For examples, in developed countries, UR is part of the public transport. After a long development period with many adjustments, the public transport system is organized into Transport organizing agency/State management agencies equivalent to functional Departments in the provinces/Cities or region.

The model of public transport management in big cities in developed countries has high centralization and self-control, in which, transport organizing agency has important role in working out the strategy, planning, balancing and maintaining the budget for public transport development. Cities which are successful in centralizedly managing the transport by one common transport authority such as Ile – de – France region (France) with STIF, London (UK) with TfL, New York (MTA), Singapore (LTA), Japan (Railway Bureau, MLIT), etc.

2. Promoting Public transport (Urban railway) via connection and planning of urban land use with public transport:

Encouraging the usage of public transport via planning of land use including planning new land area and managing existing land will:

- Improve requirements to effectively operate the public transport system (urban railways)
- Improve the access to affected urban area (by public transport) and enhance the traveling of people by different public transport modes
- Increase the demand for public transport, especially encouraging transferring from private transport modes.

This is normal method by organizing/planning positions, coordinating with planning on urban land use, in accordance with development of public transport. Intersections in public transport system, including urban railway stations, are considered catalytic substance, transport nodal for access to land use, urban areas. Households and citizens living in adjacent areas, where public transport nodal concentrates on, tend to travel by private car lesser than those living in other urban areas. Similarly, labors/citizens in planned land area integrated with public transport will be able to travel and commute by different suitable transport modes. They can travel on foot or by bike during lunch time.

In recent years, the development model (urban) supporting Transit-Oriented Development (TOD), focusing on urban areas and communities, is being paid attention to.

TOD Transit - Oriented Development takes transport development orientation as foundation for urban development, planning, taking transport nodal to people attracting area, accordingly forming decentralized transport system. In other words, urban development following TOD is based on developing orientation of public transport system. TOD is an approaching method, to deal with issues relating to traffic congestion and environment protection.

TOD oriented Urban development is area which functions mixing between residential and financial, office purposes. This area is designed to ultimately utilize public transport modes, promoting the development of a city, at the same time, balancing community's benefits. Center of these areas will often include railway stations, bus stops, so on. And commercial, industrial, office service system, etc will be established surrounding which is called TOD points. This is advanced and complete infrastructure system, satisfying living demand. This kind of area is often from 0.4-0.8km radius suiting walkers.

To harmoniously develop and improve living standard for citizens, objective of TOD is to reduce the number of private vehicles (cars, motorbikes) by increasing walking, bike, bus trips, etc. Objective of TOD is to achieve convenience for passengers, commuters, tourists, etc. By this idea, to arrive in a railway station, a person can walk, ride a bike or motorbike or use bus. When getting off the train, they can walk, ride on a bike, etc.

Case study:

Connection integrating with transport and planning of land use is specific character in urban planning in Tokyo, Singapore and Hong Kong. In Hong Kong, city's authorities have planned to make sure a high ratio of about 75% of office buildings and around 42% of resident areas are 500-m surrounding metro stations. This will encourage people to walk to metro stations and get on trains to work or for traveling demand daily, hence, gradually reducing the dependence in road transport.

Similarly, in National and Urban Planning of Singapore in 1971, the connection between planning of land use and transport for city's development was firstly introduced. Main transport modes such as MRT and expressway/urban roads are integrated and connected in the planning of land use in the city. In addition, the connection among integrated transport hubs - ITHs will improve passengers' traveling by creating effective transferring among public transport modes. ITH in Singapore has been equipped with air-conditioning at intersections between bus and urban railways, or with retails, shopping and

commercial developing areas. Then, passengers will feel comfortable for transferring at connecting areas among public transport modes with commercial, office areas in the city, creating a community with better living standard and friendly to walkers.

In Tokyo, urban area surrounding metro stations are planned mixed with retailing area, office and space for walkers. Transit-Oriented Development – TOD in Tokyo is characterized by private transport operators, big buildings crowded along urban railway lines; and in Tokyo, passengers/citizens shall move from each station to their working places/schools and use services on foot.

Stockholm, Copenhagen, Tokyo and Singapore are public transport supported development cities. Urban railway system plays the role of orienting the urban area to ensure objectives of creating open space and social houses for citizens within the service radius of railway system. Suburban land areas shall have mixed functions, and new cities are all gathering surrounding stations.

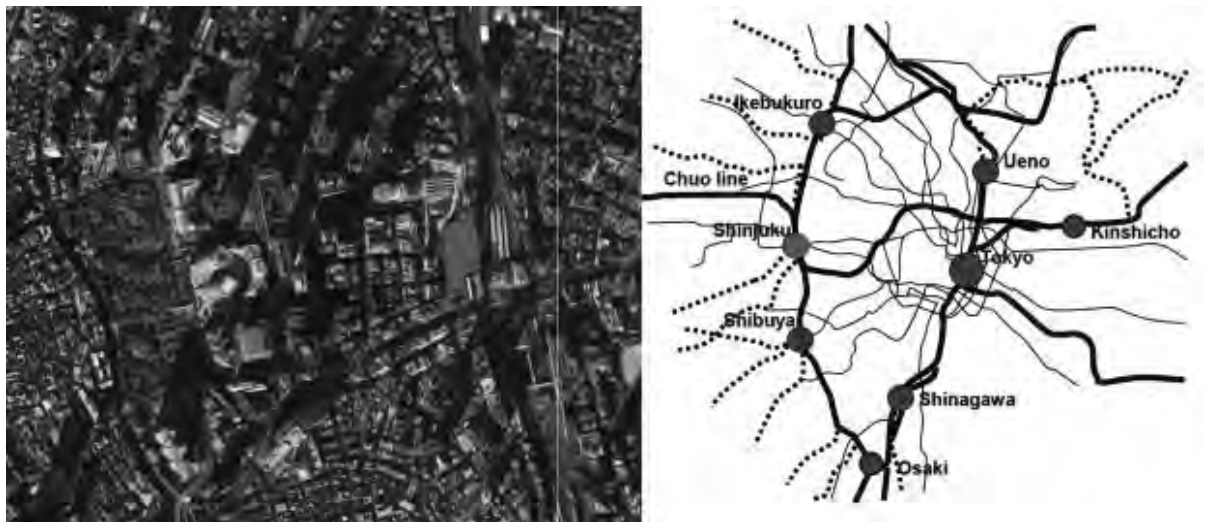


Figure: Tokyo City – All center areas locate surrounding the stations such as Sinjuku, Shibuya, and Tokyo... The red in the figure is Sinjuku Station and office building and western commercial area

3. Travel Demand Management

Transportation Demand Management – TDM) or Travel Demand Management aims at optimizing effectiveness of the urban traffic system by encouraging people to reduce usage of private mode and increase usage of environment-friendly modes, which are more effective and better for health, generally are public transportation ones (priority given to mass, rapid and convenient modes such as urban railway) and rudimentary modes.

Within the scope of encouraging usage of public passenger transport, especially urban system, it is necessary to implement measures that restrict people to use personal vehicles (cars, motorcycles) (PUSH) and promote and enhance the attractiveness of public passenger transport mode to move people to use it (PULL)

A livable city is the one that not only have economic growth, but also ensure sustainable development, clean environment, safety and economic benefits for the society and community.

Goal	Reduction of transportation speed	Change of travel time	Travel with shorter distance	Change of travel mode	Reduction of travel by vehicles	Reduction of use private cars
Reduction of congestion		x	x	x	x	x
Saving road cost			x	x	x	x
Saving parking fee				x	x	x
Saving for the users			x	x	x	x
Increase of travel options			x	x	x	x
Road safety	x		x	x	x	x
Preservation of energy source			x	x	x	x
Reduction of polluted waste substance				x	x	x
Effective use of land			x	x	x	x
Health of the community	x		x	x	x	x

3.1 Restriction of the use of private modes:

3.1.1 Motives leading to travel demand by private modes::

To evaluate measures to restrict private modes, it is necessary to consider many factors impacting on demand of using these modes:

The factors include:

- Level of wealth and vehicle ownership of the households.
- Quality and capital sources for construction of parking work and road.
- Price (fuel, road use, parking, public transport fares).
- Average speed, convenience and comfort when traveling by private cars and when using public transport.
- Conditions for walking and cycling.
- Model of land use (distribution of destinations).
- Desire and habits of people in traffic.

As families become more affluent, they are more likely to own and use vehicles including motorcycles and cars. Therefore, if there is no special efforts to maintain the options of travel and manage travel demand, the traffic problems will increase and eventually they will make everyone feel the situation worse.

3.1.2: Control of car ownership increase:

Although the cost of cars is expensive, the car ownership is growing rapidly in many developing countries. Thus, in order to control the increase in car ownership, the government and the transportation management agency proposed economic instruments like car sale tax, import tax, registration fees and taxes that may affect number and type of vehicles bought.

3.1.2.1 Car sale tax/import tax

Many countries impose customs duties or import tax on vehicles imported to give priorities to policies on usage of domestic goods. Car sale tax is applied widely to all types of vehicles. In some cases, lower level tax is imposed on vehicles which consume fuel efficiently to encourage rotating means or replacing car using pollution fuel to meet the goal of ensuring environmental quality.

In the developed countries, imposing tax is applied popularly.

Type	Tax or fees	Ratio
Buying vehicles	Customs duty Indirect tax VAT Ownership tax	3-5% 17% 10%
Ownership of vehicles	Fee for inspection of new vehicle Fees for license plate registration of new vehicles Vehicle use	8,7 \$ - 46,8\$
Vehicle use	Insurance fee Maintenance fee Consumption fee	16-46,8\$ 3-20% (depend on size of the engine)

Table: Vehicle taxes thru several periods in China

3.1.2.2 Registration fee/annual road fee

In developing countries, the owner of the car must be charged annually or semiannually to contribute to the revenue for maintenance of roads and bridges. The level of this fee may be based on engine size, to encourage types of vehicles which use fuel efficiently.

In the US, registration fees range from \$30 to \$ 150 per year, and with a piece of adhesive stickers on license plates. In addition to "toll" calculated for people, many European countries also require their people to buy time-based stickers as yearly, monthly, weekly or daily when people go back and forth in other countries.

Road tolls in Singapore are classified according to engine size, fuel type, and vehicles (cars, motorcycles, etc) to encourage people to use the means with less emissions. Under this system, the owners of a small car with 1000cc engine may pay \$600 annually, whereas , the owners of 4000cc engine car pay more than \$6,000. Payment for Diesel vehicles is 6 times higher than that of similar vehicles using gasoline.

3.1.3: Restriction and reduction of car use

A series of economic measures could affect driving habits and reduce trips that only one person is in the car. The economic measures that minimize the use of cars provided signs of prices based on marginal cost of using car, i.e. the more cars are used, the more money the drivers have to pay.

3.1.3.1 Fuel tax

Almost all countries impose taxes on fuels. These taxes can be regarded as a general tax or fee dedicated to road users. Revenues from fuel tax are used for transportation purposes, and in some cases limited to the road network. Fuel taxes can be collected by the central government, state or locality. For example, in the US, the state-level fuel taxes on gasoline and diesel are \$0.048 and \$0.064 per liter, respectively for all road vehicles, from motorcycles to public transport modes as bicycles, trains. Additional tax (state-level fuel taxes average is \$ 0.07 per liter) is limited with a purpose for roads in 36 states. However, such tax level is too low to implement measures to manage travel demand, as well as impossible to achieve fuel tax purposes in the United States.

Europe where the policy makers intend to reduce the use of cars through the fuel tax, higher tax levels. In Germany, for example, drivers pay the state-level fuel tax equivalent to US \$ 0.81 per liter on gasoline and US\$ 0.058 per liter on diesel. But in the long term, such as 10 years, the price fluctuation is twofold. Thus, the fluctuation of fuel prices faster than inflation and the increasing rate of income is to effectively manage the demand.

Some countries impose high level taxes on fuel in order to encourage use of public transport modes. In some develop countries this tax brings a big income source to re-invest in public transportation system (urban railway).

For example, in the State of California allocates 70% of fuel tax revenue, \$4.3 billion in 2006, to the transport sector, 10.4% of which goes to public transport. In Colombia, this tax on fuel provided 20% of the investment for the first three Transmilenio railway lines; In

Germany, Bavaria State uses these funds to subsidize the losses of suburban rail services (40% of costs).

3.1.3.2 Urban traffic charges:

Urban traffic charges aim at minimizing number of vehicles in urban areas by requiring transport mode users to pay fees entering some certain regions.

These fees are for many different purposes:

- Reduce congestion in the inner city:
 - + Through encouraging people who use private mode to shift to public transport mode
 - + Through dispiriting a part of those who still use cars and motorbikes in some center times on some certain distances.

The main purpose of the cities like London, Singapore, and Stockholm that apply the method of charge collection is to constraint number of cars accessing the city center, making traffic circulate more smoothly and giving priority to public transportation.

- Reduce environmental pollution (since pollution levels are often associated with congestion) and improve the quality of urban life by forcing those who use private vehicles pay a portion of the extra costs for the negative impacts they made.
- Raise new funds for investing in road infrastructures or public transport. In Oslo, a toll was introduced in 1990 for a limited period of time in order to raise funds for building new bypasses and tunnels which would relieve traffic congestion in the city centre. The moderate charge was introduced solely to raise funds, not as a measure for reducing traffic.

Depending on the main objective, be it to deal with congestion in a particular area, to raise funds, or to tackle congestion at certain times of the day, different systems can be implemented. Normally, urban transportation charge is divided into three types, namely cordon charge, area charge and toll roads for use of the freeway network.

- Cordon charge: users are charged each time they enter the designated zone. The boundary, or cordon, often surrounds the heart of the city centre.
- Area charging: a one-off charge is imposed on all users for travelling within the zone for a specific period of time. It can, however, be varied according to the overall length of the journey and or the time spent within the zone.
- Toll roads: this toll applies to high speed roads running directly into central urban areas, and aims to provide clear roads to paying traffic, and to alleviate congestion on the toll-free roads.

Bảng: Các loại phí giao thông đô thị

	Phí vành đai	Phí khu vực	Phí sử dụng mạng lưới đường cao tốc
Một mức phí duy nhất	Na uy (Trondheim, Oslo, Bergen) Dự án Stockhom	London, Singapore (trước năm 1998)	
Nhiều mức phí khác nhau	Singapore (Từ năm 1998)		Hot Lanes (San Diego, SR – 91), Đường cao tốc 407



Users are charged each time they enter the designated zone. No charges are imposed for journeys within the zone.	Users are charged each time they enter the designated zone and may be charged for internal journeys within it.	Driver pays for the privilege of using the road; generally a free-of-charge alternative exists.
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Conditions for application of transportation charge:

- It is required to have a network of public transport (Urban system, bus, BRT) that meets the increasing number of passengers and ensures the quality of service so as to switch to use other transport mode is not considered as a discrimination against those in traffic. Otherwise, charging may restrict the traveling flow and decrease number of economic activities or cause to the situation that the private mode users switch to use to less expensive route.
- Society acceptance is compulsory condition. It is necessary to explain people about the consequences caused by traffic congestion to people, society and the environment. Urban transportation fee may be introduced as the "who causes pollution must pay" model. When information is not good for people, the charge can cause strong objection.

References of London case:

In London, traffic management agency of TfL type is responsible for the entire transport policy from circulation to public transport. It is also the agency that conduct charge collection in the center area. The establishment of the system was introduced

in two successive stages: in 2003, the zone covered 22 square km, and in 2007 it was extended to 40 square km.

Camera system tracking number plates shows that people strictly pay daily charge of £8. Payment is compulsory from Monday to Friday between 7 a.m. and 6 p.m. The zone's residents are entitled to a 90% reduction if they buy a monthly or annual pass. Emergency vehicles, vehicles for disabled persons, vehicles with more than 9 seats, motorcycles, taxis and buses are exempt from charging. The fee is required from 7h to 18h in the period from 2nd to 6th The people in this area is reduced by 90% charge when purchasing tickets or tickets five months. The emergency rescue vehicles, disabled vehicles, public transport do not have to pay.

The goals of the transport charge policy set for 2010, are:

- a 15% decrease in road traffic (excluding motorcycles) within the zone
- a 20-30% decrease in traffic congestion within the charging zone.
- by 2020, a modal shift of 20,000 passengers towards public transport (urban railway, bus and tax) during charging times.

In 2004, research carried out by TfL show that these goals have largely been accomplished.

- Number of vehicles with more than 3 wheels has decreased by 15%;
- Congestion has decreased by 35% in the zone, which has resulted in a 3km/h increase in traffic speed, from 14 km/h to 17 km/h;
- 14,000 users have switched to public transport, mainly urban railway and bus.

The introduction of congestion charging wasn't met with a strong opposition. This may be attributed to the fact that the scheme was introduced in a limited zone, where about 15% of passengers travelled in personal cars before the trials began. The pilot process was conducted smoothly.

Setting up charge collection stations seem to have a positive impact on the real estate market because after 6 months, the value of office buildings in the charging zone has increased and in higher level compared to the similar areas without charge collection stations.

Figure: Urban transport charge collection in (TfL)





3.1.3.3 Regulations of parking fee

The competent authority may consider parking in urban centers as a leverage tool to control traffic but to be effective, such measure should be implemented in coordination with other transport policy. Parking fees are not just a way requiring the traffic participants to pay for the use of urban road lanes but also a source of revenue and as a tool to encourage motorists to switch to use public transport modes (Urban railway, bus ..).

The transport policy must balance between one side that desires to provide space to meet the needs of the drivers and the other side that requires to control the space usage and minimize the negative consequences of it.

Limitation of the number of parking places and adjustment of this number according to many different criteria is one of the many measures to control demands of using personal transportation mode in the city centre.

- To achieve this goal, the following elements must be ensured:
 - + Providing alternative or combined transport means, for example, transitional parkings in the areas surrounding the centre.
 - + Keeping minimal packing space for the activities in the city centre.
 Similar to charge urban transport, providing parking service and park charge collecting is a method to encourage people to switch to public transport means. This measure can also bring significant revenues and part of investments in public transportation system.
- Conditions required to implement parking charging:
 - + Firstly, parking places, on the road or parking area. One of the measures possibly to implement is to build a limited parking places in the center of the city and arrange parking with charge on the routines to free traveling space. However, this policy needs to be applied with reduction of traffic flow by issuing strict regulations on parking place.
 - + State management agency needs to control parking places directly or through regulations and setting of ticket prices, at the same time, to acquire a portion of the parking revenues.

- + The quality of public transport services must be guaranteed, playing additional role for parking policy.
- + The existence of a transport agency generally will facilitate the integration of policy on parking with charge into the general transportation policy on in the city centre.
- + Profits gained from the parking should be invested in urban transport (public transport).

For example, in San Francisco, Municipal Transportation Agency (SFMTA) manages the entire transportation system of the city, including 40 charge parking yards of the city and parking spots along the roads. In 2007, the SFMTA earned 197 million dollars of fees, equivalent to 1/3 of SFMTA budget. Revenues from parking includes collection from the users, long-term parking pass for the local residents, fines and a half in the amount of tax equal to 25% of the total revenue of the private park place.

Lesson learnt from Montpellier (France):

In Montpellier (France), Montpellier Residential Community (CAM) has used parking yards as a leverage means to encourage the construction of more parking area in the building with parking attractive charge for people living in this building. On the other hand, in the working areas where has tramway service, parking places will be limited. In addition, the construction of transitional car park at the gateways of the city.

This method is formed from the idea of encouraging people to park their cars in the parking garage or transitional parking area and then use public transport to enter the city.

TAM is the transport company of Montpellier metropolitan area applying the above measures thru management:

- + 7 transitional parking yards to the tramway with a capacity of 3000 cars and attractive price. Parking charge plus return ticket is 3euro for the residents of urban areas and 4 euros for the others.

- + 7 public parking yards in the city centre with 3300 lots and price determined by the city;

- + About 15,000 parking places charging by timers installed in the lines, accounting for three-quarters of the total number of parking spaces in the city center. Parking prices also regulated by the city.

The goal of TAM is to encourage the use of public transport with a price acceptable to the public and commercial activities to impact on these activities as well as people's lives. On the other hand, TAM wants to mobilize financial resources for construction and maintenance of parking area. Implementation solution is to apply incentive parking charge for people in the region and introduce parking system with time-based charging (short, medium, long) to those from other places.

3.1.3.4 : Measure to regulate and ban on private modes:

- The regulations and policies on restricting vehicles into the city centre are implemented through limiting parking and banning vehicles to run on some streets and certain areas or during rush hours. In addition, it is necessary to increase the areas without cars as well as days without cars.

For example:

+ In China: Air pollution, noise pollution, traffic accidents and congestion are tarnishing the image of the modern cities of China. Guangzhou issued regulations on banning motorcycles circulation in 2007 to improve this situation. Previously, the city had a series of measures to restrict personal vehicles registration, to ban on vehicles with suburban number plate getting in the city from 7am to 7pm, and stopped issuing vehicle registration for new motorbikes since 1995.

Banning on circulation of motorcycles has reduced 24000 tons of CO, 300 tons of CO₂ and 300 tons of waste substance to the air every year.

Many people changed from motorcycles to subway and bus. The city authority has changed the bus route to intensively receive passengers outside of the metro station.

Municipal government has policies to encourage buying back motorcycles for its people.

After 8 months of ban issuance, the number of traffic crashes has decreased by 17.5%, down 2.2% of mortality, injury due to traffic accidents decreased by 20.4%.

For travelling situation, space for pedestrian in the entire city had improved markedly with civilized landscape and less sleazy. Public transport system developed rapidly with metro system, buses, BRT, basically satisfying traveling demands of the people.

+ In Southeast Asia, the Yangon city authority (Myanmar) issued a complete ban on motorcycles in 2003. The authority has issued regulations on strictly sanctioned for violations, as fine with 20,000 kyat or seize of car if entering the restricted areas. Although Myanmar has not had developed public passenger transport system (UR, BRT), the objective to ban private cars will help the government easily manage and control urban transport better in the future.

- Restriction by license number plates:

This is policy to restrict vehicles, pursuant to their number plates, running in a certain area during some certain days per week in order to reduce the number of cars operating. In almost cases, the restriction in number plate will be applied on several vehicles, areas or certain timing during a day; even though, some cities in the world even restrict this for the whole day. This is common agreement, restriction following number plates is not effective solution for long term since in fact, this method cannot meet the increase of number of vehicles operating.

For example:

- + Mexico City prohibits vehicles operating in states based on its last digit on its license plate, for example, those ending with number 1 and 5 on Mondays, last digits of number 2 and 6 on Mondays, etc. in working days (“Hoy No Circula”);
- + Bogota applies a policy in which 40% of private vehicles cannot operate from 7am to 9am and from 17.30pm to 19.30pm depending on license plate as regulations (“Pico y Placa”);

Santiago De Chile implements a policy which is only effective during days when air pollution reaches alarm level. All of vehicles except for bus, taxi and ambulance are prohibited from operation during peak morning and afternoon hours on six main roads connecting suburban with city center;

- + Sao Paulo applies mechanism on a broad area (within the inner ring road, with radius of 15km), in which, 20% of transport vehicles (such as those have last digit of license plate is 1 or 2 on Mondays) is prohibited from 7am to 8am and 17pm to 20pm everyday;
- + Malina is using policy prohibiting several transport vehicles based on license plates from operating on some main roads during peak hours.

3.2 Supporting people to use public transport vehicles (Urban railways)

3.2.1 Encouraging voluntary participation of enterprises:

Public transport regulator takes solutions for employers to involve in traveling of the staff. Methods and scale of projects are different much by each country, but this idea also has common characteristic as following:

- Encourage enterprises to think, be responsible and improve the traveling for their employees.
- Mitigate traffic congestion and environmental pollution via encouraging the use of car-pooling, organization’s vehicles as well as advertising sustainable transport modes.

Companies in Europe, America had set up Company Mobility Plan (PDE) and this was encouraged by transport regulators. In PDE in America, companies shall pay compensation to employees who chose to give up their free parking spaces. This money can thus be used by employees for public transport or for car-pooling.

3.2.2 Mandatory contribution of companies for public transport (including urban railways)

Businesses contribute to financing public transport through general taxes, although in some countries a direct tax is imposed on companies since authorities consider them to be indirect beneficiaries of the public transport system. These mandatory taxes are applied in different ways, mainly as tax charged on company’s total payroll costs and directly attributed to the public transport sector and subsidies for salaried employees who use public transport.

a) Direct finance support for employees:

This is direct support for employees, which will indirectly support public transport system. One advantage of this method is its transparency, because costs will be paid sufficiently. It will help to encourage the use of public transport modes.

For example

- In Brasil, Vale Transporte card is introduced and it is employer-subsidized scheme for their employees. Accordingly, employers will pay public transport fee for their employees equivalent to maximum 6% of their salaries. The

employers buy public transport vouchers from the transit authority and top-up the employees' pass. This is a legal obligation of employer, applied to the entire of urban center. This is also a social equalizing method, because it prioritizes only the poorest staff.

- In France, since 1980 till now, monthly mobility fee of employer to employee will be applied nationwide despite of their positions and salaries. Current payment level (in 2009) is 50% of monthly pass. The payment is made at the end of a month after employee returns monthly pass.

b) Companies' transportation tax

The most popular example is mandatory transportation tax (VT tax) which was introduced in 1971 for public or private companies for 9 staff in Ile de France to support the development of urban transport in Paris region which is under economic bursting development. This method had later expanded to the entire residential area in France.

In Paris region, the ceiling rate is 2.6%, and suburban area is from 1.4 to 1.7%. Transportation tax imposed on payroll costs is a stable source of income, importantly contributing to improvement of public transport services.

3.3 Enhance people's acknowledgement on the use of public transport

Public transport also needs to face challenges as any other products in the market, meaning that the more people know about this service, the more people will buy it. Advertisement of transport service is a key factor to develop the transport sector. Information about route and fare is available for new user via different channels such as websites, maps, signs, kiosks, hot line and advertisement panels.

Public events and advertisement strategies can help to improve people's acknowledgement about efforts to manage traveling demand, at the same time, getting the trust of passengers. Such events will help the government to distribute maps and other information, providing advice on using bikes and public transport modes, and receiving people's feedbacks about the plan. An example of a public event which was spreaded many cities in the world is "Car-free day", when cars are not allowed for operation, and roads are spent for walkers, bikes, patin, skateboard, segway private vehicle and others. This event is estimated to become a social and entertainment event for people to communicate and feel of the city in another way, and people will enjoy pure and quiet atmosphere.

Example:

Bogota City, Columbia is the first city executing Car-free day since February 24, 2000, organized by Mayor Enrique Pe and The Commons, an international environment organization. This was one of the first Car-free day organized in a developing country. This event was successful and became popular, thus, organizers had received Stockholm Challenge Award. The following is a summary of the mayor's speech: "This is an excellent achievement of people in Bogota City. A city with 7 million population has operated without cars. His experience allows us to understand basically about city's transport system in 10 or 15 years later: an excellent public transport system and there are no car during peak hours. The more important is community's attitude to show during those days. We have reinforced more trust on capability to implement big community efforts to develop more sustainable and happier city. Surveys showed that 87% of citizens agreed with Car-free day, 89% did

not face any difficulties for existing transport system, 92% said that no staff or student had been off and 88% revealed that they wanted one more Car free day. Now we want to implement a polling to propose objectives of 2915: from 6am to 9am, and from 14.30pm to 19.30pm, all cars must leave roads. Thus, citizens will travel by their own means like public transport and bikes”.

URBAN RAILWAY ENCOURAGEMENT POLICIES ON USE IN THE WORLD

POLICY GROUP	DESCRIPTION	SPECIFIC POLICIES/METHODS	CITIES APPLYING
GROUP 1		Integrating into one regulator which managing and organizing public transport for all vehicles (bus, urban railway, BRT, etc.) in strategy planning, planning, balancing and maintaining budget for development of public transport.	European countries, North America, Japan, Singapore.
GROUP 2 (TOD)	Developing the area in the future	Planning to organize UR stations into a system of commercial services, industries, offices, etc with high density development within the distance of 20 minutes walking, in the radius of 0.4-0.8km	Big cities in Japan, Bangkok, Australia
	Station accessing services with “On street vehicles”	Design of bus services, bus stations, waiting shelters for passengers	
		Provide 2-wheel vehicles parking lots (motorbikes, bicycles)	
		Provide parking areas for motorbike taxi and taxi nearby stations	
		Provide positions to stop and dropping passengers off for vehicles, which should be near to entrance/exit of stations without causing traffic obstacles	
	Station accessing services for pedestrians	Provide the space for pedestrians, remove obstacles on pavements which may obstruct walking paths	
		Improve, upgrade the pavements, curbs, accessing corner to stations. Install reasonable accessing paths for the disabled to enter stations	
		Provide, ensure sufficient lightening system, trees, water drainage, lane printer, signs, etc. to help pedestrians better accessing the station area.	
		Need to supplement the system of flyovers, underpass for passengers in areas where the density of vehicles is high	
	Organizing the traffic surrounding stations	Select optimal plans to well organize the traffic surrounding stations, creating priorities for public transport vehicles such as Bus, BRT to access stations: Laning from distance and surrounding stations to avoid traffic jams; Establish	

		prioritized traffic system such as prioritized signs, signal lights, laning for public transport vehicles to conveniently access stations	
	Multi-modal interchange	Design an area where passengers can interchange from UR with other public transport vehicles. Interchange, connecting services such as bridge (tunnel), waiting shelters, indoor walking paths, roofs, commercial areas need to be reasonably arranged, ensuring convenience of passengers	
GROUP 3a Management of traveling demand (PUSH)	Controlling the increase of private transport modes (automobiles, motorbikes)	Imposing various tax and fees: import tax, registration tax, vehicle using tax, annual road tax	Many countries in the world
		Provide quota for automobiles, motorbikes, accordingly, people must engage in auction or purchase the right of vehicle using.	Singapore
		People those want to own a car shall need to prove that they have area to park their cars.	
		Apply the regulation on life cycle of motorbikes	
	Restrict, reduce the use of private vehicles	Fuel tax	USA
		Urban transport fee	Singapore, Stockholm
	Charge for parking in urban area	Collect parking fee These kinds of tax, fee shall encourage enterprises to provide parking areas, and for users, these will encourage them to use replacing vehicles.	Cities in the world
Prohibite private transport vehicles	Prohibit some transport vehicles to enter city center during peak hours	London	
	Restrict transport vehicles by register number plate	China (Shanghai, Guangzhou, etc.), Mexico, Sao Paolo, Manila	
GROUP 3b Management of transport demand (PULL)	Improve public transport passenger services	UR and bus lines are extended, the space is extended, the service frequency is increased, in order to ensure the demand of public transport	Cities in the world
		Prioritizing supporting passenger transport modes which have high space occupation rate such as separated lane for bus, prioritized signals for bus, and mitigate any delay for public transport modes	London (UK), Singapore

	Improve, ensure facilities for passengers in stations, bus shelters with roofs, seats and WC, etc.	Curitiba (Brazil), Guangzhou (China), Bogota (Colombia), Munich (Germany)
	Integrate the system and fare of public transport, need to have reasonable policy to integrate the ticket system of public transport vehicles, creating a convenient payment system by using smart e-ticket.	Popular in the world
	Integrate passenger information, improve promotion programs: provide passengers with information, alternatives of routes, fare level of public transport services	
Improve the services for bicycle users	Construct parking lots, separated lane for bicycles	Cambridge, London (UK), Copenhagen (Denmark)
	Map, direction signs for bicycle users	
	Public bicycle leasing service	Big cities in Europe, Osaka (Japan)
Encourage, support public transport users (Urban railways).	This is method with which Transport organizer can pull, encourage enterprises to join in the transport of their employees. Enterprises must pay their employees an amount of money if those employees do not use free parking area in the enterprise. With this amount of allowances, employees can pay to ride on common bus or by public transport (Metro, bus, BRT)	Brussel (Bi), USA, UK, Canada, New Zealand...
	Compulsory contribution of enterprises to urban transport (including public transport: Urban railway): specifically, a level of urban transport tax is stipulated for employers, this tax rate shall be contributed to the development of city's public transport system.	Entire France
	Indirectly support urban transport via subsidizing users not services. Enterprises, state administration organizations support their employees in purchasing monthly public transport ticket, or employers can purchase transport fee/tickets at public transport operators or transfer to transport card of their employees.	Brasil, France
	Have a reasonable ticket policy (fare type, fare structure, fare level), fare subsidy for public transport users, especially students, workers, officers, the disabled, the retirements, etc.	European countries, USA, China, South East Asian countries, etc.

	Propagandize, enhance the awareness of people about public transport by urban railways	Methods of promoting public transport services, provide information, reasonable routes on mass media; launch campaigns of encouraging the use of public transport, bicycle day, no-car day.	Bogota (Colombia), Zurich (Switzerland) with no-car campaign, Bavaria State with bicycle day
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CHAPTER 2: STUDIES RELATING TO THE USAGE OF PUBLIC TRANSPORT AND URBAN RAILWAYS IN HANOI

At present, Hanoi City is implementing many UR projects such as Line 2A Cat Linh – Ha Dong, Line 3 Nhon – Hanoi station, Line 2 Nam Thang Long – Tran Hung Dao, Line 1 Ngoc Hoi – Yen Vien. Projects are being actively implemented and managed by governmental organizations and HPC under the assistance of international organizations in terms of capital and construction technology. Besides, apart from the study to help HPC on investment of constructing UR lines, international organizations such as ADB, WB, JICA, etc have also worked out and provided Hanoi City with issues and solutions for implementation, as well as recommendations on integration, improvement, encouragement of using Public transport system, in which, the core is UR system.

Within this Chapter, I would like to brief the information of several TA projects which aim at encouraging people to access and use UR system in easy, convenient way, promoting the development of public transport system in Hanoi in general.

I. Final report of Feasibility study “Survey consulting service to prepare FS report about transferring stations in pilot UR project (Nhon – Hanoi station)” under the Project of urban and environmental integration for pilot UR line (Nhon – Hanoi station):

A. Project’s introduction:

In implementation of studies on Strengthening the sustainable urban transport for Hanoi UMRT Line 3 project, Hanoi City has received financial aid from ADB and other international organizations. To support the preparation of Project to strengthen sustainable urban transport for Hanoi Metro Line 3 Project, ADB has funded a PPTA no. 7894-VIE regarding feasibility study on transferring stations for pilot UR line Nhon – Hanoi station, especially two stations of Cau Giay and Ngoc Khanh, which is included in TA Project “assisting to harmonizing urban area and environment for pilot UR line Nhon – Hanoi station” funded by FFEM and AFD, shall be main contents of consulting service. Consulting organization included experts of main contractor MVA (SYSTRA).

B. Study objective of the Project:

Main objective of this project is to improve the accessibility of UR stations, and ensure the multi-mode transferring via effective connection between metro with existing and future public transport.

C. Main contents of the project report:

Project report has overviewed all centralized solutions from locality level to national level. In which, it focuses on three group of solutions to be considered for studying and analysis as following:

- Enhancing the accessibility of passengers to UR stations
- Integrated services and improvement of public transport service
- Support for transformational policies and management measures

1. SOLUTION GROUP OF ENHANCING ACCESSIBILITY TO STATION:

The project report has worked out and clarified the objectives of this solution group. Accordingly, methodology method is given out, which is reasonable for management organizations of Hanoi City in design and improvement of UR station infrastructures, and adjacent urban transport infrastructures.

Important solutions need to be implemented in this solution group have been worked out by consulting organization as the following:

“On street vehicle” accessibility design

Consulting organization presents this solution is to provide stops/parking lots in adjacent areas of stations, aiming at mitigating the parking in areas where the accessibility to station can be obstructed, and provide stops/parking lots at distance which is convenient for passengers to access metro stations.

Evaluation on current situation in Hanoi City

+ In “Plan of public parking lots”, UR Line 3 accepted the proposal of constructing several parking lots such as Van Mieu – Quoc Tu Giam, Ngoc Khanh underground park-and-go lot.

+ Prioritizing in land fund, parking lots, etc. for investors. Decision no. 4390/QĐ-UBND by HPC in 2012 approving the Plan on management of public transport by taxi in Hanoi City in period of 2015-2030 has indicated policy for the development of taxi stops, especially in commercial centers, stations, etc.

Pedestrian accessibility design:

This is design mainly serving passengers who live within 500m around station area or passengers who would use Metro to go to attractive centers around the station. The pedestrian approach is applicable to both sidewalks on the streets and alleys accessing to the station. The report presented several requirements on pavement design for pedestrian to easily access stations in convenient and safe manner.

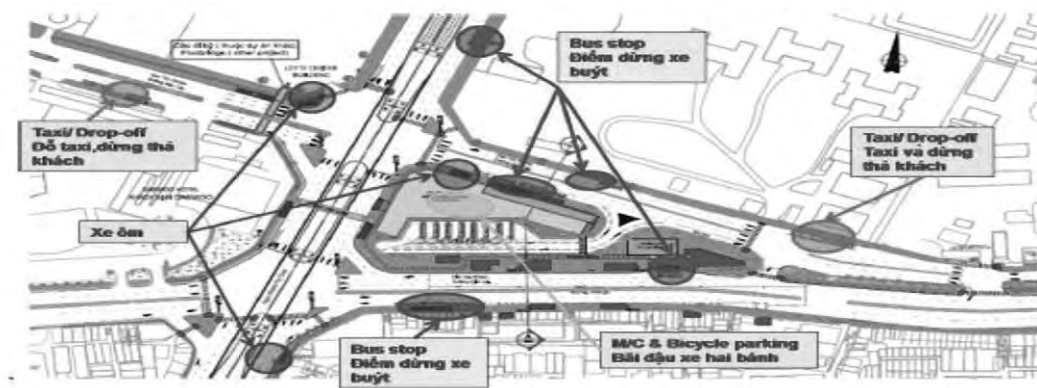
The report has explained about the necessity of installing signaling equipment, and signs for pedestrian; direct accesses from parking areas, bus stations to the station; vegetation, trees or request for designing and constructing viaducts, underpasses for pedestrian at crowded traffic areas.

Evaluation on current situation in Hanoi City

+ The Plan on improving, amending pavements till 2020 by HPC has mentioned about solutions of improving and amending pavements, trees and urban landscape...

+ HPC has implemented the program of 7 solution groups for mitigating traffic accidents and congestions: constructing flyovers, signal traffic lights for pedestrians in crowded areas, bus transit points.

Figure: Plan of Transport services accessing Ngoc Khanh station



Traffic management measures:

Traffic management is a priority in designing passengers' access by vehicle to stations. The purpose of this method is to study overall integrated traffic planning around the station area. To select optimal options for overall good traffic arrangements as well as creating priority for public transport access such as bus to the station.

Main tasks are proposed as following:

- To forecast traffic demand in all directions. To arrange remote traffic divergence to minimize traffic congestion within the area.
- At intersections, install traffic systems such as priority signals, signs and dedicated lanes to facilitate public transport.
- There should be temporary traffic management measures when Ngoc Khanh and Cau Giay stations are under construction in order to minimize the impact on current traffic flows.
- Usage of “soft” measures such as regulations for restricted parking areas, limited waiting / parking time, etc.
- Provide kiosks and suitable facilities for inspectors.

Evaluation on current situation in Hanoi City

- + The Plan on improving pavements till 2020 by HPC has worked out solutions to improve the pavements, trees, urban landscape, etc.
- + HPC has implemented the program of 7 solution groups for mitigating traffic accidents and congestions: constructing flyovers, signal traffic lights for pedestrians in crowded areas, bus transit points.
- + To ensure safety and avoid traffic congestion, HPC has instructed city's authorities to re-configure the traffic system, banning and restricting trucks, taxi during rush hours, using warning lights and lights, laning from distance. In addition, there are also sanctions towards vehicles consciously violating such instruction of laning.

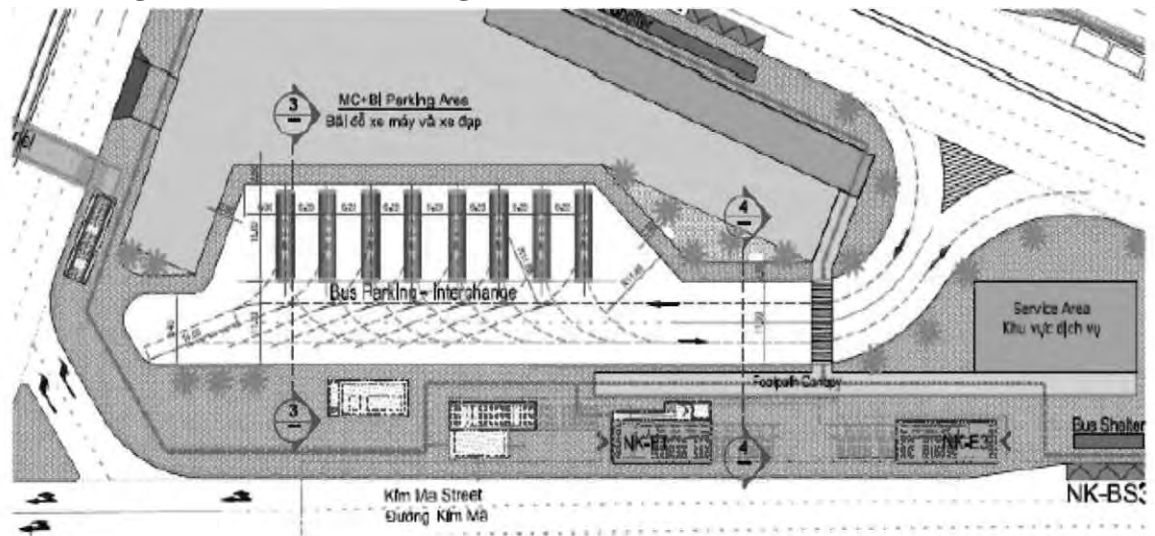
Intermodal interchange design:

It is to design an area where passengers transfer between metro and various travel modes.

- Interchange facilities such as shelter, pedestrian subways/footbridges, and indoor or roofed sidewalks should be provided where appropriate and optimal for pedestrian.

- Provide real-time and fixed information for passengers. Provide space for the commercial business area if possible.
 - Other travel modes such as bicycles, motorcycles, taxis, etc. should also be optimized in term of distance as well as services for transit passengers.
 - Facilities for the disabled should be provided at all interchange areas to ensure the disabled could use these facilities themselves as conveniently as possible.
- **Evaluation on current situation in Hanoi City**
- + At present, in Pre-FS report of Line 5 (Nam Ho Tay – Ba Vi), it is said to link with Line 3 in Ngoc Khanh.

Figure: Bus terminal in Ngoc Khanh station



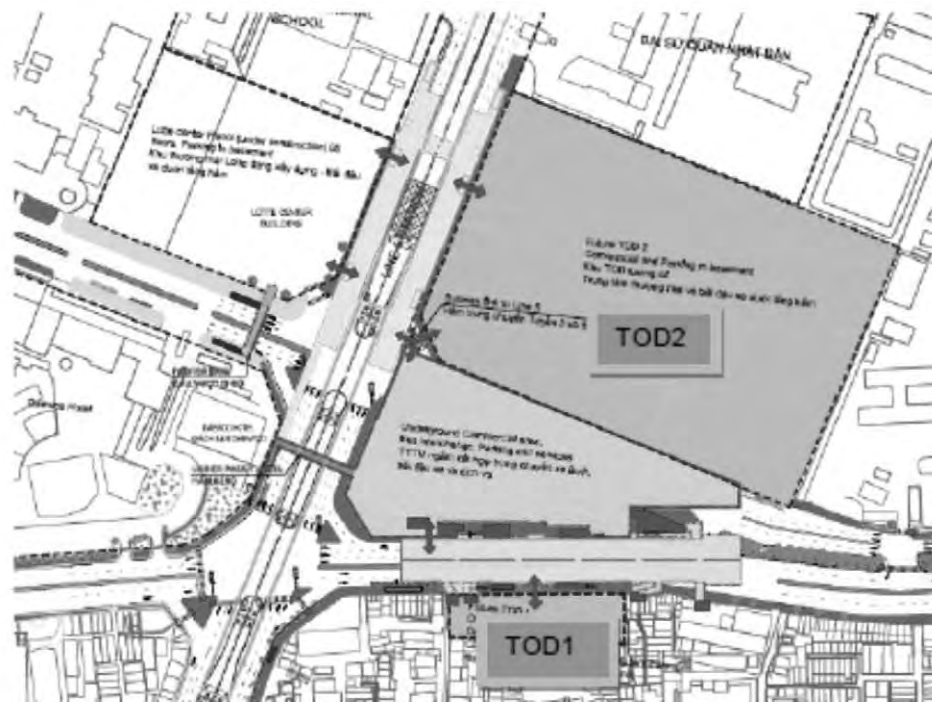
Future development concepts: (TOD oriented)

The report considers this is relevant to the future planning and the long-term overall proposals for the area with the aim to optimize the extent and orientation of the development of the areas surrounding the stations. TOD ideas for urban areas, urban center fringe and suburban areas.

For urban areas surrounding Cau Giay and Ngoc Khanh station, the proposed concepts include:

- + Propose construction of commercial traffic oriented development (TOD) surrounding station and propose a concept of the connection between the stations and the TOD zones to form a planning oriented development area. This area will attract passengers to use metro, and create good conditions for the development of area.
- + Propose multi-modal interchange in the future. These centers can include bus terminal and underground parking nearby the station.

Figure: Proposal of TOD areas in the future surrounding Ngoc Khanh station



- **Evaluation on current situation in Hanoi City**

HPC has policy accepting the proposal of connecting urban railway stations with commercial centers, residential areas, such as connecting S7 station (Chua Ha station) with 2nd floor of Discovery Complex commercial center, which will be convenient for passengers, their works and their entertainment activities, etc.

2. INTEGRATION AND IMPROVEMENT OF PUBLIC TRANSPORT SERVICE:

The purpose of this solution group is: to enhance the traveling demand, optimize the UR transport capacity, encourage passengers to use UR, reduce the cost of bus operation, etc.

Station integration:

Ensure easy and quick passange from one vehicle to another, direct, with minimum changes of levels and direction, spacious, well lit, well ventilated walkways, attractive displays and advertisements, no hidden spaces.

- **Evaluation on current situation in Hanoi City**

Has been mentioned in Decisions for approval of Technical design of UR stations by competent authorities.

Bus network integration

The report presented proposals for this solution, focusing on re-systemicalizing the bus network: changing, omitting routes and frequency of buses, to ensure accessibility and optimizing the transport capacity of UR.

- **Evaluation on current situation in Hanoi City**

HPC approved for the project of developing passenger public transport by bus in period of 2011-2015, vision to 2020, which is implemented by TRAMOC, and this project has mentioned about the integration with UR network.

In which, it is necessary to adjust bus line alignment of those relating to UR Line 3 such as bus line no. 32 (Nhon – Kim Ma section), omitting Cau Giay – Nhon section on bus line no. 20, changing bus line no. 50's alignment, etc.

Operation Service integration:

Schedules are coordinated so that passengers may interchange without waiting.

Taxi integration:

The integration of taxi system needs to be integrated as the best to public transport system (UR) such as allocating pick up/drop-off areas, facilities, signs, regular parking lines, without causing obstacles onto passengers' transportation and other vehicles.

Integrated Passenger information

This integration shall provide passengers with information, solutions of routes, fare of multi-mode services. Information about service and fares of all modes are together shown.

- **Evaluation on current situation in Hanoi City**

At present, TRANSERCO is coordinating with TRAMOC to allocate displays, LED showing information of lines, bus fare on buses or bus shelters for passengers to follow and update.

After UR commences its operation, the information of alignment, timetable, fare, etc. of public transport modes shall be displayed together.

Integrated brand-name development:

The whole public transport system such as vehicles, stations, information, advertisement, promotions – is uniformly branded.

- **Evaluation on current situation in Hanoi City**

The advertisement for using public transport in Hanoi has been implemented in recent years, especially for bus. TRAMOC has launched many campaigns promoting the use of bus by circulating free prints, bus routes to passengers in bus shelters, stations, fairs, etc.

For UR in the future, HPC shall surely assign DOT, MRB, Hanoi Metro, etc. to function this service promotion, etc.

Integrated ticketing system and fare

- The integration of ticketing system and fares are to pursue objectives: ensure that an integrated ticketing system, smart ticket vending system shall be developed for all public transport modes, aiming at encouraging the usage of public transport in Hanoi, reducing transport time for passengers.

- The report has provided experiences from elsewhere in the world, such as proposing a fare structure and optional fare level, ticket vending system and technology, institutions of fare management and integration, etc.

- **Evaluation on current situation in Hanoi City**

In 2013, HPC made Decision no. 5579/QĐ-UBND to approve for Plan on framework of e-ticket policy and technology applicable for public transport network in Hanoi. In addition, MRB is coordinating with concerned organizations to propose Fare Policy to HPC for its approval.

3. ASSISTANCE FOR CHANGING POLICY AND MANAGEMENT METHOD

Policies related to development of public transportation and transport management:

- Enhancement of institutional capacity of public transport, in which requiring establishment of Public Transport Management Authority (PTA) to unify common directions of transportation modes, fare policy, service supply and network accessing.
 - Setting up Fare policy framework and IC technology
 - strategies, policies and regulations on the management of parking yards
- **Evaluation on current situation in Hanoi City:** in the project to enhance institutional capacity in operating BRT lines and establishing PTA funded by WB to HPC, the necessity of establishment of PTA in the future has been mentioned.

II. URMT development project linked with urban development in Hanoi – The Socialist Republic of Vietnam (Line 1 + Line 2)

URMT development project integration with urban development in Hanoi is the project that Vietnam Government requested Japan Government to assist. JICA is the representative of the Japan Government to fund the projects with study areas of urban railway Line 1: Ngoc Hoi – Yen Vien and Urban railway Line 2 Nam Thang Long – Tran Hung Dao including 31 urban stations (in both phases). The project is directly studied, implemented and F/S prepared by the consultants, namely ALMEC and Nippon Koei.

The goal of the project is to improve competitiveness, optimize operation of the urban system, and promote passenger usage and urban development, creating new space as motivation to speed up society and economy to be more dynamic.

The report of the Project indicated urban development potentials linked with public transport (TOD) in Hanoi City. The TOD development orientation in Hanoi is appropriate, feasible for development context of Hanoi, attracting large numbers of passengers, and having a special meaning to make Hanoi become green and liveable city in the future. The report indicates the TOD development model in some cities such as San Francisco (USA), Munich (Germany), Curitiba (Brazil), and Tokyo (Japan) is well oriented and can be applied to company in Hanoi.

Contents of URMT development project linked with urban development in Hanoi:

1. **Urban railway development project linked with urban development that creates development form in accordance with public transport orientation (TOD) brings the following benefits for Hanoi:**
 - For community:
 - + Less usage of private modes

- + Travel capacity suitable with financial capacity and increase of transport means options
- + Effective and concentrated land usage
- For urban railway:
 - + Use land surrounding stations and attract many passengers to the stations
 - + Multi-modal interchange works
 - + Development of arranged urban railway corridors

2. Development orientation planning for stations of Line 1 and Line 2 to promote development of arranged urban railway corridors:

JICA project proposed orientation planning for 31 urban railway stations of line 1 and line 2. Orientation planning points out an idea for development and usage of land in the future, projects with feature of integral development. In addition, periodical development based on time and feasibility is proposed and considered carefully.

3. Detailed planning of the priority station area:

Detailed planning is made in 5 station areas, Gia Lam Station, Nam Cau Long Bien Station, Hang Dau Station, Ha Noi Station, Thong Nhat Station, Bach Khoa Station, Den Ngoc Son Station based on evaluation and study of the following criteria:

- Urban development potentials
- Station accessibility
- Transition
- Necessity of society and environment

4. Implementation scheme :

- To be implemented in compliance with the existing legal system and added new approaches. This is new legal and institutional scheme aiming at urban development integral with urban railway system, land re-adjust system and urban re-development.
- To be executed in the principle of sharing responsibilities and risks among the State (HPC), Vietnam Railways, private investors, community, public private partnership (PPP). In addition, it is necessary to have scheme for coordination among stage agencies.

Current situation and evaluation

- At present, urban railway project, Line 1 Yen Vien – Ngoc Hoi is till late implemented and progress delayed. In Notification No. 78/TB_VPCP in 2015 of Deputy Prime Minister Mr. Hoang Trung Hai requests HPC and MOT to early agree to the location of Hong River Railway Bridge of the project. In addition, the detailed design of phase 1 is completed; bidding for construction is not implemented yet.
- Urban railway project, the progress of Line 2 Nam Thang Long – Tran Hung Dao is also delayed for about 3 years. Increase of total investment amount is estimated to be up to 51,750 billion VND, increased by 164%, triple over the initial estimation. Currently, the project is under consideration for such increase of the total investment amount by an independent inspection hired by the Government and MOT.

- In the JCC's 2nd meeting on JICA Technical Assistant, the Vice Chairman of HPC has agreed to apply experience as well as model of Japan for some priority stations that meet conditions such as Giap Bat, Gia Lam and Ngoc Hoi. For urban stations alone, it is required to study and select location so as to limit maximally land acquisition and ensure sustainable development together with environmental sanitation. For suburban stations, parking areas will be exploited.

III. THE STUDY ON “OWNERSHIP AND USE OF MOTORCYCLE IN HANOI CITY” – 2014 TILL NOW:

The study on “Ownership and use of motorcycle in Hanoi City” is sponsored by WB and Australian NGO AID for HPC, which has been implemented since 2014.

This project aims to support HPC in the following goals:

- Identify the factors and provide better understanding on the ownership and use of motorcycles.
- Provide information that can assist authorities and regulators in issuance of reasonable policies for sustainable development of motorcycle.

The Study team has formed focus group and implemented surveys within the area of Hanoi City, from intersections, parking lots, pavements, etc. including various social classes, ages, gender such as bus riders, motorcycle riders, motorcycle taxi drivers, women, officials, etc.

The content of surveys focuses on the traveling habit of the people such as transport modes, transport time, waiting time in stops, stations, fee for transport, parking, fare of public transport, vehicles functions and transport service quality. Besides, there are surveys on intersections, parking situation on big streets, pavements.

Based on the result of surveys, the Study has collected data, information, and implemented analysis with incomes, study on data, existing regulations, accordingly, recommendations, proposals of potential model and policies applicable for reasonable development of motorcycle in Hanoi will be worked out.

Analysis results of surveys show that motorcycle is still a vehicle in favor of majority of people by its convenience and flexibility as well as low ownership and operation fee. Factors causing disadvantages of the motorcycle include low safety, environmental pollution, traffic jams and causing bad effects on public health, unsuitable to trip in long distance. As a result, the report has worked out solutions to optimize the advantages of use of motorcycle, to mitigate bad effects from the use of motorcycle or solutions to restrain fever increase of motorcycle.

In addition, the Study also proposes solutions for sustainable development, promoting the use of public transport in the City.

Some results of the Study have been compiled and proposed under the following proposals and recommendations:

Objectives	Proposed solutions	Evaluation of solutions in current situation
<p>Management on ownership and use of motorcycle</p>	<p>1. Ensure the thoroughness of intersections, the empty spaces on roads and safety by clear laning between motorcycle and cars, using signs, traffic signal system and especially propaganda to observe traffic regulation</p> <p>2. Better improve, restrict disadvantages of motorcycle such as low safety, causing traffic jams, environmental pollution, etc. by solutions to improve, supplement into regulations and enhance education and propaganda:</p> <p>- Improve the safety: promoting the role of propaganda to people, integrating deters and penalties. This is shown in the fact that people are compulsory to wear helmets while on road, penalizing if using mobilephones while on motorbike, riding motorbike in wrong lane, causing traffic jams, not observing traffic lights, etc.</p> <p>- Environmental improvement: having policies requesting domestic motorcycle manufacturers to strictly and early</p>	<p>1. At present, Hanoi has laned for cars and motorcycle on many streets such as Ba Trieu, Giai Phong, Kim Lien, etc. by lane painting system, signs system, and propaganda to integrate the method of reminding people with punishments in various cases of violation.</p> <p>2. Better improve, restrict disadvantages of motorcycle</p> <p>- This has been quite seriously implementing in Hanoi. However, in the future, it is necessary to broadly propagandise for people, integrating the penalty with stricter sanctions in order to further improve the awareness of traffic participants by using motorcycle.</p> <p>- At present, according to roadmap of VR, car and motorcycle manufacturers</p>

	<p>implement the usage of EURO 3 standards in manufacturing motorcycles, which can help to reduce half of emission gas. This has been evaluated as low cost for the society.</p> <p>In addition, not allow the operation of any vehicles which do not satisfy requirements on emission gas controlling.</p> <p>3. Having overall and orientation policies to control the fever development of motorcycle in the future when vehicle importat imposed shall be grastically reduced following WTO roadmap (In 2018, the ratio of motorcycle is 800 motorcycle/1000 people): Adjusting registration fee, road use fee, fuel tax, jams fee, parking fee, etc.</p> <p>4. Developing a system of policy tools for management over ownership and use of motorcycle in Hanoi</p> <ul style="list-style-type: none"> - Propose to change mainly on the use of the only certain fee to use various fees (fuel fee, parking fee, jams fee, etc.) - Methods to restrict the parking on pavements, walking routes. Parking will need fee payment, accordingly, the users of private vehicles shall need to consider parking fees when decising on their own trips. 	<p>and importers are requested to satisfy the least standards of Euro 3, possibly Euro 4 in 2017.</p> <p>1. At present, to control the fever development of motorcycle, the Government has promulgated various fees on the operation of vehicle such as registration fee, road use fee (50000-100000), fuel tax (3000d/littre) which has been adjusted.</p> <p>⇒ This solution also contributes to the development of public transport</p>
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	<ul style="list-style-type: none"> - Change regulations on parking fee, allowing paid parking in hour-based, maximumly mitigating the fixed fee. - Having legal regulations and education methods to propagandize in order to transfer public land fund into free parking lots. - Propagandize towards people to understand about fees to operate motorcycle not simply only fuel fee, parking fee, but also more seriously intangible fees (accidents, traffic jams, environmental pollution, healcare, etc.) <p>⇒ These solutions also contribute to promoting the use of public transport modes</p>	
<p>Promoting the role of public transport</p>	<p>1. Need to have methods better focusing on passengers group which are ready to transfer to public transport, other than other groups</p> <ul style="list-style-type: none"> - These include women, middle-age people, those who often need to transport in long distance. - Or high-income people but care much on the time, need quickness and good service quality of public transport. - Motorcycle riders who often need to transport in dusty, bad weather, etc. conditions on bad quality roads. <p>⇒ This provides a good viewpoint to select suitable transport modes.</p>	

	<p>2. Issue of Planning, Design, and Operation of public transport must be organized in clear and specific manner for success:</p> <ul style="list-style-type: none"> - Need a solution on integration: + Improve the integration among transport modes + Integrate fare level and fare system + Integrate, provide transport information for passengers <ul style="list-style-type: none"> - Improve the accessibility for passengers: + Improve the accessing paths to stops, train stations + Support by the role of “Motorcycle taxi” in public transport. + Need to prioritise and better support bus if traffic jams become more and more serious. 	
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VI. Mechanism and policy of Hanoi City in encouraging the usage of public transport system by bus:

Public passenger transport by bus plays an important, significant role in addressing the travel demand of the people, reducing traffic congestion, accidents, and reducing environmental pollution, contributing to the sustainable development of the capital.

Understanding the significance and importance, the Party, Government, HPC have issued several policies and mechanisms to encourage and promote the development of public transport by bus.

1. Several policies and mechanisms:

(1). Law on the Capital: promulgated in accordance with Resolution No. 25/2012/QH13 of the National Assembly, in which specifying common mechanisms:

Article 18. Development and management of transport

- The transport system in the capital shall be synchronously and modernly planned, constructed, and developed, ensuring the connection between the capital and the central-

affiliated cities and provinces in the capital area and in the whole country, conformable with the requirements for the socio-economic development, and ensuring the National defense and security; concentrate on the investment, and encourage the investment in the development of the transport infrastructure and the public transportation system in the capital.

- The People's Council of Hanoi city shall issue regulations on prioritize the development of the mass public transport system; encourage the investment in the construction and use of bus stations and car parks; apply high-technologies to the management and operation of the transport system.

(2). Decision No. 13/2015/QĐ-TTg dated 5 May 2015 on mechanism and policy to encourage development of public transport by bus:

- Accordingly, decision on mechanism and policy for planning, investment and development of infrastructure is as follows:

- + To prioritize the allocation of sufficient funds from the State budget for the formulation, regulation and implementation planning of public passenger transport by bus, with the targets in the plan including: the undertaken proportion of public passenger transport, land, solutions for connecting to other transport modes, the proportion of vehicles using clean energy and proportion of vehicles satisfying technical regulations on accessible transport;
- + To prioritize access to preferential loans: loans in official development aid (ODA) and preferential credit capital for investment in infrastructure serving public passenger transport by bus;
- + People's Committees of provinces and cities directly under the central government based on local resources to support interest rates of loan at credit institutions for investment projects in infrastructure construction of public transport by bus.
- Mechanism and policy to encourage investment in transport vehicles:
 - + To exempt from import tax on spare parts, components which can not be produced domestically for manufacturing and assembly of public transport vehicles by bus. To exempt from registration fees for vehicles for public passenger buses using clean energy.
 - + People's Committees of provinces and cities directly under the central government based on local resources to support loan interest rates at credit institutions for investment projects in public passenger transport mode by bus .
- Mechanism and policy to assist transport operation activities:
 - + People's Committees of provinces and cities directly under the central government based on local resources subsidize price of operation costs of public transport by bus. Priority is given to develop model of management center of public passenger transport by bus to monitor and manage the quality of services by bus in the locality.
- In addition, this Decision also prescribes mechanism and policy on subsidy for public transport users:
 - + People's Committees of provinces and cities directly under the central government based on local resource to subsidize users of public passenger transport by bus as follows: Free tickets for children under 6 age, the severely disables and the particularly severe disables; fare reduction for the user who have distribution to the revolution, the elderly, students, pupils who are Vietnamese.

(3). Circular No. 39/2003/TT-BTC dated April 29, 2003 of The Ministry of Finance guiding the financial mechanism applicable to enterprises of public passenger transportation by buses in urban centers

- Activities of public buses in urban areas as public service shall enjoy preferential policies on finance including: state-own enterprises providing public transport by bus; Parts of state-own enterprises providing public transport by bus; state-own enterprises running business activities involving in public transport by bus; other types of enterprises engaging in public transport by bus, such transport cooperatives, joint-venture companies, limited liability companies, joint-stock companies, etc.

- Activities of public passenger transport by bus shall enjoy preferential policies on land rent payment, road tolls and yard fees under the existing regulations and decisions by the competent authorities.

- State-own enterprises and other economic sectors to invest assets to participate in public passenger transport in the large urban areas shall enjoy investment preference and be assisted with post-investment interest.

- Activities of public passenger transport by bus in urban areas are not subject to VAT.

- Activities of public passenger transport by bus if fare revenues are not enough to cover the cost of public services, the People's Committee of province and cities under the central government shall be subsidized from local budgets. Annual subsidy level should cover reasonable expenses specified under current regime of the government.

- The state-own enterprises and other economic sectors is ordered by the Government to purchase public transport products. For purchasing products for public passenger transport, People committee of province or city shall sign or authorize the Department of Transportation to sign a contract with the public transport enterprise. If there are several enterprise participating in public transport on the same territory of the city, bidding shall be applied under current regulations of the Government.

(4). Resolution No. 03/2013/NQ-HDND dated 12 July 2013 of Hanoi People's Council regarding priority for development of public mass transport system; encouragement to invest, construct and exploit bus station, parking places for cars and motor vehicles; application of high technology in management and administration of transport:

a) Priority for public mass transport system:

- Priority for traffic organization

- Priority for innovation and improvement of public transport service quality:

+ Vehicles used in public transport must be modern and applied with advanced technologies

+ Priority for proposal for selection of new, high-quality means in transport services when bidding is hold to open a new bus route.

- Encouragement to use mass transport modes:

+ Users are subsidized appropriately

+ The city exempts public mass transport users from charge for country-contributed people, the disables, and children under 6 years only;

+ For public transport by bus and BRT, state fund shall support 50% of monthly ticket for pupils, students, the elders; support 30% of monthly ticket for officials, staffs of office building, enterprises out of industrial zone that buy monthly tickets in collective form.

- Mechanism, policies giving priority for development of public mass transport:

- + Budget supports 100% of road toll for public transport by bus, BRT

- + City's budget supports 50% of interest rate of loan with first five years for investment in infrastructure of public transport by bus and for procurement of buses in each project ...

b) Encouragement to invest in construction and operation bus station, parking yards for cars and other motor vehicles:

- Budget supports 100% of land leasing fee for 10 years from incurring of obligation to pay rent.

- To be allowed to borrow from the development investment fund of the city with preferential loans.

- City's budget supports 100% of import tax on imported equipment and technological lines to construct high-rise car park yard, underground car park yard.

- HPC approves ceiling prices for parking service, bus station service charges, parking rates in terminals to be suitable with each area, scale and nature of each project, ensuring payback and social security.

c) Application of high technologies in management and administration of transport system:

- Management and exploitation of transport infrastructure

- Organization and management of transport:

- + Development of roadmap and plans to apply high technology in management and administration of transport by using geographical informatics system (GPS) and scientific advance of internet... Step by step to develop the center like PTA, traffic light control center ...

- + Gradual development and improvement of a system of early warning information on traffic conditions; encouragement to install navigation equipment on vehicles

- + Development of plans on application of high technology in building automated toll system

- Management of transport operation:

- + To encourage transport enterprises applying high technologies to coordinate and control of transport activities and simultaneously to connect information with the management and transport operation center in the area.

- + Transport organizations and owners whose vehicles are equipped with journey monitoring devices are responsible to provide information on journey monitoring devices for traffic management and administration of the regulator.

- Implementation of several solutions for application of high technologies.

- + To organize trainings for high tech human resource to achieve international qualifications to accept and master high technologies in management and administration of transport and make plans to strengthen the capacity of regulator.

- + To enhance international cooperation in research, application and development of high technologies in the field of management and administration of transport.

- Mechanisms and policies to encourage the application of high technologies:

High-tech application in the management and administration of transportation is the content of the key scientific and technological program of the Capital.

2. A number of mechanisms and policies applicable to encourage the development of public passenger transport by bus in Hanoi:

- The decision of the HPC (Decision 45/QD-UB dated 29/6/2011) regarding consolidation of 4 companies into Transport and the Public Service Company (the predecessor of the Transerco) had created an organizational unity, the route network, management and administration, maximizing potential and available resources to accomplish large goals.
- The city's large initial investment is an important material prerequisite to comprehensively reform and improve the quality of public bus services, and to change traveling habits of people.
- For example: From 2001-2003, the state own enterprise of the City had invested 479.9 billion for public transport, the project on "Public transport investment vehicles " with the following portfolio:
 - + Purchase of 200 buses in Phase 1, 2001
 - + Purchase of 320 buses in Phase 2, 2002
 - + Receipt and transport of 50 Renault buses sponsored by France
 - + Purchase of equipment for bus management and operation
 - + Investment in upgrading the technical infrastructure of bus line
 - + Construction of bus maintenance workshop
 - + Purchase of equipment maintenance and repair
 - + Hiring experts and training operational personnel.

The project aimed to promote the leading role of stateown enterprises in the consolidation and rapid development of public buses in Hanoi, creating premise and market orientation for other economic sectors.

In the long term, the city's budget will support investment in building the technical infrastructure for public bus activities of the city. Investment in vehicle procurement and logistics service basis is investment responsibility of the units involved in public passenger transport. The city will support part of the interest rate for business loans or guarantee for foreign loans to purchase vehicles. The transport enterprise engaged in public transport prepares small projects to borrow and self pay in the course of business operation.

- To ensure adequate income that is attractive enough for employees to stick to the job and interested in improving the quality of passenger service.
- The consistent policy of the City of long-run subsidies for bus passengers are factor that ensures the sustainable development of public buses in the capital.
 - + Direct subsidies for public bus: allocate funds to directly subsidize based on the achieved passenger transport volume.

From 1992 - date, the HPC has a policy of direct subsidies for bus. Since the performance of the bus network increases, the subsidy per passenger 1 continuously decrease as follows:

In 2001, new buses were begun to be invested, therefore, cost of transportation increased, however, because the passenger did increase much, then subsidy per 1 passenger also increased. In 2002, bus passengers increased and the average level of subsidy for one passenger started to decrease compared to 2001. In 2004, after having acquired the habit of passengers, number of passenger increased rapidly, leading to subsidy level for 1 passenger reduction of more than a half, only VND500/passenger

-> When investment on vehicles to open new routes, it is accepted to acquire passenger habits with high subsidies. When the passenger habit is accuired, it will be more effective and subsidy is reduced rapidly.

+ Subsidy by the indirect method: through policies for businesses such as incentives, exemptions from VAT taxes and fees, parking and road tolls

- To improve the quality of services on the basis of a comprehensive innovation in combination with propaganda about the benefits using bus is the decisive factor to increase the rate of bus users.
- About the implementation method: It is agreed on guidelines – Development of detailed implemetation plan – Strong and deep awareness to workers – Close instruction of implementation - Follow the pilot model - Learning timely - Replication of the model is the success lesson.

CONCLUSION OF CHAPTER 2

In Chapter 2, the Report has concentrated into introducing about several outstanding projects of technical assistance for Line 1, Line 2 Projects funded by JICA, Line 3 project funded by ADB and the Program on management of ownership and use of motorcycles in Hanoi City funded by WB; some policies of the Government and the City for development of public bus etc. Projects have given out various solutions, approaching methods helping HPC to orient and propose policies in compliant with main objective which is to promote the development of public passenger transport, encouraging people to use urban railway system.

The below is summary of solutions, policies which have been proposed in above-mentioned projects, as well as the implementation status, action plan of Hanoi City till current timing, in comparison to experience in promotion of using public transport modes in the world, which has been mentioned in Chapter 1. This will help HPC to know which solutions have not been applied for consideration of pilot application in the City, and which solutions have been applied in the City without clear effectiveness in encouragement and increase of the number of passengers using public transport.

IMPLEMENTING STATUS OF POLICIES/METHODS TO ENCOURAGE THE USE OF PUBLIC TRANSPORT IN HANOI CITY						
POLICY GROUP	DESCRIPTION	SPECIFIC POLICIES/METHODS	CITIES APPLYING	Encouraging methods for the use of public transport (Urban railway) in Hanoi City		
				Under study (Yet applied)	Prepare to apply	Already applied
GROUP 1		Integrating into one regulator which managing and organizing public transport for all vehicles (bus, urban railway, BRT, etc.) in strategy planning, planning, balancing and maintaining budget for development of public transport.	European countries, North America, Japan, Singapore.	✓		
GROUP 2 (TOD)	Developing the area in the future	Planning to organize UR stations into a system of commercial services, industries, offices, etc with high density development within the distance of 20 minutes walking, in the radius of 0.4-0.8km	Big cities in Japan, Bangkok, Australia		✓	
	Station accessing services with “On street vehicles”	Design of bus services, bus stations, waiting shelters for passengers			✓	
		Provide 2-wheel vehicles parking lots (motorbikes, bicycles)			✓	
		Provide parking areas for motorbike taxi and taxi nearby stations			✓	
		Provide positions to stop and dropping passengers off for vehicles, which should be near to entrance/exit of stations without causing traffic obstacles			✓	
	Station accessing services for pedestrians	Provide the space for pedestrians, remove obstacles on pavements which may obstruct walking paths				✓
		Improve, upgrade the pavements, curbs, accessing corner to stations. Install reasonable accessing paths for the disabled to enter stations				✓

		Provide, ensure sufficient lightening system, trees, water drainage, lane printer, signs, etc. to help pedestrians better accessing the station area.				✓	
		Need to supplement the system of flyovers, underpass for passengers in areas where the density of vehicles is high				✓	
	Organizing the traffic surrounding stations	Select optimal plans to well organize the traffic surrounding stations, creating priorities for public transport vehicles such as Bus, BRT to access stations: Laning from distance and surrounding stations to avoid traffic jams; Establish prioritized traffic system such as prioritized signs, signal lights, laning for public transport vehicles to conveniently access stations			✓		
	Multi-modal interchange	Design an area where passengers can interchange from UR with other public transport vehicles. Interchange, connecting services such as bridge (tunnel), waiting shelters, indoor walking paths, roofs, commercial areas need to be reasonably arranged, ensuring convenience of passengers			✓		
GROUP 3a Management of traveling demand (PUSH)	Controlling the increase of private transport modes (automobiles, motorbikes)	Imposing various tax and fees: import tax, registration tax, vehicle using tax, annual road tax	Many countries in the world			✓	
		Provide quota for automobiles, motorbikes, accordingly, people must engage in auction or purchase the right of vehicle using.	Singapore	✓			
		People those want to own a car shall need to prove that they have area to park their cars.		✓			
		Apply the regulation on life cycle of motorbikes				✓	
	Restrict, reduce the use of private vehicles	Fuel tax	USA				✓
		Urban transport fee	Singapore, Stockhom	✓			

	Charge for parking in urban area	Collect parking fee These kinds of tax, fee shall encourage enterprises to provide parking areas, and for users, these will encourage them to use replacing vehicles.	Cities in the world			✓
	Prohibite private transport vehicles	Prohibit some transport vehicles to enter city center during peak hours	London			✓
		Restrict transport vehicles by register number plate	China (Shanghai, Guangzhou, etc.), Mexico, Sao Paolo, Manila	✓		
GROUP 3b Management of transport demand (PULL)	Improve public transport passenger services	UR and bus lines are extended, the space is extended, the service frequency is increased, in order to ensure the demand of public transport	Cities in the world			✓
		Prioritizing supporting passenger transport modes which have high space occupation rate such as separated lane for bus, prioritized signals for bus, and mitigate any delay for public transport modes	London (UK), Singapore			✓
		Improve, ensure facilities for passengers in stations, bus shelters with roofs, seats and WC, etc.	Curitiba (Brazil), Guangzhou (China), Bogota (Colombia), Munich (Germany)			✓
		Integrate the system and fare of public transport, need to have reasonable policy to integrate the ticket system of public transport vehicles, creating a convenient payment system by using smart e-ticket.	Popular in the world		✓	

		Integrate passenger information, improve promotion programs: provide passengers with information, alternatives of routes, fare level of public transport services				✓
Improve the services for bicycle users	Construct parking lots, separated lane for bicycles	Map, direction signs for bicycle users	Cambridge, London (UK), Copenhagen (Denmark)	✓		
	Public bicycle leasing service			✓		
		Big cities in Europe, Osaka (Japan)	✓			
Encourage, support public transport users (Urban railways).	This is method with which Transport organizer can pull, encourage enterprises to join in the transport of their employees. Enterprises must pay their employees an amount of money if those employees do not use free parking area in the enterprise. With this amount of allowances, employees can pay to ride on common bus or by public transport (Metro, bus, BRT)		Brussel (Bi), USA, UK, Canada, New Zealand...	✓		
	Compulsory contribution of enterprises to urban transport (including public transport: Urban railway): specifically, a level of urban transport tax is stipulated for employers, this tax rate shall be contributed to the development of city's public transport system.		Entire France	✓		
	Indirectly support urban transport via subsidizing users not services. Enterprises, state administration organizations support their employees in purchasing monthly public transport ticket, or employers can purchase transport fee/tickets at public transport operators or transfer to transport card of their employees.		Brasil, France	✓		

		Have a reasonable ticket policy (fare type, fare structure, fare level), fare subsidy for public transport users, especially students, workers, officers, the disabled, the retirements, etc.	European countries, USA, China, South East Asian countries, etc.			✓
	Propagandize, enhance the awareness of people about public transport by urban railways	Methods of promoting public transport services, provide information, reasonable routes on mass media,; launch campaigns of encouraging the use of public transport, bicycle day, no-car day.	Bogota (Colombia), Zurich (Switzerland) with no-car campaign, Bavaria State with bicycle day	✓		

CHAPTER 3 : EVALUATION AND PROPOSAL OF RESPONSIBILITIES OF REGULATORS IN ENCOURAGING THE USE OF URBAN RAILWAY IN HANOI CITY

A. Background:

Chapter 1 of this report has studied and compiled on policies, experiences of big cities in the world about public transport use encouragement. In Chapter 2, the Report focused on updating, compiling programs, projects and policies for encouraging the development of sustainable public transport system, including urban railways, in Hanoi City.

According to international experiences, a public transport organization shall be in charge of the entire public transport system in one region/city. As a result, all public transport system related policies shall be made in quick, independent and modification easy manner. However, the management institution for public transport in Hanoi in particular, and in Vietnam in general, is quite complicated with interactive responsibility constraints: in central level is MOT, in local level is MOT, and other Departments, etc. As a result, the objective of Chapter 3 is to clarify and evaluate the roles, responsibilities of governmental organizations in proposing, advising and organizing the implementation of programs, policies encouraging the use of public transport system – urban railway in Hanoi City.

The study method of this Chapter focuses on evaluation, analysis of each policy, method of encouraging the use of public transport which are under the current authority and responsibilities of concerned departments, as well as explaining on the implementation and coordination mechanism.

B. Evaluation of responsibilities of UR regulators in solutions to encourage the use of urban railways:

I./ Solutions to strengthen institutional capacity in public transport (Establishment of PTA)

The benefits of forming a PTA are mentioned in Chapter 1.

In Hanoi, WB is coordinating with HPC to implement a project relating to the establishment of PTA, but this issue needs to be implemented following a roadmap and a competitive period to further complete current management institution of public transport. However, important steps in establishing PTA have been realized, HPC established Steering committee on the establishment of Multi-modal public transport organization with the participation of leaders of HPC, departments such as DOT, MRB, DOF, HAPI, TRAMOC, TRANSERCO, etc.

In the future, to successfully establish PTA, it is proposed to implement:

- Build up, strengthen the capacity of MRB to become Urban railway regulator of Hanoi City, which is responsible for managing, coordinating with departments and organizations in advising the city about state management over urban railways (fare policy, service quality, etc.)

- Strengthen the capacity of TRAMOC (under DOT): completing the function of planning and managing the network, constructing and completing BRT system, etc.

Selecting to incorporate public transport regulators (MRB, TRAMOC) shall help HPC to have a common strategic vision, mutually supplementing each other during management of multi-modal network right from the planning stage and network planning. As a result, each vehicle (bus, BRT, metro) shall be used at its most effectiveness for each region. Transport services with lower loading capacity can connect to those with higher capacity.

HPC shall need to coordinate and instruct, it is in need of a political determination and the vision of leaders and officers of Regulators in forming a common regulating organization for public transport (PTA) for the sake of citizens' traveling benefits. The establishment of PTA needs to be carefully discussed with the participation of departments and organizations, and consultation from international organizations, before People's Council adopts the resolution on its establishment.

II./ Solution group of developing the urban area with public transport orientation (TOD)

1. Development of the area in the future

Master plan of expanded area till 2030 and vision to 2050 includes recommendations appropriate to the role of Hanoi as capital city of the nation:

- Developing modern and integrated transport infrastructure;
- Constructing urban areas with public transport orientation;
- Developing a network of MRT to support the urban development;
- Developing all kinds of public transport, gradually reducing the use of private transport modes; encouraging the use of transport modes utilizing clean fuels;
- Building up integrated public transport system

In conclusion, HPC is the highest authority to organize activities and implement master plans and issues relating to the development of public transport incorporating the urban development. To develop urban areas surrounding urban railway stations, responsibilities of related regulators are proposed as following:

- HAUPA: instructing project owner (MRB or other organization as project owner) to make layout plans and station architecture; evaluating plans.
- Other project owners directly work with DoNRE regarding land use demand for development projects surrounding station area, are guided for implementing report on environment impacts assessment in accordance with regulations for DoNRE to compile and report to HPC.

2. Station accessing services with “On-street vehicles”:

DOT: instruct the planning of station accessing area for transport modes; Evaluate, approve for station accessing area of transport modes in the locality such as bicycle, motorbike, bus, taxi parking lots, etc. to ensure safety for passengers and transport modes when travelling and operating in accessing areas.

3. Station accessing service for pedestrians:

DOT is regulator for transport infrastructures in Hanoi City, including bridges, pavements, streets, median strip, road signs system, traffic lights, underpasses for passengers, which has been stipulated in Decision no. 17/2008/QĐ-UBND regarding functions, responsibilities and authorities of DPT.

- Thus, DOT is responsible for ensuring safety corridor for pedestrians, organizing monitoring and strictly dealing with any occupation to road bed, pavements by violating individuals or organizations; Organizing to improve the pavements, trees, urban landscape, etc.
- The Police will coordinate with PCs of districts: to organize activities avoiding any illegal occupation to pavements which affects the travelling of pedestrians.

4. Transport organizing method: establish prioritized transport systems such as prioritized signal lights, signs, laning for public transport modes to access:

DOT is responsible for advising HPC to promulgate specific methods such as laning of transport modes on big streets, building up separated lane for buses, installing prioritized signal lights. In addition, DOT also implements projects relating to improving public passenger transport such as project for BRT, etc.

- To ensure safety and mitigate traffic congestion, HPC instructed city's organizations, including DOT which is the main organization to re-lane the transport system, prohibit and minimize the operation of trucks, taxi during rush hours, utilizing warning lights and lights, laning from distance. In addition, there are penalties for vehicles violating the laning instruction.

5. Multi-modal transit:

HAUPA: organization which instructs, evaluates the layout planning and architecture design trung chuyên giữa các tuyến ĐSĐT, giữa ĐSĐT với phương thức khác.

DOT coordinates with HAUPA during the planning plane and designing of the UR transit area, presides over issues relating to bus, BRT systems, and parking lots, etc.

III./ Solution group of Traveling demand – PUSH:

Traffic congestion and traffic accidents, environmental pollution are problems affecting on the sustainable development of Hanoi capital city area. The main reason causing those problems has been clearly mentioned in Chapter 1, i.e. fever increase of private vehicles such as automobiles, motorbikes. Ministries, boards and HPC as well as related functional organizations have worked out various solutions, plans to mitigate and control the increase of private vehicles, especially in central urban areas in such big cities as Hanoi.

1. Controlling the increase of private vehicles (automobiles, motorbikes):

- a) Optimal method that Regulator can apply to control the increase of private vehicles is the application of policies relating to tax, fees for vehicle importers and users. This can adjust the consumption of people as well as increasing the input for the State budget.

MOF is an organization under the Government which implementing the State management functions of tax, fees, etc. In which, MOF shall precise, instruct related organizations to develop and promulgate the basis for calculating, and calculation methods for tax, fees for transport modes such as motorbike. For import tax, MOF has stipulated the level in Circular 79/2009/TT-BTC dated 20/04/2009 regulation on import tax of automobiles and motorbikes, or Circular 64/2009/TT-BTC detailing and guiding the execution of Decree 26/2009/NĐ-CP by the Government regarding special consumption tax. Road use fee has been prescribed at Circular 133/2014/TT-BTC instructing the collection, management and usage of road use fees for vehicles.

Together with regulations on tax and fee management by MOF, it is possible to totally control and mitigate the quantity of operating vehicles or imported components for automobiles, motorbikes.

However, in such big cities as Hanoi and HCMC, City's authorities also implemented methods to mitigate the operation of newly registered individual vehicles: those are registration fees, vehicles using fees (registration tax) phí trước bạ. DOF and DOT shall advice to HPC about the fee level for registration and usage of vehicles before reaching adoption by Resolution of City People's Council (the fee level ranges from 10-12%). If the City wants to mitigate the increase of private transport modes, traffic congestion and environment pollution, the method of adjusting registration fee is often used. In addition, City People's council shall issue Resolution on collecting road fee for motorbike (100,000 - 150,000/unit/year), HPC shall execute the Resolution, make decision to assign PCs of commune, towns levels to collect this fee. Traffic police of the City shall check and monitor the fee payment by vehicle owners.

b) Method of providing annual quota for motorbikes:

c) This method has not ever been applied in Vietnam, but has been developed and proposed to HPC and HCMC PC for consideration.

DOT is the organization proposing HCMC PC to allocate quota for vehicle operation on the basis of current situation and the annual development of transport infrastructure in the city. DOT, in coordination with DOF, shall propose the auction for the right of owning private vehicles and the owner shall pay a certain amount of money for the operation of the vehicle. In addition, to gain the right of participating the auction, DOT shall require participants to prove sufficient space for private vehicle parking in urban area. (The Plan on "Plan to develop public transport system in the city till 2025 - HCMC).

d) Applying the regulation on use life for automobiles, motorbikes:

The application of regulation on use life for automobiles and motorbikes is necessary, which aims at reducing the environment pollution, ensuring traffic safety and vehicle density on streets.

- Vietnam Register, functional organization of MOT in management of vehicle quality, assists MOT in instructing, guiding and checking the operation of motored vehicles registration.

- DOT, in coordination with Vietnam Register, shall instruct local motored register organizations, Inspectorate of DOT, in coordination with Traffic Police department, shall monitor, check and manage use life expired vehicles.

e) *Urban traffic fee (Congestion-avoiding fee when entering city center)*

f) Urban traffic fee is a method to control vehicles entering city center, which can dissatisfy vehicle owners by fees collected when going through check points. Thus, it has important meaning in reducing the operation of private transport modes.

g) However, the implementation is not easy since it affects the traveling, culture, society and economy of the people. For example, in Sweden, it is required to get 171 agreement / 137 blank votes in the highest legislative organization - the Parliament- for adoption. Besides, public polling is also needed, thus, propaganda tools are necessary for people to get comprehensive support from the society.

In Vietnam, urban transport fee (fee to mitigate transport vehicles entering city center) should be proposed by a Plan of MOT suitable to its functions of submitting Plans, projects, policies for developing MOT as assigned by the Government and Prime Minister. Ministries, boards and PCs shall contribute opinions. Finally, this can be approved by a Decision of Prime Minister. However, to implement this, a clear, long-term roadmap is needed, ensuring the survey on actual traveling demand of the people, managing the demand and settling in each certain area, and completing replacing public transport system.

- Accordingly, MOT is responsible for **regulating** the fee collecting for automobiles (based on the number of seats, and car types), motorbikes, etc. It is possible to exempt those under public organizations, police, defence, etc. MOF shall stipulate the fee level.

- HPC is responsible for stipulating the timing, area and method of fee collecting, but it is not allowed to be more than level approved by MOF. DOT is responsible for supporting HPC in the implementation of above activities, coordinating with Traffic Police to control the security and order at fee collecting points.

2. Regulation on vehicle parking in the city:

One of methods to mitigate the usage of private transport vehicles is to collect the fee for using parking lots on pavements, road bed.

DOT, with designated responsibilities and authorities, shall be organization to evaluate conditions to license or revoke license on car, motorbike keeping in the city as regulations. In addition, DOT submits HPC to propose prohibited streets for types of vehicles or prohibiting time, etc. DOT (Inspectorate of DOT) and the traffic police shall check and handle with violations on stopping and parking on prohibited streets as regulations.

+ DOT shall be responsible for constructing park and go areas in metro stations and transit stations.

+ DOT shall coordinate with DOF to study and propose HPC to regulate the fee for time-based car parking, in order to mitigate the use of private cars, the more the car parks, the more its owner will need to pay.

3. Control and mitigate the number of cars by separating odd/even number plates:

The control and mitigation of cars by separating odd/even number plates method is not new to various big cities in the world. But, in Vietnam, it has not been applied and a reasonable roadmap is in need of. Accordingly, those carrying even number plates (which has ending number of 0, 2, 4, 6, 8) shall only be allowed to enter city center on even days (Monday, Wednesday and Friday). While, those carrying odd number plates (1, 3, 5, 7, 9) shall be allowed to enter city center during odd days (Tuesday, Thursday, Saturday). Only on Sunday, all cars are permitted to operate.

However, to implement this measure, it is necessary to take socio-economic feature of the City into consideration to realize it in practice.

- Need to improve public transport system integrally and modernly to meet the traveling demand of people, making sure that people will use public transport system in days when they are not allowed to use their personal vehicles based on plate number.
- To improve infrastructure for application of this policy. It is required to construct transitional parking yards in surrounding areas to enable people to park their personal vehicles and continue using public transport modes to enter the center area.
- Application of odd and even number plate may cause some disadvantages for business and traveling of people and force them to have their countermeasure. For example, people or enterprise may buy more private vehicles for both odd and even number plates, accordingly increasing a number of private modes and traffic congestion. In addition, case of using fake number plate may increase to illegally use to counter against competence agencies; therefore, the situation is not improved.

Thus, what the City should do is to propagandize and raise awareness of the people for their understanding about negative things caused by using many personal vehicles and necessity to apply this measure.

- Application of odd and even number plate should accompany with sanction measure of law. It is necessary to study carefully before submitting to the Government to avoid negative reactions and dissatisfied feelings of the people.

Application of odd and even number plate should invest in installation of equipment system including camera, monitor gate, controlling center, force of polices ... and should prepare a large budge from the City. Therefore, study should be conducted properly to apply this measure.

DOT shall advise and propose HPC to submit City People's Council for adoption of this policy.. Based on road map and possibility to complete infrastructure, public transport system of the City is gradually improved (bus system operates stably and urban railway lines 2A, 3, 2, and 1 will be put into operation), people's awareness is raised to understand the importance in prevention of traffic congestion and accidents, then effectiveness is achieved.

IV./ Solution group of Traveling demand management – PULL:

With regard to this solution group, the purpose is to increase the attractiveness of public transport modes for citizens, encouraging people to use public transport via supporting policies and propaganda.

1. Improving public transport services (bus, BRT, UR)

Public transport network in the city includes bus, BRT and UR. Thus, to synchronously and effectively improve public transport service, close coordination of public transport regulators in the city is needed: DOT (common management on public transport in the city), TRAMOC (under DOT, regulator of public transport by bus), MRB (UR regulator)

- DOT evaluates train operation plan of UR Company, appropriate to actual resources as well as the demand of passengers. To improve the provision of UR services, DOT enhances the monitoring, inspecting, and requests the operator to provide the services as schedule, ensuring the quality as regulations. Enhancing the survey on opinions of passengers to request the operator to improve its service quality. If necessary, proposal is made for resources in order to improve the quality of passenger transport service for the operator.

- TRAMOC (under DOT): this is organization managing the bus network in the city, which was established in accordance with Decision no. 1112/QĐ-UBND dated 06/10/2008 by HPC. On 16/06/2009, the decision 764/QĐ-GTVT was issued by DOT to re-determine the functions, responsibilities, organization of the system and officers in TRAMOC.

+ TRAMOC develops the plan and diagram for bus lines monthly, quarterly and annually. Pursuant to traveling demand of the people, chairing and coordinating with functional departments of DOT (Transport management department) and bus companies to propose Director of DOT to promulgate lines, line alignment, service quality on bus lines.

+ TRAMOC enhances the inspection and monitoring bus operators in terms of their observation to regulations, rules in bus public transport by the Government, HPC and DOT.

+ TRAMOC develops the plans and strategy of developing public transport by bus following standards and allocation of bus participating in providing public transport service appropriate to each development stage of the urban area, in order to satisfy the traveling demand of the people and ensure urban environment hygiene.

2. Integration of public transport system and fare: Need suitable policy to integrate the ticket system for public transport vehicles, creating a convenient fare payment by using smart card.

Regarding this issue, on 13/09/2013 HPC made Decision no. 5579/QĐ-UBND regarding the approval for the Plan on technology and policy framework of e-ticket for public transport in Hanoi City. Accordingly:

- DOT shall chair and execute state management over the e-ticket system, advising HPC to promulgate specific regulation to implement that Framework. Coordinate and instruct project owners during the implementation of ticket components under projects of developing public transport in the city

- Department of Information and Communication: responsible for evaluating, checking the ticket system design of public transport development projects, ensuring the interoperability.

- Department of Science and Technology: Providing evaluation comments for ticket system used in public transport network in term of technology.

- Department of Finance: Promulgate documents specifically guiding the management over revenue, revenue allocation and subsidy policies for public transport lines using e-ticket

- The Owners of urban railway construction investment project; public transport operators: to observe stipulations in the Technology and Policy Framework.

3. Passenger information integration and improvement of public transportation marketing system:

At present, Transerco coordinate with TRAMOC (DOT) to arrange screen and led light to display information of the line and fare price in buses, waiting place for passengers to get and update information.

Promotion to use public transportation in Hanoi has been implemented for many years, especially for bus transportation. TRAMOC launched many promoting movements for bus usage in free-of-charge publications and schedules handing to the customers at the bus stations, bus stops, and fair exhibition in Hanoi City.

For urban railway transportation in the future, DOT is proposed to chair and coordinate with the urban railway operation and maintenance unit to implement information integration about train operation (train time schedule, frequency, station map, service time, fares, ticket type, advertisement and other information) at the stations, maps, kiosks, inside the trains), schools, offices, bus stations etc.

4. Service improvement for bicyclers:

- a) Construction of parking areas and lanes separately for bicycles; Provision of map. Sign boards and instructions for bicyclers

DOT with its prescribed functions and power submit to HPC the projects to construct parking yards for bicycles and lanes only for bicycles. However, DOT should study and survey carefully for construction of bicycle lanes because private mode density per 1km street is high. Therefore, construction of bicycle lane shall narrow lanes for cars and bike and pavement for pedestrians. Lane separation for bicycles shall ensure paint striping, fence or staking for lanes.

- Coordination with traffic public polices to instruct, check and deal with other transport modes entering the bicycle lanes in accordance with provisions of laws.

- Coordination with urban railway project owners to construct parking lots in urban railway stations, to check location and technical designs of bicycle parking lots.

- b) Pilot services of bicycles for rent

In order for congestion prevention and traffic safety assurance and sustainable urban development, the Prime Minister instructed HPC and central cities to coordinate with MOT to develop, approve and implement pilot bicycle service development plan in the center areas of the city in the period of 2013 -2015.

Accordingly, HPC assigned DOT to preside over and coordinate with ministries and departments to develop pilot bicycle service development plan in the center areas of the city.

+ Department of industry and commerce implements the plan to manufacture and consume bicycles in order to encourage public transportation and reduce congestion, save fuel and reduce environmental pollution. (For example, support for bicycle manufacturers and traders and subsidy for those who buy bicycles for daily travel in the city...)

5. *Policies to encourage and support passengers in using public transport (Urban railway).*

a) Indirect support for public transport thru funding the users, not services

HPC needs methods to appeal the employers to participate in traveling matter, encourage enterprises to think about responsibility to improve traveling conditions of staffs to enterprises.

- HPC assigns DOT to preside over and coordinate with MRB, bus and urban railway operators, coordinate and cooperate with enterprises and state administrative agencies that use many employees in the city for example:

+ HPC creates favorable conditions and mechanisms to encourage businesses and state administrative agencies to use their car park business to be parking spots for lease. Those employees who do not use private vehicles in the car park will be supported an amount which will be used to buy tickets of public transport facilities.

+ Encouraging businesses and state administrative agencies to support monthly travel allowances for travel expenses by monthly public transport ticket cards for workers who do not used motorcycles, private cars in the parking areas of these agencies (implementation shall be more compulsory for enterprises and departments under HPC).

In 2008, DOT advised HPC to decide on support for civil servants and official who travel to work like setting up bus line with subsidy, free of charge for civil servants and officials working in departments of the City, reducing civil servants and official using private vehicles for traveling to work and reducing travelling expenses.

+ DOT presides over and works with bus, urban railway and BRT operators to create most favor to provide monthly public transport cards right at the enterprises and state administrative agencies without coming to the ticket selling places.

+ It is suggested to the units using employees to apply expense-return policies to those who use public transport mode for traveling trips rather than traveling by cars (taxi, coach)..

Currently, the infrastructure for urban transport as urban railway, BRT, bus, urban road infrastructure, etc. of the city is still under development. Therefore, much more time is required to encourage enterprises and business organizations in the area to voluntarily contribute to traveling of workers by public transport. HPC is not yet able to use coercive measures for enterprises, economic organizations. However, for state enterprises, the business and administrative bodies (departments and agencies) under HPC, DOT is in collaboration with MRB to advise city leaders to instruct and notify to request enterprise leaders, directors of the city departments to implement measures to support, participate in

public transport traveling of workers, and to inform the result to DOT for making report to HPC.

b) Compulsory participation of the city's enterprises in public transport matter:

Concretely, an urban transport tax level is prescribed for employers. Such tax will contribute to the development of the city public transport system. Tax imposed on the total payroll of the enterprises ranges from 1.4% to 2.6% of total payroll. France is very successful with this policy because its state agencies considered that enterprises in the regions has benefited greatly from the public transport network.

Enterprises in Hanoi city in particular and enterprises in the country general, that are mainly small and medium sized enterprises with low capital and profit scale, and just experienced world economic crisis, should be supported by development policies of the government. Therefore, considering the current situation, application of urban transport tax to enterprises is not feasible and taken more time for consideration and decision. The most suitable time to start studying is when public transport management agency (PTA) is established; public transport systems and other transport infrastructure develop comprehensively and modernly, creating leverage for development of enterprises. Meanwhile, propagandizing and convincing the society and enterprises will be easier and more feasible.

However, due to the nature of the national capital, where attracts many social investment, human resources from the nation and foreign countries, HPC should study and learn about application of urban transportation tax to enterprises from the experience of foreign countries like France. It is necessary to implement through a scheme with the chairmanship of PTA in the future, with opinion contributions of the ministries and the government for consideration and finally discussed and approved by the National Assembly of the Socialist Republic of Vietnam.

c) Appropriate fare policy (tickets, ticket structure, fares), subsidy to passengers using public transport (urban railway) especially students, workers, civil servants, the disable and the retirees, etc.

Policies and mechanisms to support the people using public transport are very interested in by the State and have been implemented to share traveling costs for people

Currently, in order to encourage the development of public transport, the Prime Minister issued Decision No. 13/2015/QĐ-TTg dated 05 May 2015 prescribing mechanisms and policies on subsidies for use of public transport services:

- Free tickets for children under 6 years of old, the severe disables and especially severe disabled persons.
- Reducing fare price for people who have distribution to the revolution, the elderly, students, pupils who are citizens of Vietnam

Accordingly, HPC should implement:

- + To assign HAPI to chair and work with DOT, DOF to review and balance annual budget to develop public transport. To arrange local budget in the yearly plan to partially or total assist travel expense and service price in bus public transport.

+ DOT coordinates with DOF, HAPI and operators to propose fare policy with fare structure and fare types suitable with travelling of people, suitable fare price compared to other transport modes and with subsidy for transport to encourage people to use.

+ DOT coordinates with DOLISA to issue regulations on the people subject to assistance or remission of fare for usage of public transport (the poor, students, pupils, the disable, the war invalids, the elders.)

d) Probandization and increase of awareness of people about public transport, especially urban railway – new transport mode

- Annually, DOT makes plan to arrange budget for information and communication aiming at encouraging people to use urban railway transport

- DOT presides over and coordinates with Department of information and telecommunication, Department of Education and Training, Safety and Traffic Board of the City in providing information and communication to encourage people using urban railway transport.

CHAPTER'S CONCLUSION:

Chapter 3 has studied on the responsibilities, participation and coordination of concerned regulators in promoting and encouraging the use of public transport system, including UR network.

For policies/methods of encouragement have been implemented in Hanoi, the study has worked out the responsibilities of main organizations, and mechanism of coordination for implementation. For policies/methods which are under studies without application in Hanoi, the report has proposed the responsibilities of regulators, roles and methods of execution, coordinating organizations in order to apply policies in reasonable and feasible manners.

TABLE OF EVALUATING RESPONSIBILITIES OF REGULATORS IN PROPOSING POLICY TO ENCOURAGE THE USE OF PUBLIC TRANSPORT (URBAN RAILWAY)

○: Coordinating, contributing comments

●: Mainly in charge

POLICY GROUP	DESCRIPTION	SPECIFIC POLICIES/METHODS	Evaluating responsibilities, roles of Regulators (Vietnam) in proposing policy to encourage the use of public transport (urban railway)						Remarks (Other Ministries, Departments, organizations...)	
			Central organizations			HPC				
			MOT	MOF	Other Ministries	DOT	DOF	Other Departments		
GROUP 1		Integrating into one regulator which managing and organizing public transport for all vehicles (bus, urban railway, BRT, etc.) in strategy planning, planning, balancing and maintaining budget for development of public transport.				○			○	Need contribution from Departments and boards, consultation of advanced countries before the Resolution is adopted by City People's Council
GROUP 2 (TOD)	Developing the area in the future	Planning to organize UR stations into a system of commercial services, industries, offices, etc with high density development within the distance of 20 minutes walking, in the radius of 0.4-0.8km							●	HAUPA takes main responsibility

Station accessing services with “On street vehicles”	Design of bus services, bus stations, waiting shelters for passengers				●			
	Provide 2-wheel vehicles parking lots (motorbikes, bicycles)				●			
	Provide parking areas for motorbike taxi and taxi nearby stations				●			
	Provide positions to stop and dropping passengers off for vehicles, which should be near to entrance/exit of stations without causing traffic obstacles				●			
Station accessing services for pedestrians	Provide the space for pedestrians, remove obstacles on pavements which may obstruct walking paths				●		○	Hanoi Police Department (Traffic police, district police) coordinate to handle with violations to road bed and pavements for pedestrians
	Improve, upgrade the pavements, curbs, accessing corner to stations. Install reasonable accessing paths for the disabled to enter stations				●			
	Provide, ensure sufficient lightening system, trees, water drainage, lane printer, signs, etc. to help pedestrians better accessing the station area.				●			
	Need to supplement the system of flyovers, underpass for passengers in areas where the density of vehicles is high				●			
Organizing the traffic surrounding stations	Select optimal plans to well organize the traffic surrounding stations, creating priorities for public transport vehicles such as Bus, BRT to access stations: Laning from distance and surrounding stations to avoid traffic jams; Establish prioritized traffic system such as prioritized				●			

		signs, signal lights, laning for public transport vehicles to conveniently access stations							
	Multi-modal interchange	Design an area where passengers can interchange from UR with other public transport vehicles. Interchange, connecting services such as bridge (tunnel), waiting shelters, indoor walking paths, roofs, commercial areas need to be reasonably arranged, ensuring convenience of passengers				○			
GROUP 3a Manage ment of traveling demand (PUSH)	Controlling the increase of private transport modes (automobiles, motorbikes)	Imposing various tax and fees: import tax, registration tax, vehicle using tax, annual road tax	○	●		○	○	○	
		Provide quota for automobiles, motorbikes, accordingly, people must engage in auction or purchase the right of vehicle using.				●			
		People those want to own a car shall need to prove that they have area to park their cars.				●			
		Apply the regulation on life cycle of motorbikes	●			○		○	Coordinating with Hanoi Police Department
	Restrict, reduce the use of private vehicles	Fuel tax	○	●		○	○	○	
		Urban transport fee	●	○		●	○	○	Additionally coordinate with Hanoi Police
	Charge for parking in urban area	Collect parking fee. Strictly regulating the construction of parking lots, mitigating newly construction of parking lots, and using part of parking fee for public transport network. Construct more park and go areas at urban railway stations.				●	○	○	Hanoi Police coordinates in inspecting the use of road bed and pavements
	Prohibite private transport vehicles	Prohibit some transport vehicles to enter city center during peak hours				●		○	Hanoi Police coordinates to monitor
		Restrict transport vehicles by register number plate				●		○	Hanoi Police coordinates to monitor

GROUP 3b Management of transport demand (PULL)	Improve public transport passenger services	UR and bus lines are extended, the space is extended, the service frequency is increased, in order to ensure the demand of public transport				○			
		Prioritizing supporting passenger transport modes which have high space occupation rate such as separated lane for bus, prioritized signals for bus, and mitigate any delay for public transport modes				●			
		Improve, ensure facilities for passengers in stations, bus shelters with roofs, seats and WC, etc.				○			
		Integrate the system and fare of public transport, need to have reasonable policy to integrate the ticket system of public transport vehicles, creating a convenient payment system by using smart e-ticket.				●	○	○	Need coordination from DoST (HN) and DoIC (HN)
		Integrate passenger information, improve promotion programs: provide passengers with information, alternatives of routes, fare level of public transport services				○			
	Improve the services for bicycle users	Construct parking lots, separated lane for bicycles				●		○	Hanoi Police coordinates to monitor
		Guiding map, direction signs for bicycle users				●			
		Public bicycle leasing service				●	○	○	DoIT joins in the development of Plan on producing and

									consuming bicycles for public transport; DOF stipulates rental fee
Encourage, support public transport users (Urban railways).	This is method with which Transport organizer can pull, encourage enterprises to join in the transport of their employees. Enterprises must pay their employees an amount of money if those employees do not use free parking area in the enterprise. With this amount of allowances, employees can pay to ride on common bus or by public transport (Metro, bus, BRT)					●			
	Compulsory contribution of enterprises to urban transport (including public transport: Urban railway): specifically, a level of urban transport tax is stipulated for employers, this tax rate shall be contributed to the development of city's public transport system.	○	○	○	○	○	○	○	This is methods needed to be studied and applied for the future (PTA), with opinions contributed from Ministries, boards, ... and adopted by the National Assembly
	Indirectly support urban transport via subsidizing users not services. Enterprises, state administration organizations support their employees in purchasing monthly public transport ticket, or employers can purchase transport fee/tickets at public transport operators or transfer to transport card of their employees.						●		
	Have a reasonable ticket policy (fare type, fare structure, fare level), fare subsidy for public transport users, especially students, workers, officers, the disabled, the retirements, etc.					●	○	○	HAPI coordinates in reviewing and balancing annual

									budget for public transport
	Propagandize, enhance the awareness of people about public transport by urban railways	Methods of promoting public transport services, provide information, reasonable routes on mass media,; launch campaigns of encouraging the use of public transport, bycycle day, no-car day.				○		○	MRB coordinates with DOT, DoIC, Dept. of Education and City's transport safety committee

CHAPTER 4: CONCLUSION, PROPOSAL AND RECOMMENDATION

I. Conclusion:

Report on “Study on incentive policies for the use of urban railways in Hanoi City” of the Technical Assistance Project “to Strengthen the capacity of Regulator and establish operation and maintenance company for metropolitan railway lines in Hanoi City” funded by JICA, indicates clearly the necessity to promote, propose policies, measures to encourage the use of urban railways in Ha Noi city. Among those, there are 3 remarkable groups of policies, including: (i) *Strengthening institutional capability in public transport management*; (ii) *T 2. Promoting Public transport (Urban railway) via connection and planning of urban land use with public transport (TOD)*; (iii) *3. Travel Demand Management (TDM)*.

The proposal and implementation of policies to encourage the use of urban railway is the responsibility of management bodies of the Hanoi City People's Committee, in which DOT takes main responsibility.

II. Proposal, recommendation:

Proposals, recommendations are mentioned in the study as follows:

- HPC decides the functions and responsibilities of the Hanoi urban railway regulator (DOT), to establish organizational structure and resources necessary to perform the responsibilities of governmental management about urban railway in general and advice on the policies to encourage the use of urban railway in particular.
- DOT and relevant agencies to advise the HPC on early studying and issuing measures and policies to encourage the use of urban railway lines to suit with real socio-economy conditions of the city Hanoi and in accordance with the roadmap of urban railway Line 2A: Cat Linh - Ha Dong, and Line No. 3 Nhon - Hanoi Railway Station that are expected to put into operation respectively in late 2016, and 2018.



HANOI PEOPLE'S COMMITTEE



**JAPAN INTERNATIONAL
COOPERATION AGENCY**

REPORT ON THE COMPLETED PRODUCT

TECHNICAL ASSISTANCE PROJECT

**TO STRENGTHEN THE CAPACITY OF REGULATOR AND TO ESTABLISH
OPERATION AND MAINTENANCE COMPANY FOR METROPOLITAN RAILWAY
LINES IN HANOI CITY**

ACTIVITY 2. FARE POLICY AND SUBSIDY

Hanoi, Dec. 2015



HANOI PEOPLE'S COMMITTEE



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ACTIVITY 2. FARE POLICY AND SUBSIDY

PROJECT OWNER

HANOI RAILWAY ONE MEMBER LLC

CONSULTANT

JICA/TA TEAM

CONDUCTED BY

EXPERT

Nguyen Trung Thanh

Takayuki Hagiwara

Hanoi, Dec. 2015

ACRONYM AND ABBREVIATIONS

Acronym/Abbreviations	Description
Government	The Government of Socialist Republic of Vietnam
AFC	Automatic Fare Collection
BRT	Bus Rapid Transit
BTS	Bangkok Transit System
COMET	Community for Metros
CPI	Customer Price Index
DOF	Department of Finance, Hanoi City
DOT	Department of Transport, Hanoi City
FAM	Fare Adjustment Mechanism
Farebox Ratio	A ratio calculated by dividing fare revenues by direct and indirect service operation and maintenance costs
FFC	Fare Fixation Committee
FS	Feasibility Study
GDP	Gross Domestic Product
HAIDEP	Comprehensive Urban Development Programme in Hanoi Capital City (Hanoi development master plan)
HAPI	Hanoi Authority of Planning and Investment
HMC	Hanoi Metro Company (the Operator of Hanoi Metro)
HKD	Hong Kong Dollar
HPC	Hanoi Peoples' Committee
HUTDP	Hanoi Urban Transport Development Project
IC	Integrated Circuit
IDR	Indonesian Rupiah
INR	Indian Rupee
Jabodetabek	Greater Jakarta Region (Jakarta, Bogor, Depok, Tangerang, Bekasi)

JICA	Japan International Cooperation Agency
JPY	Japanese Yen
KCR	Kowloon Canton Railway, Hong Kong
KPI	Key Performance Indicator
KRW	Korean Wong
LOS	Level of Service
LRT	Light Rail Transit
LTA	Land Transport Authority, Singapore
MLIT	Ministry of Land Infrastructure & Transport and Tourism, Japan
MOF	Ministry of Finance, Vietnam
MOT	Ministry of Transport, Vietnam
MRB	Hanoi Metropolitan Rail Transport Project Board -HRB, Hanoi Metropolitan Railway Management Board MRB)
MRT	Mass Rapid Transit
MTR	Mass Transit Railway (Hong Kong Metro Operator)
OA	Operating Agreement
O&M	Operation and Maintenance
OMU	Operation and Maintenance Unit
PHP	Philippine Peso
PM	Prime Minister
PO	Plan of Operation
PTA	Public Transport Authority (proposed consolidated regulator managing all public transport systems in Hanoi)
PTC	Public Transport Council, Singapore
RM	Malaysia Ringgit
RPI	Retail Price Index
SAPI	JICA Special Assistance for Project Impementation
SGD	Singapore Doller

SMRT	Singapore Mass Rapid Transit (Singaporean Metro Operator)
TA	Technical Assistance
TFP	Total Factor Productivity
THB	Thai Bhat
TRAMOC	Existing regulator of ordinary bus systems in Hanoi
TRANCERCO	Existing operator of ordinary bus systems in Hanoi
TWD	Taiwan Doller
UR	Urban railway(s)
USD	U.S. Doller
VND	Vietnamese Dong
VNRA	Vietnam Railway Administration
WI	Wage Index
WTP	Willingness-to-pay

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CHAPTER 0 INTRODUCTION

Fare policy, as defined by American public transportation association, is to develop principles and long-term goals to support and guide decision making related to the fare level. Fare Policy is understood in accordance the overall scope to include: one side is technology, type of fare collection and vehicles/payment technology, and the other side is fare structure, fare strategies, payment options, and fare level.

In Hanoi, fare policy has been studied or proposed for each part in study reports related to urban railway development, from transport planning studies, the feasibility studies of each urban railway investment project to study on establishment of operations and maintenance company for metropolitan railway lines in Hanoi City. Fare policy can be considered not only a basis and a means to identify and ensure investment effectiveness for public transport system in Hanoi in general, and also as a basis for decision making for each urban railway project in particular, as well as cooperation on urban railway operation in the future.

With such a wide and important scope, a comprehensive study on fare policy is required, especially when the first urban railway Line 2A was estimated to put into operation in 2015 (estimation at the time of preparation for the TA Project). Therefore, within the framework of the Technical Assistance Project "to strengthen the capacity of regulator and to establish operation and maintenance company for metropolitan railway lines in Hanoi", on one hand, a study on clarification of functions and responsibilities of the urban railway regulator is conducted and on the other hand, fare policy study is performed comprehensively as presented herein.

In the framework of the TA Project, this study shall focus on proposal for fare structure, fare level, regulatory mechanisms based on recommendations of main goals of fare policy consistent with Hanoi's public transport development strategy in particular and socio-economic development strategies in general. The report includes has six chapters as follows:

- Chapter 1. Legal basis and background
- Chapter 2. Objectives and scope
- Chapter 3. Fare policy goals
- Chapter 4. Fare structure
- Chapter 5. Fare regulation framework
- Chapter 6. Implementation scheme.

The first draft of the report was made in Apr. 2014, and was held to obtain comments from the relevant authorities, completed and submitted HPC in March 2015. After that, the report was continued to be sent by DOT for obtaining the comments from the relevant agencies. Accordingly, it has been completed as described herein. This report, compared to the one drafted in March 2015, has been updated with information of implementation status of urban railway projects and the relevant data, explanation for application of the relevant regulation of Vietnam in making assumptions, proposals as shown in the report and updates from the other results of the TA Project.

Urban railway development needs a long journey with gradual self-improvement, including a single development of investment and operation, and integral development of institution and development of regulations on management.

Fare policy report partially has strategic and institutional features, showing some methods and plans consistent with the current situation and forecast of development of urban railway system in Hanoi and related conditions. Therefore, consideration of this document should be long term oriented; the exploitation, usage and application should be flexible and appropriate to each stage.

Construction of urban railway system is itself a strategy investment with the ambition to change the basic conditions for Hanoi development, to absolutely deal with traffic problem in the long run. Policies and their associated implementations have breakthroughs, satisfying management requirements of modern public transport system, and ensuring sustainable development. Therefore, several contents proposed in the fare policy herein are not such a small challenges to be put into practical application. However, if these basic recommendations are not initiatively applied, it is difficult to say that the urban railway system will be able to develop smoothly in long term in the future.

CHAPTER 1 LEGAL BASIS AND BACKGROUND

1.1 LEGAL BASIS

Law on Budget No. 01/2002/QH11 dated 16/12/2002;

Railway Law No. 35/2005/QH11 dated 14/6/2005;

Law on Insurance Business No. 24/2000/QH10; Law on amendment and supplement of Law on Insurance Business No:

Law on Price No. 11/2012/QH13 dated 20/6/2012;

Capital City Law No. 25/2012/QH dated 21/11/2012)

Law on Bidding No. 43/2013/QH13 dated 26/10/2013;

Law on Anti-terrorism No. 28/2013/QH13 dated 12/6/2013

Law on Science and Technology No. 29/2013/QH13 dated 18/6/2013;

Law on Natural Disaster Prevention and Control No. 33/2013/QH13 dated 19/6/2013

Law on Fire Prevention and Fighting No. 27/2001/QH10; Law on Amending and supplementing a number of articles of Law on Fire Prevention and Fighting No. 40/2013/QH13 dated 22/11/2013;

Law on Public Investment No. 67/2014/QH13 dated 26/11/2014;

Law on Enterprise No. 68/2014/QH13 dated 26/11/2014;

Decree 109/2006/NĐ-CP dated 22/9/2006 of Government – Detailing and Guiding the implementation of some articles of Railway Law;

Decree 09/2009/NĐ-CP dated 05/02/2009 promulgating the Regulation on financial management of state companies and management of state capital invested in other enterprises;

Decree 99/2012/NĐ-CP dated 15/11/2012 of the Government on assignment, decentralization of the implementation of the rights, responsibilities and obligations of state owner for the state-owned enterprises and state capital invested in the enterprises

Circular no. 25/2014/TT-BTC dated 17/2/2014 of Ministry of Finance prescribing common valuation methods for goods and services;

Decision no. 490/QĐ-TTg dated 05/5/2008 by the Prime Minister to approve for the Master Plan of construction of Hanoi capital area till 2020 and vision to 2050;

Decision 90/2008/QĐ-TTg dated 09/7/2008 by the Prime Minister to approve for the Master Plan of Transport development in Hanoi till 2020;

Decision 1436/QĐ – TTg dated 10/9/2009 by the Prime Minister regarding approval of the adjusted master plan on development of Vietnam’s railway transportation up to 2020, with a vision toward 2030;

Decision no. 1259/QĐ-TTg dated 26/7/2011 by the Prime Minister to approve for the Master Plan of construction of Hanoi till 2030, vision to 2050.

Decision 222/QĐ-TTg dated 22/02/2012 by the Prime Minister to approve for the Socio-Eco development strategy of Hanoi City till 2030, vision to 2050.

Decision No. 214/QĐ-TTg dated 10/02/2015 of the Prime Minister on approval for adjustment of Vietnam railway transport development strategy to 2020, vision to 2050;

Official Letter 968/VPCP-KTTH dated 10/02/2010 of Government Office regarding “financial scheme for Hanoi – Ha Dong Railway Project”;

Letter No 908/VPCP-KTTH dated 17/02/2012 of Government Office regarding “Financial scheme and implementation of Financial Agreement for Subway project in Vietnam”;

Official Letter No 2152/VPCP-KTTH dated 03/04/2012 of Government Office regarding “Financial scheme and implementation of Financial Agreement for Subway project in Vietnam”;

Decision 61/2007/QĐ-BGTVT dated 24/12/2007 of the Ministry of Transport promulgating the Regulation on types of railway business enterprises required to have safety certificates and conditions, order and procedures for the grant of safety certificates;

Notice No182/TB-BGTVT dated 29/3/2013 of Ministry of Transport regarding the information of Minister Dinh La Thang’s conclusion at the meeting on the implementation status of urban railway projects in Hanoi Capital and Ho Chi Minh City;

Letter No 3734/BGTVT-TCCB dated 26/04/2013 of Ministry of Transport regarding “the establishment of operation and maintenance for Cat Linh – Ha Dong Urban Railway”

Letter No 3155/BGTVT dated 24/4/2012 of MOT regarding “the items related to exploitation, operation of urban railway applied the form of re-lending”

Letter No 1044/CĐSVN – KHĐT dated 01/08/2012 of Railway Bureau regarding “ giving comments on some items in the study of establishment of Operation and Maintenance Company for Urban Railways in the area of Hanoi City and Ho Chi Minh city”

Letter No 11766/BTC-QLN dated 15/12/2011 of Ministry of Finance regarding “financial scheme and implementation Financial Agreement for Subway Construction Project in Vietnam”

Letter 3542/BTC – QLN dated 16/03/2012 of Ministry of Finance regarding “ adjustment of contents of Letter No 11766/BTC-QLN dated 15/12/2011

Resolution No. 03/2013/NQ-HĐND dated 12/7/2013 of HPC giving priority for development of public mass rapid transit; incentives for investment and operation of stations, parking yards of cars and other motor vehicles; application of high technology to transport management and control;

Memorandum of understanding dated 03/12/2012 between JICA Vietnam and Hanoi People Committee regarding “strengthening the capacity of Hanoi Metropolitan Railway Management Board

(MRB) and establishment of an organization for the Operation and Maintenance of Metropolitan Railway Lines in Hanoi City”;

Decision No. 1971/QĐ-UBND dated 04/03/2013 of HPC on approval of the Technical Assistance Project “To strengthen the capacity of Regulator and establish operation and maintenance company for metropolitan railway lines in Hanoi City”; Decision No. 6642/QĐ-UBND dated 12/12/2014 of HPC regarding approval for adjustment of TA Project;

Decision 3136/QĐ-GTVT dated 15/10/2008 of Ministry of Transport regarding approval of construction investment project “Hanoi urban railway: Cat Linh – Ha Dong Line”

Decision no. 2054/QĐ-UBND dated 13/11/2008 by HPC to approve for FS report of Line 2 Project (Nam Thang Long – Tran Hung Dao section);

Decision 1970/QĐ-UBND dated 27/4/2009 to approve for the FS report of pilot UR construction project, Nhon – Hanoi Station;

Decision No. 3978/QĐ-UBND dated 13/08/2015 of HPC promulgating regulations on management and application of e-ticket technology of public transport network in Hanoi City;

Decision No. 08/2015/QĐ-UBND dated 14/04/2015 of HPC promulgation of some regulations on governmental management of prices in Hanoi City

1.2 BACKGROUND

1.2.1 Socio-Economic Growth of Hanoi City

Hanoi City is the capital of Vietnam, center of politics, economy, and culture of the nation. Annual GDP average growth rate of Hanoi in period of 1991-2010 had reached more than 10%. The Government has targeted the GDP of Hanoi at 12.0-13% per year in period of 2011-2020 and at 9.5-10% in 2021-2030.

The development of Hanoi City has strong mutual connectivity and boosting with cities, provinces and areas nationwide, especially in the Capital Economic Zone including 6 provinces with area of around 13,436km², total population is forecasted to increase from around 13,5 million in 2010 to around 18 million in 2050 (Decision no. 490/QĐ-TTg dated 05/5/2008).

Together with the recent socio-economic achievements, Hanoi has witnessed the high urbanization speed and is estimated to higher level in the next 30 years. The high speed of urbanization, except for advantages, also results in a series of problems, especially the transport system.

1.2.2 Transport Development Master Plan

The Master Plan for Hanoi City till 2020 in 1998 affirmed the “priority for the construction of Urban Railway (UR) system to create main axis of the City’s public transport” (Decision no. 108/1998/QĐ-TTg dated 20/6/1998).

In 2008, the Prime Minister approved for master plan to develop the transport in Hanoi till 2020, as specifying the Master Plan in 1998 in terms of transport. In this 2008 Master Plan of Transport, the UR network was planned with 6 lines.

On the other hand, on 29/5/2008, the Vietnamese National Assembly issued Resolution to adjust the administrative boundary of Hanoi City and some related provinces, accordingly, the area of Hanoi City has been tripled (to more than 3300km²), population has been doubled (to about 6,4 million) . On 26/7/2011, PM approved for Master Plan of Construction of Hanoi Capital City till 2030, vision to 2050 (Decision 1259/QĐ-TTg); in which, the population of Hanoi City in 2030 will increase to around 9.2 million; however, the population in the city center will be around only 4.6 million. To achieve the re-allocation of population, the Master Plan ascertained that “Enhance the development of public transport in order to mostly satisfy the travelling demand of the city such as BRT, UR, etc.”

1.2.3 Urban Railway Projects

According to the Hanoi master plan to 2030 with the vision of 2050, the public transport of Hanoi city will be developed with the three main components. As one of those, it is clearly stated that Hanoi will strongly promote urban railway development to mitigate traffic congestion and air pollution, problems that are becoming more critical each day.

Hanoi realized the importance of a longer perspective for transport infrastructure development including urban railways, defining 8 urban railway lines will be developed by 2030.

Out of these 8 lines, 4 lines are currently being implemented, namely Line 1 (Yen Vien – Ngoc Hoi), Line 2 (Nam Thang Long – Tran Hung Dao), Line 2A (Cat Linh – Ha Dong), and Line No 3 (Nhon – Hanoi Railway Station) with the target completion before 2020. Among these lines, 3 lines including Line 2A, Line 2 and Line 3 will be managed by HPC, As the first step, Line 2A is expected to go into operation in 2015.

1.2.4 Necessity of Fare Policy Study

With target to complete the first line construction and commencement of commercial operation within few years time, little attention has been paid on the institutional development of the operating company and the regulating authority. In this connection, a technical assistance (from 2011) project to provide assistance for establishment and capacity building of these organizations were initiated with the joint effort of HPC and JICA (JICA TA Project).

In fact, in Hanoi there are two main public transport means including bus and taxi; fare systems of the two means operate independently. While fare setting and fare management is basically undertaken by the taxi brands themselves but without any specific combination, fare system for bus is more closely regulated by the Government thru mechanism of order and subsidy.

For future urban railway system, up to now, there are some studies and study on e-ticket technology, after long time study, is approved by HPC in Decision No. 3978/QĐ-UBND dated 13 August 2015 regarding promulgation of regulations on management and application of e-ticket technologies of public transport system in Hanoi City.

Other studies relating to fare policy are mainly proposed in F/S report of urban railway projects. However, these studies are incoherent, not unified. Therefore, it is lacked of applicable basis for evaluation of investment effectiveness, preparation for operation of urban railway lines as well as it is not yet possibly basis for proposing other urban railway investment projects.

Because of this reason, it is necessary to have an overall and completed study on fare policy relating to purpose, regulation framework, and fare strategy, as a basis for preparation and investment effectiveness and as a basic for study and implementation of other urban railway projects as planned.

1.3 Word Interpretation

In this material, main words and terminologies are understood as follows:

1. Fare policy: is defined as the principles, goals, and constraints that influence on the management of a public transport agency in setting and collecting fares (TCRP 10).
2. Fare strategy: Fare strategy, as used in this study, refers to a general fare collection and payment structure approach; possible approaches include flat fare, differential pricing (by distance traveled, time of day or type of service), market-based or discounted payment options, and transfer pricing.
3. Fare system: Fare system is the basic fare collection and distribution approach, as well as the specific equipment and payment media; the basic types of fare collection approaches are barrier, payment on entry, and proof of payment (POP) (TCRP 10).
4. Fare structure: The fare structure is the combination of one or more fare strategies with specific fare levels (TCRP 10)

The term fare structure is used to describe the overall fare system used by a transit operator, including (TCRP 95-2004):

- The relationships among the fares (prices) charged for each fare category.
- The types of fare categories offered.
- The basis on which fares are calculated ~ flat, zonal, or distance-based.

CHAPTER 2 OBJECTIVES AND SCOPE OF THIS STUDY

2.1 OBJECTIVE OF THE REPORT

The objective of this report is to provide HPC with guidance in process of making decisions related to fare policies, objectives, structures and regulatory frameworks needed to be established in order to make effective use of Hanoi Metro network and infrastructures as well as to promote additional investment in urban railway.

Also, this report supports the development of regular, systematic and sophisticated fare review and adjustment mechanisms that will make it possible to sustain the provision of metro services and enhance quality, while keeping services affordable.

2.2 METHOD OF THIS STUDY

The objective of this study is to review existing fare policies in Vietnam and overseas, and eventually to propose a comprehensive fare policy that can achieve at least but not limited to the following goals.

- To safeguard passengers' interest by ensuring adequate services at affordable fares
- To ensure the long term viability and financial sustainability of Hanoi Metro Company
- To encourage the passenger to use urban railway network provided by Hanoi Metro Company

2.3 SCOPE OF THIS STUDY

This study covers the following scopes;

- (1). Summarize popular concepts of fare policies in urban railway/public transport
- (2). Review existing application related to fare policies in Hanoi city
- (3). Review existing policy goals of fare policy in urban railway/public transport system in overseas
- (4). Review existing fare level, fare structure and type of fares of urban railway/public transport in overseas cities
- (5). Review existing fare regulatory frameworks of urban railway/public transport in overseas
- (6). Review existing institutional frameworks of urban railway/public transport fare regulation in overseas
- (7). Propose new fare policy for sustainable development of Hanoi Metro Company/ urban railway/public transport system in Hanoi
- (8). Liaise with key stakeholders for finalization of final report on fare policy

2.4 STRUCTURE OF FARE POLICIES

This study adopted fare policy includes four (4) factors that must be assessed for determination of metro fares, namely fare policy goals, fare system, fare regulation framework, and institutional organization.

Table 2.1: Structure of Fare Policies

Fare Policy Goals	<ul style="list-style-type: none"> • Economic goals/objectives • Financial goals/objectives • Social (customer-related) goals/objectives
Fare System	<ul style="list-style-type: none"> • Fare level • Fare structure • Type of fare (ticket)
Fare Regulation Framework	<ul style="list-style-type: none"> • Fare Pricing regulation • Fare adjustment mechanism • Subsidy system
Implementation Scheme	<ul style="list-style-type: none"> • Institutional development scenario • Decision-making process • Timing of fare review • Public involvement

2.5 WORK PLAN

Pursuant to the terms of reference of the JICA TA Project, Table 2.2 illustrates the work plan for fare policy development with the timeline as per the agreed Plan of Operation (PO). This work plan sets forth milestones to be addressed by the key stakeholders during the course of this study.

Table 2.2: Work Plan

	Activity	Timeline/Milestone
1.	Documentation - First Draft	Sep. 2013
2.	Initial Distribution to Line Departments	Nov. 2013
3.	Additional Research ¹	Nov. 2013 – Jan. 2014
4.	Joint Coordination Committee Meeting (3)	Mar. 2014
5.	Documentation – Draft Final	Apr. 2014
6.	Inter-departmental Review	May. 2014
7.	Documentation - Final	Jun. 2014

¹ See Chapter 4, Section 4.2

8.	Final Approval by HPC	Jun. 2014
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December 2014, Hanoi People's Committee issued Decision 6642/QD-UBND on approval for adjustment of the Technical Assistance Project to extend to the end of February. Study on fare policy is extended for further update of urban railway conditions in Hanoi and related information. The final report is estimated to be completed in Quarter IV of 2015.

CHAPTER 3 FARE POLICY GOALS

3.1 GENERAL

3.1.1 Overview

Clear, consistent, and fair fare policies are critical to the success of the Hanoi urban railway system. In developing fare policy, structure, and regulation framework, key concern is to ensure its fare recovery ratio while gradually attracting ridership to use urban railway system.

The study defines overall objective of fare policy “to support Hanoi City’s strategic mission to provide quality public transportation and great attraction to the community, in order to increase ratio of using public transport that meet the requirements of sustainable development ò the city”. To accomplish this goal, Hanoi city should develop and use its resources, and should develop and apply related policy and regulation framework, which will be a foundation to ensure sustainable development.

This chapter will propose appropriately fare policy goals urban railway system in Hanoi City, which have been invested in relatively diversifying manner.

3.1.2 Establishing Fare Policy Goals

Fare policy is crucial to achieve the overall goal, identifying an appropriate set of fare policy goals is essential to making decisions relating to operation and development of urban railway system. The specific fare policy goals will lead decisions related to fare structure, fare regulation framework, and also fare technology. The basic types of fare policy goals and their importance within the urban railway services are presented below.

It should be noted that there is some overlap among these specific goals because some goals address more than one area of concern (e.g. increasing ridership and securing financial viability for the Operator often conflict each other). Thus, the decision-makers are required to well balance the different set of goals.

3.2 FARE POLICY GOALS

3.2.1 Goal 1: Ensuring Affordability of Fares

- Fare price of the urban railway in particular and of public transport system in general should be within the affordability of passengers, particularly when compared to fares of bus and taxi, private vehicle use and the general cost of living, is a key component of increasing ridership.
- Hanoi urban railway system will be promoted for use of urban railway services by setting fares that are accessible to the widest possible range of potential rider groups.

3.2.2 Goal 2: Increasing Ridership

- Increasing public transport ridership is a priority objective for Hanoi urban railway system. Increased fare revenue, decongestion and friendly cities are the key benefits of increased public transport usage.
- Ridership will be changed in response to a range of factors such as public transport service levels, service reliability, the relative affordability of fares compared to other transport options, levels of car ownership, and petrol prices.
- In addition to provision with the affordability of fares, Hanoi urban railway system will enhance the perceived value for fares, including ease of use of public transport, and ease of the payment systems.

3.2.3 Goal 3: Increasing Fare Options

- Hanoi urban railway system orients development of fare option that best meets their needs. A range of options will be offered (e.g., individual tip ticket, multiple-ride ticket, seasonable ticket, valued added ticket, prepaid and other discounted options).

3.2.4 Goal 4: Reducing Complexity

- Complexity in a Fare Structure may arise from the nature of the basic structure itself as well as the number of products. Reducing complexity increases ridership through making the public transport system easier to use and improving the transparency of the fare structure, and is important for the first urban railway system in Hanoi.
- Hanoi urban railway system enhances the convenience through its fare strategy. For instance, the system avoids an "inconvenient" cash fare (e.g., VND 7,500) and makes prepaid options available.

3.2.5 Goal 5: Increasing Social Equity (Rewarding Target Behaviours)

- Hanoi urban railway system specifies to ensure equity in traveling equivalent to fares and those riders who have much demand of traveling are not adversely affected by a change in the fare levels. These will be addressed by a combination of i) setting fares on the basis of either the costs of the service or on the benefit received and ii) offering discounted fare instruments with a low price.
- Fare products used to orient and reward particular behaviours which support the broader aims for public transport. These target behaviours include:

- Encouraging frequent and regular use of public transport system (e.g. the number of journeys made in a day, week or year) to increase ridership,
- Encouraging greater use of the smartcard system to shrink the use of cash fares in the system,
- Encouraging non users to use public transport to increase ridership,
- Encouraging users to shift their time of travel from the peak to off peak period to alleviate capacity issues in peak times (perhaps it should be future option).

3.2.6 Goal 6: Meeting Farebox Recovery Targets

- Hanoi urban railway system orients to attains the target farebox recovery ratio through the fare structure, by time when urban railway system is invested in relatively perfect manner and has closely attachment between urban railway system and other public transport modes, it is possible to strive to achieve recovery of operating costs through fare revenue provided that investment cost of E&M systems (including future reinvestment) is recovered from non-fare revenue.
- At first fares set unreasonably low should be prevented, it aims to secure fare revenue at an appropriate level and eventually ensure financial sustainability for Hanoi urban railway system.

3.2.7 Goal 7: Enabling Regular Adjustment of Fare Price

- Any change to the fare level will positively or negatively impact on ridership. The acceptability of any change can be increased by a gradual adjustment of fare level, allowing users to adjust their travel patterns in response to the changes of fare price.
- Allowing fare reviews also enables HPC to adjust their funding levels and budgets to match the changes in predicted fare revenue.

3.2.8 Goal 8: Maximizing Political Acceptability

- Public transportation is one of several key factors that influence the quality of life of Hanoi residents. This suggests that urban railway fare policies should support broader social and economic issues.
- Hanoi urban railway system proposes fare structure or system acceptable to the public and the decision makers accept on the basis of such factors as equity, complexity, potential, or impact on revenue (TCRP 10).

3.3 CONCLUSION

- Fare policy goals of Hanoi urban railway system are proposed as follows.
 - Goal 1: Ensuring Affordability of Fares
 - Goal 2: Increasing Ridership
 - Goal 3: Increasing Fare Options
 - Goal 4: Reducing Complexity
 - Goal 5: Increasing Social Equity (Rewarding Target Behaviours)
 - Goal 6: Meeting Farebox Recovery Targets
 - Goal 7: Enabling regular adjustment of fare price
 - Goal 8: Maximizing Political Acceptability
- Fare policy is crucial to achieve these general goals and making decisions. However these specific goals often conflict with each other. Thus, fare shall be determined by balancing the maximization of net social benefit and financial soundness of the operator.
- Fare policy goals should be spelled out in a fare policy statement or may be indicated in the other formal policies and actions to promote the transparency and accountability to the general public. Finally, a comprehensive policy statement may specify guidelines or procedures for determining and implementing fare adjustments.

CHAPTER 4 FARE LEVEL, FARE STRUCTURE AND TYPE OF FARE

4.1 GENERAL

4.1.1 Overview

Chapter 3 described the fare policy goals which give the criteria for the Regulator to decide fare strategies. In line with these specific goals, this chapter develops the basis for initial fare setting, fare structure, and type of fare options for the actual implementation of the fare policy.

4.1.2 Existing Fare Level, Fare Structure and Type of Fare

Traditionally, Hanoi's fare structure has been comprised of two basic fare strategies: flat fares and distance-based differential fares.

Bus Flat fares are applied. Tariff for bus service of Hanoi People's Committee, ticket for bus service are currently applied as follows:

Table 4.1: Existing Fare System (Bus)

No	Type of fare	Time-based rate (VND)		
		35/2005/QĐ-UB	23/2012/QĐ-UBND	18/2014/QĐ-UBND
Common passengers				
1	Flat fare for distance shorter than 25km	3,000	5,000	7,000
2	Flat fare for distance from 25km to 30km	4,000	6,000	8,000
3	Flat fare for distance longer than 30km	5,000	7,000	9,000
4	Monthly pass of 1 line	50,000	90,000	100,000
5	Monthly pass of interoperable lines	80,000	140,000	200,000
Concession				
1	Monthly pass of 1 line	25,000	45,000	55,000
2	Monthly pass of interoperable lines	50,000	90,000	100,000
Group >= 30 people				
1	Monthly pass of 1 line			70,000
2	Monthly pass of interoperable lines			140,000

Taxi Distance-based fares are applied. Fare price varies depending on the type of vehicle and service companies, typically understood as follows:

Transport rate = 11.000*transport km (at least 8.000 (Opening rate))

Table 4.2: Existing Fare System (Taxi)

Taxi branch	Opening rate (VND)	Rate of first 30 km (VND/km)	Rate from 31km and longer (VND/km)
Ba Sao	6,000	11,000	8,000
Thanh Nga	6,000	11,000	9,000
Van Xuan	8,000	10,000	9,000
Song Nhue	6,000	10,500	9,000
Huong Lua	6,000	10,000	9,000
Vic Group	6,000	10,500	8,500
Thanh Cong	8,000	11,000	9,000
Sao Ha Noi	5,000	11,000	9,000
Morning	6,000	11,000	9,000
ABC	5,000	11,000	9,000
My Dinh	6,000	11,000	9,000
Thang Long	6,000	12,500	10,500
Mai Linh Taxi	6,000	11,000	9,000
Taxi Group	12,000	14,400	11,500
Taxi Phu Dong	6,000	10,800	8,800
Vina Taxi	10,500	15,000	11,000
Taxi The Ky Moi	8,000	11,000	9,000
Vina Sao Taxi	8,000	11,000	8,000
Taxi Hoan Kiem	6,000	11,000	9,000
Taxi Thu Do Sao	6,000	10,500	8,500
Taxi Ha Dong	7,000	9,500	8,500
Taxi Sao Mai	5,000	11,000	9,000

Taxi branch	Opening rate (VNĐ)	Rate of first 30 km (VNĐ/km)	Rate from 31km and longer (VNĐ/km)
Taxi Au Lac	5,000	10,500	9,000
Taxi Bac Á	6,000	11,000	9,000
Taxi Me Kong	10,000	11,800	9,800
Taxi Song Hong	8,000	11,000	8,000
Taxi Trieu Quoc Dat	8,000	10,800	8,800

Source: Websosanh June 2015

4.2 PROPOSED FARE LEVEL

4.2.1 Initial Fare Setting and Subsequent Fare Adjustments

In practical, in order to differentiate between the two separate stages of fare setting: the initial fare setting and the subsequent fare adjustments². Focuses in this chapter is on initial fare setting, while fare adjustment policies are discussed in the next chapter.

4.2.2 Importance Basis for Fare Setting

Fare setting is considered based on the important bases as follows:

- Railway Law No. 35/2005/QH11 dated 14/6/2005;
- Law on Price No. 11/2012/QH13 dated 20/6/2012;
- Decree No. 177/2013/ND-CP dated 14/11/2013 of the Government providing detail regulations and guidelines a number of articles of Law on Price;
- Decree No. 215/2013/ND-CP dated 23/11/2013 of the Government providing regulations on functions, responsibilities, power and organizational structure of Ministry of Finance;
- Decree No. 130/2013/ND-CP dated 16/10/2013 of the Government providing regulations on production and provision of public utility products and services;
- Decree No. 14/2015/ND-CP dated 13/02/2015 of the Government providing detail regulations on implementation of several articles of Law on railway;
- Circular no. 25/2014/TT-BTC dated 17/2/2014 of Ministry of Finance prescribing common valuation methods for goods and services;
- Decision No. 1259/QD-TTg dated 26/7/2011 of the Prime Minister regarding approval for general construction plan of Hanoi Capital to 2030 and vision to 2050;
- Decision No. 222/QD-TTg dated 22/02/2012 of the Prime Minister on approval for Socio-economic development strategy of Hanoi City to 2030, vision to 2050;
- Decision No. 335/QD-TTg dated 25/02/2013 of the Government on approval for adjustment of Vietnam Transport development strategy to 2020, vision to 2030;
- Decision No. 214/QD-TTg dated 10/02/2015 of the Prime Minister on approval for adjustment of Vietnam Railway transport development strategy to 2020, vision to 2050;
- Circular No. 56/2014/TT-BTC dated 28/4/2014 of Ministry of Finance for guidance of Decree No. 177/2013/ND-CP dated 14/11/2013;
- Decision No. 08/2015/QD-UBND dated 14/04/2015 of HPC regarding issuance of several regulations on governmental management of price in Hanoi City

4.2.3 Related policies of Hanoi City

Principle, basis and method for pricing

Based on Railway law, the Government shall mobilize resources for development of urban railway to become one of the main transport modes in large urban area. Urban railway investment and business is the type estimated as follows: priority (Article 56). Urban railway fare is decided by

² This is partly because the process of initial fare setting has already taken into account property development profits, whereas future fare adjustments do not.

provincial people committee. Subsidy for urban railway is implemented in accordance with a contract between provincial people committee and urban railway business enterprise (Article 62).

Accordingly, the Government shall stipulate principle, method to define price consistent with principle market economy (Article 5, Law on Price); ensuring principle (Article 20, Law on Price; Article 3, Circular 25/2014/TT-BTC):

Table 4. 1 Principle for pricing

No.	Description	Way to apply
1	a) Ensure to offset production costs, practically reasonable business, with profits in line with market price level, guidelines and policies of socio-economic development of the Government in each period.	Comply with regulations of order and plan assignment
2	b) Timely adjust fare policy when fare component factors change.	To be proposed in detail in this Report

Legal basis for pricing includes Article 21 of Law on Price; Article 4 of Circular 25/2014/TT-BTC:

Table 4. 2 Basis for pricing

No.	Description	Way to apply
1	a) Total cost, quality of product of goods and services at time of pricing; estimated profit;	This content is a base for preparation of order/plan assignment contract between operator and regulator/HPC
2	<i>b) Demand- supply relation of goods and services and purchasing power of money; solvency of the consumer;</i>	This is important contents for development of fare policy, particularly fare price and fare structure (and other contents like train operation plan).
3	c) Prices of domestic market, world market and competitiveness of goods and services at the time of valuation;	In this report, fares of some countries and cities are referred inherent with appropriate socio-economic condition while analyzing competition between other transport modes and urban railway.

Pricing method:

Circular 25/2014/TT-BTC provides guidelines for 2 pricing methods, namely comparison method and cost method:

TT	Description	Way to apply
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1	- Comparison method: A method of pricing goods and services based on analysis results, a comparison between prices and economic, technical characteristics greatly that affect prices of goods and services need to be valued with similar goods and services that are traded on the domestic market; with reference to the market price on the region and the world (if any).	Comparison method can be used in proposals for urban railway fare policy; however, there is no absolute similarity between the products/ services in Hanoi and future urban railway transport services. Therefore, cost/price of the main services expected to convert to use urban railway services will be considered; simultaneously comparison among cities will be made. In addition, other criteria such as urban transport development strategy applied to the City, social policies, etc. will be taken into consideration as the basis for determining the strategy fares and fare price.
2	- Cost method is a method of pricing goods and services based on practically and legally reasonable production and business cost, and expected profits (if any) in accordance with the market price level and government's policies that affect prices of goods and services.	This content is an important part in calculating urban railway operation and maintenance costs of the operation company and is to incorporate into contracts for defining responsibilities/ financial interests between management agencies and companies operate.

Government's policies on transport

In the world, economic cost for transport currently occupies from 9% (Copenhagen) to 28% (Lagos-Nigeria) of average per capita income.

Table 4. 3 Leading cities regarding economic cost for transport

Well set-up city		City with high density		New emergent city	
Copenhagen	8.6%	Singapore	8.9%	Santiago	10.8%
Madrid	8.7%	Hong Kong	9.2%	Mexico	12.2%
Vienna	9.7%	Beijing	11.0%	Bangkok	12.6%
Range	9-19%	Range	9-16%	Ranger	11-28%

Source: Siemens, 2014

Transport cost includes expenses of the Government (central government and local governments) and the expense of the people. Regarding the Government's investment, Decision No. 318/ QD-TTg dated 04/03/2014 of the Government on Approval for adjustment of transport service

development strategy by 2020, with a vision to 2030), identified increasing investment amount (entire society) for transport infrastructure to achieve 7-8% of GDP.

Regarding expenses of the people, the Government defined to achieve transport costs by 12% of average income. With the policy of converting methods of urban traffic in city from personal motorized modes to public transport system, the study will refer to the current traveling expense people. With main object of passengers that is expected to be primarily low-income, average and above average, calculation of average cost for motorized transport is as follows:

4.2.4 Past Studies on Fare Level

Several studies were carried out to propose the initial fare level and assess financial viability of entire urban railway network or a single project. Such exercises are summarized in the following table, wherein different approaches were applied by each study;

Table 4.6: Past Studies on Fare Level

SAPI Study	<p><u>Rail fare based on comparison with other modes</u></p> <ul style="list-style-type: none"> • Rail fare is set at the midpoint between the min. bus fare (5,000 VND) and base fare of a taxi (12,000 VND) (i.e. affordable fare price = 9,000 VND). • Price of a monthly pass is set as 10 to 17 times that of a single line ticket, and 16 to 27 times for a common path on multiple lines (same as Hanoi's bus system) • The initial fare, to be applied in the year of Line 2A opening, is adjusted to reflect the price escalation (thereby average fare price = 10,500 VND). • Single Ticket: $6,800 + 680 \times (\text{travel distance})$ VND (in 2015) • Monthly Pass (one line): 130,000 VND • Monthly Pass (multiple lines): 220,000 VND
Line 2	<p><u>Rail fare based on demand elasticity studies and revenue maximization</u></p> <ul style="list-style-type: none"> • Fare price is assessed through demand elasticity studies with respect to price and levels of service for urban railway use based on the HAIDEP transport models. • Optimum fare price is specified at max. revenue point, where recommended formula is set as $(\text{Fare}) = 0.2 + (\text{Distance} - 2) \times 0.05$ USD • Average travel distance is estimated as 6.3 km. Thus, average fare in this assumption is 0.415 USD (or 8,300 VND)
Line 5	<p><u>Rail fare based on comparison with other modes and international benchmarking</u></p> <ul style="list-style-type: none"> • Rail fare is set with reference to bus fare (5,000 VND) (i.e. affordable fare price = 0.5 USD or 10,000 VND). • The fare against GDP per capita is cross-checked by international benchmarking

4.2.5 Fare Level based on Total Cost (to Meet Farebox Recovery Target)

In line with the Fare Policy Goal 6 and principle and basis for pricing prescribed by Law on Price and Circular 25/2014/TT-BTC: Meeting Farebox Recovery Targets, fare level should take cost and revenue structures into account to secure the financial viability for the Operator.

Farebox recovery ratios are calculated by dividing fare revenues by direct and indirect service operation and maintenance costs. It is the goal of Hanoi Metro Company to continuously seek the highest possible farebox recovery ratio while maintaining fares at levels consistent with fare policy.

Hanoi Metro Company's policy is to recover from fare revenues at least the specified percentage of total operating expenditures (including costs of service operations, maintenance and administration) from the entire urban railway network. In the meantime, future reinvestment (capital expenditure for replacement and renewal) will be borne by non-fare revenues.

Consistent with the policy of HPC, minimum farebox recovery ratio threshold are established in the Hanoi Metro's financial plan. However, actual operation of 3-5 years is needed to obtain data as a basis to make Plan and make appropriate decision. This criterion is not possible to apply in the current stage.

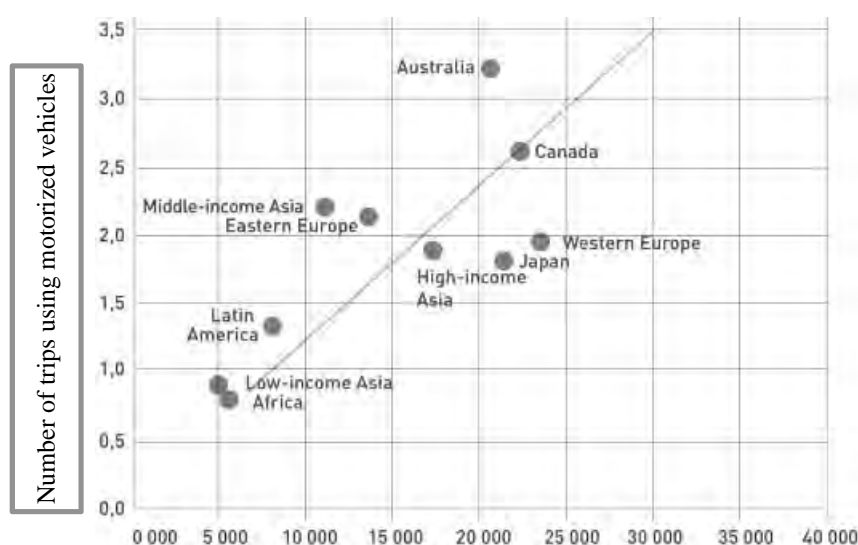
4.2.6 Fare Level based on Willingness-to-Pay (WTP)

In line with the Fare Policy Goal 1: Ensuring Affordability of Fares and Goal 2: Increasing Ridership and basis for pricing prescribed by Law on Price and Circular 25/2014/TT-BTC (affordability of the consumers) fare level should reflect the riders' Willingness-to-Pay.

The General Consultant of Line 2 proposed fare price through demand elasticity studies with respect to price and levels of service for urban railway use based on the HAIDEP transport models, where the optimum fare was specified in such a way to maximize fare revenue. However, the model needs update as the latest mass transit network, socio-economic conditions, and some other elements are different from the original assumptions.

Willingness-to-Pay of passengers is partially determined in accordance with strategy set for the City (in which, cost for oriented transport occupies of 12% of average income), defining expense of people for transport in general and urban railway service in particular as follows.

Bảng 4. 4 Relation between income and traveling demand



Source: CODATU 2014

Providing that one person takes two trips in a day and number of travelling days in a month is 26 days, it accounts for 52 rides in a month (note that as the above data, traveling demand depends on several factors, from culture to income, etc. Therefore, this data needs to be continuously updated/forecasted in each applicable stage). Accordingly, willingness-to-pay for traveling services in compliance with Hanoi City's policy can be estimated as follows:

Table 4.8: Average Income of Residents in Hanoi

No.	Income Group	VND/Month	VND/Hour
1	High income	> 9,000,000	> 46,875
2	Fair income	6,000,000 – 9,000,000	31,250 – 46,875
3	Medium income	3,500,000 – 6,000,000	18,250 – 31,250
4	Low income	< 3,500,000	<18,229

Source: The Study

Table 4.9: Maximum Willingness to Pay for Travelling Service

No.	Income Group	Willingness to pay for travelling service	
		VND/Month	VND/Trip
1	High income	> 1,080,000	> 20,769
2	Fair income	720,000 - 1,080,000	13,846 - 20,769
3	Medium income	420,000 - 720,000	8,076 - 13,846
4	Low income	< 420,000	< 8,076

* Note: trip is understood to be from a place (home) to other place and vice versa. The journey can consist of several lines and several modes.

According to the result of interview survey with the residents in the catchment areas of Line 1 and Line 2, later explained later on, average willingness-to-pay for access and egress modes are VND 3,500³ approx. After deduction of this amount from the above table, maximum willingness to pay for urban railway service is estimated as in the following table.

While the target income group of public bus service is “3. Medium Income”, the same of urban railway service should be higher than that as urban railways require more intensive cost of service for carrying one passenger in the same distance and can offer better level of service in terms of speed, frequency, riding comfort, etc. For this reason, the preliminary target group is set at the midpoint of “2. Fair Income” and “3. Medium Income”.

³ In the future, this cost will gradually decrease when public transport system covers more in the city (and surrounding areas).

Table 4.10: Estimated Maximum Willingness to Pay for Urban Railway Service

No.	Income Group	Maximum willingness to pay for urban railway service
2	Fair income	10.348 – 17.269
3	Medium income	5.076 – 10.348
	Midpoint of 2. & 3.	7.712 – 13.808

4.2.7 Fare Level based on Comparison with other Modes

In line with the Fare Policy Goal 1: Ensuring Affordability of Fares and Goal 2: Increasing Ridership, fare level should be set strategically as the demand of urban railways.

Alternatively, fare level should be developed consistent with the transport development strategy for Hanoi, in which urban railway is determined to be the backbone of the public system with other public transport modes like bus, BRT to become attractive public system, making change from private mode, especially motorbikes, to public transport system.

In this connection, JICA SAPI Study set the preliminary rail fare at the midpoint between the minimum bus fare and base fare of a taxi for the purpose to assess the financial viability of Hanoi Railway Company.

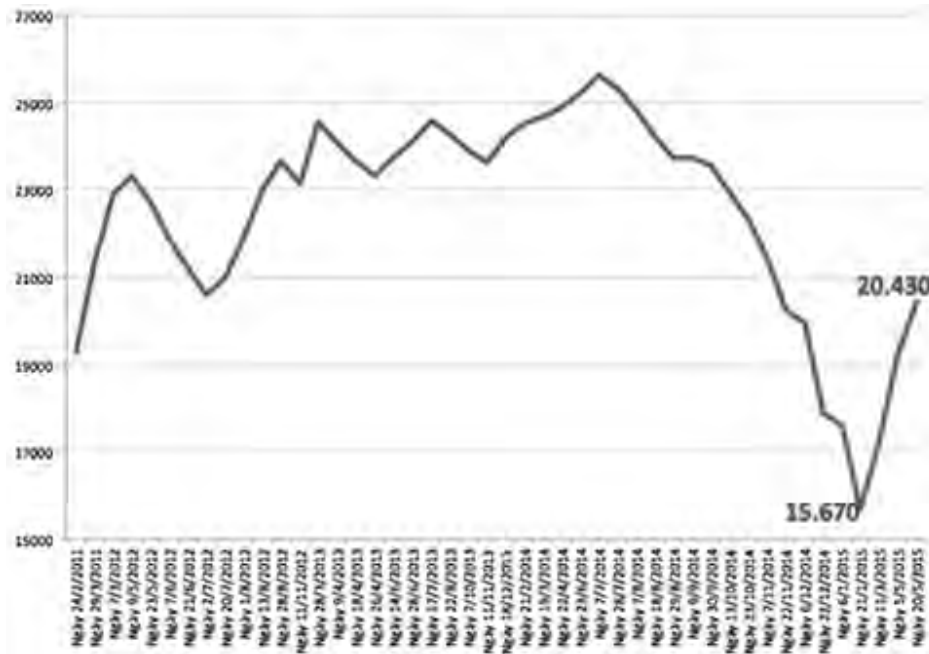
According to the actual and the target passengers are people with average incomes, who currently and mainly use motorbikes, actual costs of using motorcycles may be considered important basis for comparison to determine cost/fare for urban railway services in particular and for public transport in general. In the study, monthly average cost of people actually paid is around 426,000 VND, corresponding fare is 5,100 VND, which is shown in detail in the table below. The level of expenditure in line with the strategic targets applied to the City (matched with those who have medium income).

Table 4. 11 Average traveling expense of Hanoi citizens using motorcycles

Unit: VND

Traveling	Cost
Gasoline, oil cost	2,660,850
Other cost	532,170
Fuel and operation cost	3,193,020
Annual vehicle fee	1,916,667
Total annual traveling cost	5,109,687
Total monthly traveling cost	425,807

Source: the study

Table 4. 12 Gasoline price 2011-2015Source <http://baodatviet.vn>, 20/5/2015

4.2.8 Fare Price Benchmarking

Setting urban railway fare is the first attempt in Vietnam; therefore, fare price benchmarking is not yet possible to apply in Vietnam. The Feasibility Study on Line 5 performed a brief benchmarking on rail fare. To strengthen the result, a research on public transport pricing (including the fare comparison between different modes) in Asian mega cities is conducted (See Table 4.5).

4.2.9 Important Note

Each approach has uncertainty when defining fare level.. Also, subsequent theoretical researches will give an indication of overall public transportation demand, shares of urban railways ridership, and the likely market shares in a variety of fare structure/fare scenarios.

Table 4.13: Issues of Each Approach for Setting Initial Fare Level

Fare based on Total Cost cover ratio target (Farebox Recovery Target)	<ul style="list-style-type: none"> • As ridership is hard to forecast accurately and often overstated for political reasons, estimated breakeven fare level may be set too low, this may eventually lead the financial loss. • This method can be reviewed and applied in the future with total cost cover ratio target when actual data is available.
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Fare based on Willingness-to-Pay	<ul style="list-style-type: none"> • Respondents may be unable to state the accurate WTP fare, as they are hard to understand the actual level of service of the first ever urban railway service in the nation and quality improvement of public transport system after urban railway line is put into operation. Benefits from quality improvement of public transport service normally are difficult to convey to people in quantitative manner.
Fare based on Comparison with other Modes	<ul style="list-style-type: none"> • As the current bus fares in Hanoi are underpriced mainly due to political reasons, rail fare may be set much low compared to the price to meet farebox recovery target. Cost of using motorbikes may be a suitable criterion to define fare for urban railway when public transport system is relatively perfect and satisfies basic quality.
Fare Price Benchmarking	<ul style="list-style-type: none"> • International benchmarking is useful tool for reference, but it should be understood that the lifestyle and composition of income and expenditures varies in each country/city. • When Vietnam in general and Hanoi city in particular develops nearly equal to other cities, this method can be applied more specifically.

Table 4.14: Fare Price Benchmarking in Selected Asian Cities

		Tokyo		Singapore	Hong Kong	Delhi	Hanoi
GDP	Population	37.7 mil.		5.3 mil.	9.2 mil.	18.9 mil.	6.5 mil.
	GDP per capita	USD 46,000		USD 44,000	USD 31,500	USD 4,200	USD 4,000
Average Wage	Public (Teacher)	USD 59,800			USD 47,800	USD 3,900	
	Private (Banker)	USD 60,400			USD 21,000	USD 6,000	
Railway		Tokyo Metro	Toei	SMRT	MTR	Delhi Metro	Hanoi Metro
	Network Length	195 km	109 km	149 km	91 km	190 km	12.6 km
	Base Fare	USD 1.6	USD 1.7	USD 0.867	USD 0.452	USD 0.124	USD 0.3
		(JPY 160)	(JPY 170)	(SGD 1.1)	(HKD 3.5)	(INR 8)	(VND 6,000)
		first 6 km	first 4 km	first 3.2 km	first 3 km	first 2 km	first 2 km
	Variable Fare	USD 0.056/km	USD 0.080/km	USD 0.016/km	USD 0.129/km	USD 0.008/km	USD 0.03/km
Fare (6km Ride)	USD 1.60	USD 1.86	USD 0.91	USD 0.84	USD 0.15	USD 0.42	
Bus	Base Fare	USD 2.0		USD 0.284	USD 0.516-10.29	USD 0.155	USD 0.25
		(JPY 200)		(SGD 0.36)	(say 4-10)	(INR 10)	(VND 5,000)
		flat		first 3.2 km	Varies	first 4km	flat
	Variable Fare	n.a.		USD 0.0394	n.a.	USD 0.0194	n.a.
				(SGD 0.05/km)		(INR 1.25/km)	
Fare (6km Ride)	USD 2.0		USD 0.394	USD 0.774	USD 0.194	USD 0.25	
Rate against Rail	1.25	1.08	0.43	0.92	1.25	0.60	
Taxi	Base Fare	USD 7.10		USD 2.36	USD 2.58	USD 0.388	USD 0.6

		(JPY 710)	(SGD 3.0)	(HKD 20)	(INR 25)	(VND 12,000)	
		first 2 km	first 1 km	first 2 km	first 2 km	first 2 km	
	Variable Fare	USD 3.18/km (JPY 318 /km)	USD 0.173/km (SGD 0.22 /km)	USD 0.194/km (HKD 1.5 /km)	USD 0.217/km (INR 14 /km)	USD 0.6/km (VND 12,000/km)	
	Fare (6km Ride)	USD 19.8	USD 3.23	USD 3.35	USD 1.26	USD 3.00	
	Rate against Rail	12.4	10.7	3.5	4.0	8.1	7.1

Table 4.15: Fare Price Benchmarking in Selected Asian Cities (Continued)

		Seoul	Taipei	Bangkok		Kuala Lumpur	Manila	Jakarta
	Population	22.7 mil.	8.5 mil.	10.1 mil.		8.0 mil.	20.6 mil.	19.2 mil.
	GDP per capita	USD 23,304	USD 35,059	USD 25,941			USD 7,476	USD 11,719
Average Wage	Public	USD 44,300	USD 23,100	USD 8,000		USD 8,700	USD 2,300	USD 2,600
	Private	USD 26,200	USD 18,800	USD 13,900		USD 9,700	USD 2,600	USD 5,100
Railway		Seoul Metro	Taipei MRT	BTS	MRT	RapidKL	LRT	Jabedetabek
	Network Length	138 km	116 km	33 km	21 km	27 km	13.8 km	235 km
	Base Fare	USD 0.921 (KRW 1,000)	USD 0.674 (TWD 20)	USD 0.467 (THB 15)	USD 0.498 (THB 16)	USD 0.214 (RM 0.7)	USD 0.274 (PHP 12)	USD 0.264 (IDR 3,000)
		first 10 km	first 5 km	first 2 km	first 2 km	first 2 km	first 4 km	first 4 km
	Variable Fare	USD 0.02/km	USD 0.065/km	USD 0.042/km	USD 0.039/km	USD 0.038/km	USD 0.007/km	USD 0.019/km
	Fare (6km Ride)	USD 0.84	USD 0.74	USD 0.63	USD 0.65	USD 0.36	USD 0.29	USD 0.30
Bus	Fare	USD 1.059 (KRW 1,150)	USD 0.506 (TWD 15)	USD 0.373 (THB 12)		USD 0.305 (RM 1.0)	USD 0.251 (PHP 11)	USD 0.308 (IDR 3,500)
		first 10 km	flat	flat		flat	first 5km	flat
	Variable Fare	USD (KRW 20 /km)	n.a.	n.a.		n.a.	USD (PHP 2.2 /km)	n.a.
	Fare (6km Ride)	USD 1.06	USD 0.506	USD 0.373		USD 0.305	USD 0.301	USD 0.308
	Rate against Rail	1.26	0.68	0.59	0.57	0.84	1.05	1.02

Taxi	Fare	USD 2.210 (KRW 2,400)	USD 2.359 (TWD 70)	USD 1.089 (THB 35)		USD 0.915 (RM 3)	USD 0.912 (PHP 40)	USD 0.616 (IDR 7,000)
		first 2 km	first 1.25 km	first 2 km		frist 1 km	frist 0 km	frist 0 km
	Variable Fare	USD 0.639 (KRW 694 /km)	USD 0.674 (TWD 20 /km)	USD 0.156 (THB 5 /km)		USD 0.265 (RM 0.87 /km)	USD 0.456 (PHP 20 /km)	USD 0.317 (IDR 3,600/km)
	Fare (6km Ride)	USD 4.77	USD 5.56	USD 1.71		USD 2.24	USD 3.65	USD 2.52
	Rate against Rail	5.7	7.5	2.7	2.6	6.1	12.7	8.3

Figure 4.1: Rail Fare (6km Ride) against GDP per Capita in Selected Asian Cities (x1,000,000)

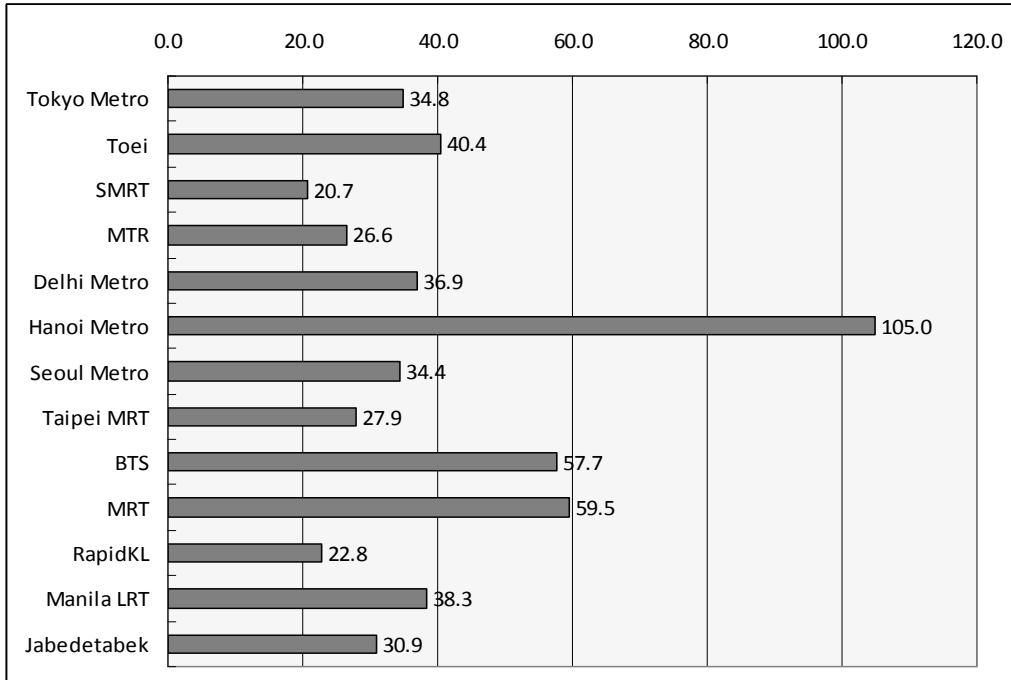
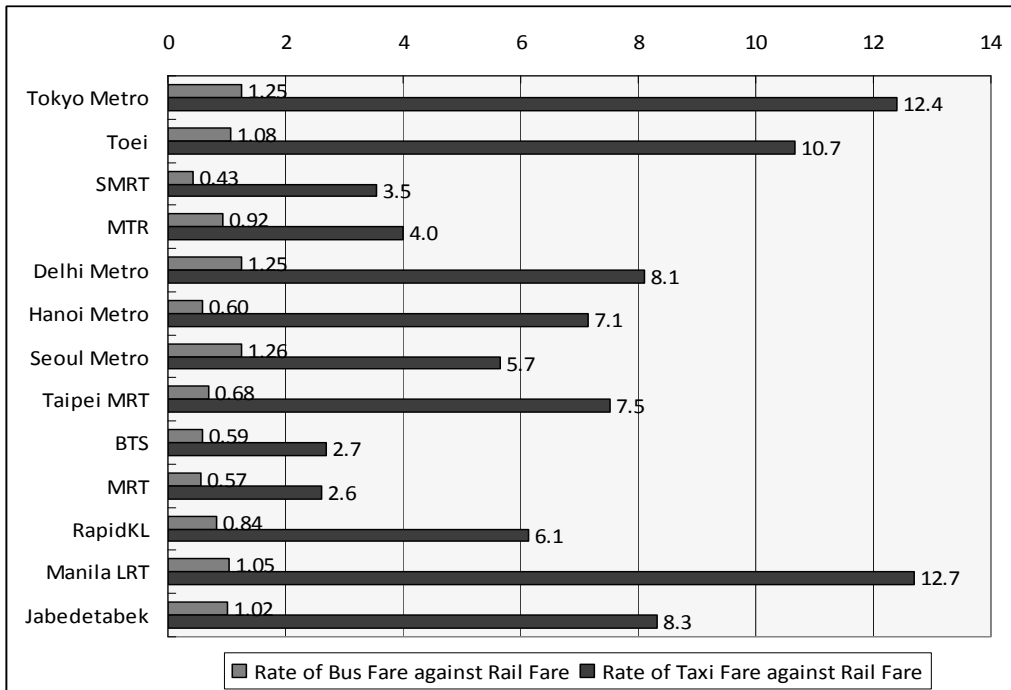


Figure 4.2: Rate of Bus and Taxi Fare against Rail Fare (6km Ride)



4.2.10.Result of Estimate and Proposed Initial Fare

Result of each estimate is summarized in the following table.

Table 4.16: Result of Estimate

	Initial Fare	Detail
Fare based on Willingness-to- Pay	VND 9,051	Appendix 1
Fare based on Total Cost	VND 7,735 – 10,314	Appendix 2
Fare based on Comparison with other Modes	VND 7,808 – 9,594	Appendix 3
Fare Price Benchmarking	VND 6,534 – 12,112	Appendix 4

From the results of estimate, the proposed initial fare is illustrated in the following table.

Table 4.17: Result of Estimate

Year	Fare Calculation Formula	Average lead	Average fare
2016	$6,000 + 600 \times (\text{distance [km]})$ [VND]	5.3 km	VND 9,200

4.2.10 Proposed Fare Table

With the above fare calculation formula and the preliminary assumptions below, the initial fare of Line 2A is proposed as in the following table.

- Fraction of distance between stations : Round-up to 1 decimal place
- Fraction of fare price : Round-up to the nearest thousands VND

Table 4.18: Proposed Fare Table of Line 2A (at the time of opening in 2017)

(Left Bottom: Distance [km], Right Up: Fare [x VND1000])

Sta.1	7	8	8	9	9	11	11	12	12	14	14
0.7	Sta.2	7	8	9	9	10	11	12	12	13	14
1.6	0.9	Sta.3	8	8	9	9	10	11	12	12	13
2.7	2.0	1.1	Sta.4	8	8	9	9	11	11	12	12
3.9	3.2	2.3	1.2	Sta.5	8	8	9	9	11	11	12
5.0	4.3	3.4	2.3	1.1	Sta.6	8	8	9	9	11	11
6.4	5.7	4.8	3.7	2.5	1.4	Sta.7	8	8	9	9	11
7.5	6.8	5.9	4.8	3.6	2.5	1.1	Sta.8	8	8	9	9
8.8	8.1	7.2	6.1	4.9	3.8	2.4	1.3	Sta.9	8	8	9
10.0	9.3	8.4	7.3	6.1	5.0	3.6	2.5	1.2	Sta.10	8	8
11.4	10.7	9.8	8.7	7.5	6.4	5.0	3.9	2.6	1.4	Sta.11	8
12.5	11.8	10.9	9.8	8.6	7.5	6.1	5.0	3.7	2.5	1.1	Sta.12

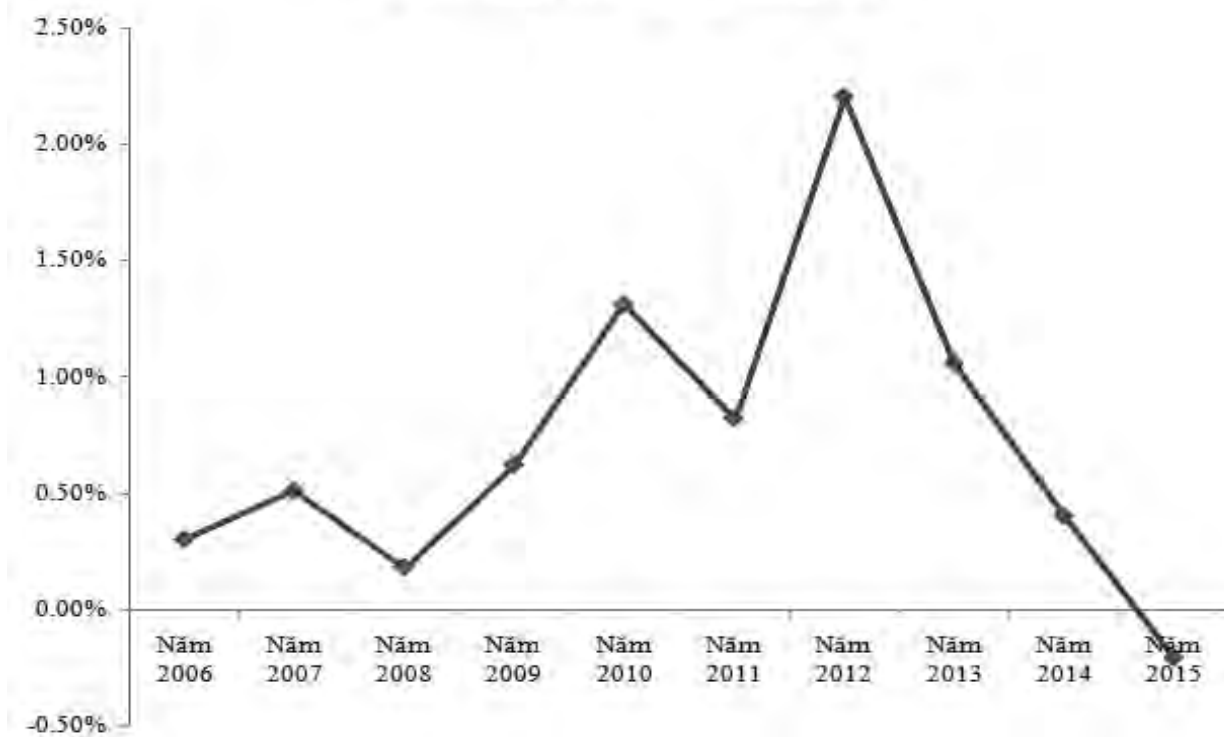
Appendix 1 : Fare Estimated from Willingness-to-Pay Survey

For the estimate of Hanoi Metro fare from willingness-to-pay, relevant survey data was collected and analyzed. The survey targeted the residents in the catchment areas of Line 1 and Line 2. About 30% of the total respondents showed their willingness to use of MRT with the average desired travel distance of 5.7 km.

Study	Feasibility Study for Institution of By-lateral Offset Credit
Executing Agency	Ministry of Environment, Japan
Objective of Study	<ul style="list-style-type: none"> • To understand the choice of transport modes (and modal share) before shifting to MRT • To understand energy efficiency of 2-wheelers & cars, and ave. boarding passengers • To understand the choice of access and egress modes for the ride of MRT
Study Period	October 2012
Target	Residents in catchment areas of MRT Line 1 and Line 2 (5,000 persons)
Survey Method	Face-to-face interview survey 1. Profile of the trips made a day before the date of survey 2. Willingness or no-willingness to use of MRT 3. Whether or not the trips made may be shifted to the use of MRT 4. Desired section to use MRT 5. Willingness-to-pay fare for the use of MRT by range
Effective Distribution #	5,000
Effective Response	576 specified willingness-to-pay fare for MRT out of about 1,500 respondents who stated wiliness to use of MRT.

Fare calculation formula estimated by data analysis	$Y=4966.4+410.53x(\text{distance})$ [VND] (2012 price level)
Average fare (adjusted to 5.3 km ride)	VND 7,162 (2012 price level)
Adjusted to 2016 price level according to the change in CPI (6.7% for 2013, 7.0% for onwards)	VND 8,723 (2016 price level)
Updated in Sept. 2015; adjusted fare in 2017. CPI 9/2013 6,83%; CPI 9/2014 4.61%; CPI 9/2015 0,64%; 6% of following years:	VND 9,051 (fare level 2017)

CPI of September within recent 10 years



Appendix 2 : Fare Estimated from Total Cost

Total cost of urban railway service was once estimated by SAPI Study and preliminarily revised in the course of this TA Project. It should be noted that the fare estimated from total cost differs if use of season pass is taken into consideration or assuming all passengers to use single journey ticket. In fact, earlier SAPI Study assumed 70% of all passengers to use season pass and resultantly actual fare revenue should become lowered (it means estimated break-even fare should be raised to meet the total cost). On other hand, when fare price increases, passenger flow reduces. To a certain threshold, fare increase will not offset reduction in passenger flow.

O&M Cost

(Unit: USD)	2016	2017	2018	2019	2020
Personnel	4,174,456	4,256,308	4,338,160	4,420,012	4,463,511
Energy	2,232,420	2,402,886	2,579,187	2,761,319	2,949,285
Tools, spare parts	1,293,710	1,411,320	1,528,930	1,646,540	1,764,150
Others	2,310,176	2,421,154	2,533,883	2,648,361	2,753,084
Total Cost (1)	10,010,762	10,491,669	10,980,160	11,476,232	11,930,029
TA Revised	8,260,000	11,040,000	35,860,000	37,710,000	39,670,000
Updated (Sep2015)	3,239,254	12,745,751	17,740,633	33,509,886	38,024,518

O&M Cost + Depreciation Cost (E&M)

(Unit: USD)	2016	2017	2018	2019	2020
Total Cost (1)	10,010,762	10,491,669	10,980,160	11,476,232	11,930,029
E&M Depreciation	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000
Total Cost (2)	13,510,762	13,991,669	14,480,160	14,976,232	15,430,029
TA Revised	15,550,000	18,320,000	105,210,000	107,060,000	109,010,000
Updated (Sep2015)	3,239,254	19,777,128	24,772,010	61,849,268	66,608,177

Demand Forecast

	2016	2017	2018	2019	2020
Annual Ridership	16,569,000	29,503,000	35,336,000	41,168,000	52,641,000
Daily Average	45,395	80,830	96,811	112,789	144,222
Annual: TA Revised	25,375,000	36,405,000	90,094,000	119,091,000	143,555,000
Updated (Sep2015)		22,605,000	26,297,000	50,833,000	68,257,000

Estimate of Break-even Fare (i.e. fare revenue = fare x ridership = total cost)

(Total Cost (1) or Total Cost (2)) / (Annual Ridership)	2016 – 2018	2016 – 2020

	(first 3 years)	(first 5 years)
SAPI : Average fare to become break-even to O&M cost	VND 7,735	VND 6,265
SAPI : Average fare to become break-even to O&M cost + E&M depreciation cost	VND 10,314	VND 8,263
TA Revised : Average fare to become break-even to O&M cost	VND 10,252	VND 9,703
TA Revised : Average fare to become break-even to O&M cost + E&M depreciation cost	VND 22,799	VND 23,614

** Proposed calculation by TA is based merely on fare adjustments, not yet taking reduction in demand when fare increases into consideration.*

Appendix 3 : Fare Estimated from Comparison with Other Modes

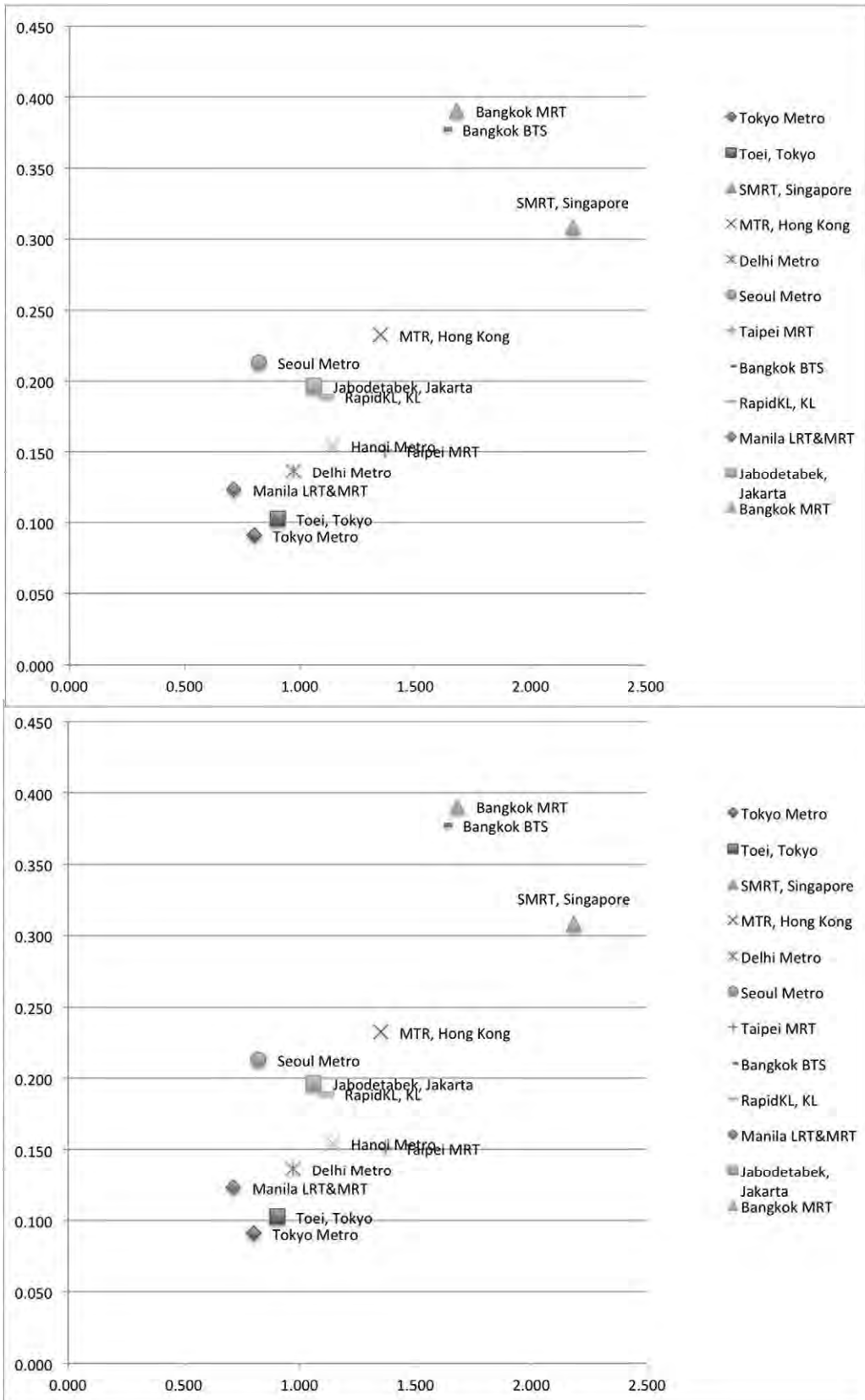
Rate of urban railway fare against fare of other modes (bus and taxi) in Hanoi and selected Asian cities were analyzed and compared. The comparable cases were picked up with the following conditions:

- At the average travel distance of 5.3 km, fare of urban railway must be higher than bus fare (as O&M cost per passenger kilometer for urban railway service is generally higher than that for bus, but quality is generally better).
- At the average travel distance of 5.3 km, fare of urban railway must be significantly lower than taxi fare (in order to effectively promote the modal shift to urban railways).

For the above reasons, the cases of Taipei, Kuala Lumpur, Jakarta, and Hong Kong were selected for determination of appropriate range of fare rates between public transportations.

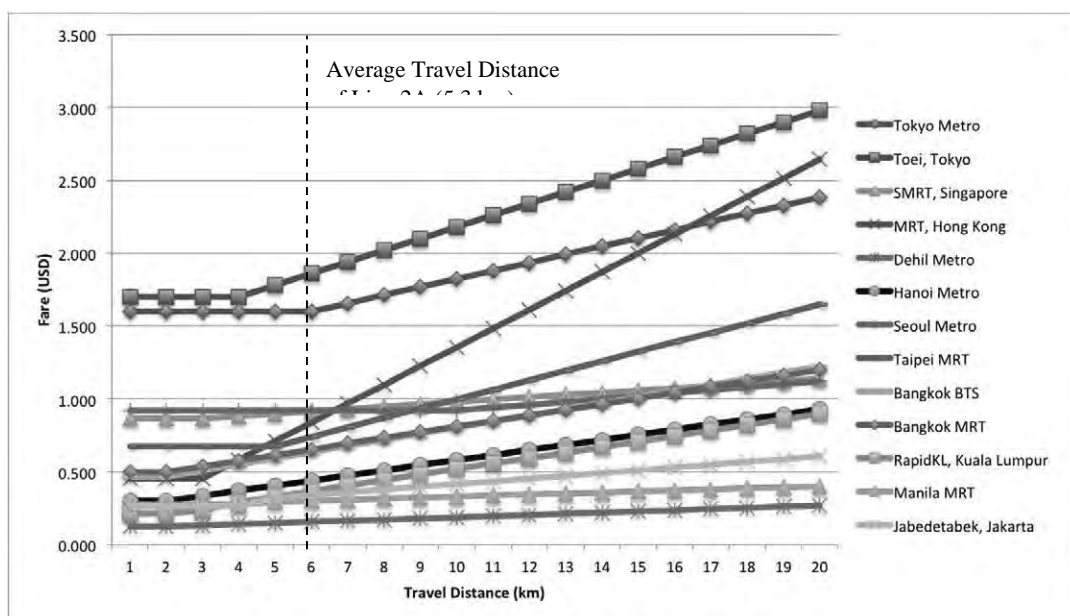
Public Transport Fare in Hanoi	Bus	Taxi
As of 2017 (assumed)	VND 7,000 (flat)	VND 12,000 + 12,000 x distance
5.3 km ride	VND 7,000	51,600

Appropriate Fare Ratio	Lower Limit	Upper Limit
Rate of urban railway fare against bus fare	1.061 (VND 7,425)	1.371 (VND 9,594)
Rate of urban railway fare against taxi fare	0.151 (VND 7,808)	0.233 (VND 11,997)



Appendix 4 : Fare Price Benchmarking with Selected Asian Cities

Fare prices of urban railways in selected Asian cities were studied and compared uniformly in the same currency (USD). As the result, it is suggested that the range of fare price (5.3 km ride) between Jabodetabek Railway in Jakarta and BTS in Bangkok should be suitable for the fare price of Hanoi Metro.



Fare Price of Urban Railways in Selected Asian Cities (5.3 km ride)

Tokyo		Singapore	Hong Kong	Delhi	Hanoi (proposed)
Tokyo Metro	Toei	SMRT	MTR	Delhi Metro	Hanoi Metro
USD 1.600 (VND 32,000)	USD 1.804 (VND 36,080)	USD 0.9038 (VND 18,076)	USD 0.7487 (VND 14,974)	USD 0.1504 (VND 3,008)	USD 0.460 (VND 9,200)
Seoul	Bangkok		Kuala Lumpur	Manila	Jakarta
Seoul Metro	BTS	MRT	RapidKL	MRT & LRT	Jabodetabek
USD 0.921 (VND18,420)	USD 0.6056 (VND 12,112)	USD 0.6267 (VND 12,534)	USD 0.3394 (VND 6,788)	USD 0.2971 (VND 5,942)	USD 0.3267 (VND 6,534)

4.3 PROPOSED FARE STRUCTURE

Fare strategies fall into two basic categories: flat and differentiated.

- With the flat fare, riders are charged the same fare, regardless of the length of trip, time of day, or speed or quality of service.
- With the differentiated fare, fares vary according to one or more of those parameters.

The different types of strategies are summarized as follows:

4.3.1 Flat Fare

The simplest, most common fare strategy is one based on a flat fare.

Under the flat fare structure, riders are charged the same fare for a one-way, one-ride trip regardless of their trip length or the time-of-day. This type of fare structure was adopted as a customer convenience given its simple interpretation and payment method, and is applied to all system routes, regardless of mode type.

In Hanoi, a flat fare is employed for all local bus routes, TRANSERCO bus routes.

4.3.2 Distance-based Fare

Distance-based fares (surcharges beyond a certain distance) are often considered on the theory that people should pay more for longer trips. Travel distance, which may be determined by actual travel distance – charges based upon actual kilometers or general ranges of kilometers.

In Hanoi, a distance-based fare is employed for taxi services.

4.3.3 Zonal Fare

Zonal fares are, in general, on the same theory as distance-based fares. Under this method, the operator/regulator defines service zones (geographic zones) within its service area and determines fares based upon the number of zones crossed.

4.3.4 Time-based (e.g. peak/off-peak) Fare

A time-based method of charging is often considered because: i) the peak period market is generally less sensitive to and has a greater ability to pay for fare increases; and ii) the costs of providing service and accommodating additional riders are significantly higher in peak than in off-peak hours.

On the other hand, time-based pricing further complicates the fare structure. The peak/off-peak differential may involve all off-peak hours or, alternatively, a late-night, weekend, or Sunday-only discount.

4.3.5 Service-based (e.g., bus or rail) Pricing

Differentiating fares by mode (i.e., a higher fare for rail than for bus) or by "speed" (i.e., an express bus surcharge) is often contemplated as a means to reflect i) the higher level of service provided on rail, ii) the longer trip distances typically traveled by rail riders, and iii) the higher operating costs of rail service.

Moreover, because rail riders typically display lower elasticities to fare increases, they may be considered good candidates for higher fares than bus riders. This concept is generally provisioned for most of the urban railway services in comparison with bus transits.

4.3.6 Assessment

The distribution of the flat and basic differentiated fare strategies (distance-based, time-based, and service-based) and the advantages and disadvantages of these strategies are discussed below and in the Table 4.6.

Flat v.s. Differentiated

The principal arguments for differentiation have focused on efficiency and equity considerations and are summarized as follows:

- The higher operating costs associated with serving longer trip service should be reflected in the fare charged. Otherwise, the users of long-distance service are cross-subsidized by the users of shorter-distance service. Also, the former tends to be in higher income brackets than the latter and that flat fares, therefore, essentially result in a regressive transfer of income from the lower to higher income groups. In this connection, differentiated fare should be offered to be inline with the Goal 5: Maximizing Social Equity.
- The users of the higher-cost services (e.g. long-distance) have tended to display lower elasticities than those using the lower-cost services. Therefore, the differentiated fares have a higher revenue-generating potential than do flat fares. This satisfies the Goal 6: Meeting Farebox Recovery Targets.

For the above reasons, differentiated fare scheme is selected for Hanoi Metro Company.

Zonal v.s Distance-based v.s. Time-based

- Goal 2: Increasing Ridership
 - Time-based fare may reduce the ridership when peak hour demand is not significant.
- Goal 4: Reducing Complexity
 - Firstly, the major argument against differentiated pricing in particular was the ease of implementation and administration. In this context, zonal structure is the easiest, distance-based is the next easiest, and time-based is the most difficult to implement and administer. However, electronic fare technology made it easier to introduce these strategies.
 - Secondly, differentiated schemes add to the overall complexity of the fare structure. Zonal fare is the easiest for users to comprehend among three options. Also there is very little complexity in understanding distance-based fare particularly after the introduction of IC smartcard and modern AFC equipment. In the case of time-based fare, there is a potential for conflicts between riders and the Operator regarding the changeover between peak and off-peak periods (this can be addressed technically, but frequent complaints may arise from the users).
- Goal 5: Maximizing Social Equity

- Zonal fare is less equitable than distance-based fare especially for those making short trips and accrossing zones during their short journeys. As time-based fare is equitable only when peak-hour ridership becomes significant, this strategy is not recommendable to be practiced from day 1 of commercial operation, it is an option for the future when the ridership becomes excessive. Thus, distance-based fare is the most equitable and practical alternative among the three.
- Goal 6: Meeting Farebox Recovery Targets
 - Distance-based fare should produce greatest revenue as those making longer trip have higher cost elasticity, while revenue from zonal fare should be less. The potential for time-based differential pricing is unclear, but experiences show that time-based pricing is not likely to generate as much revenue as a distance-based alternative. Especially, the option has very little advantage at the initial years of commercial operation,
- Goal 7: Enabling Incremental Charge
 - There is little difference in efforts required for fare adjustment between zonal and time-based fare unless urban railway network is wide and complicated.

From the above discussion, “Distance-based Fare” is selected for Hanoi Metro Company.

Table 4.19: Advantages and Disadvantages of Alternative Strategies

	Fare Structure Options			
	Flat Fare	Zonal Fare	Distance-based Fare	Time-based Fare
Pros	<ul style="list-style-type: none"> - Easiest to understand (especially when large urban railway network is in operation) - Simplest and least expensive to implement and administer (particularly at the time of fare adjustment) 	<ul style="list-style-type: none"> - Easiest to understand (especially when large urban railway network is in operation) - More equitable than Flat Fare - Should produce more revenue than Flat Fare 	<ul style="list-style-type: none"> - Should produce greatest revenue as those making longer trip have higher cost elasticity - Considered equitable; (especially for those making longer trip) 	<ul style="list-style-type: none"> - Should increase ridership - Allows management of railcar usage through shift to off-peak - Considered equitable as peak hour commuters pay more
Cons	<ul style="list-style-type: none"> - Places inequitable burden on those making short trips - Increase will cause greatest loss of riders - Should produce least revenue 	<ul style="list-style-type: none"> - Less equitable than Distance-based Fare for those making short trips (especially for the short trip riders accrossing zones) - Should produce less revenue than Distance-based Fare - Less popular among riders with long trips compared to Flat Fare 	<ul style="list-style-type: none"> - Difficult to implement and administer without modern AFC equipment (particularly at the time of fare adjustment under large urban railway network) - Less popular among riders with long trips compared to Flat Fare and Zonal Fare 	<ul style="list-style-type: none"> - Difficult to understand (unless majority of riders use IC smartcard) - Little advantage unless peak-hour ridership is excessive - Most complex system and expensive to implement and administer - Potential for modal shift-back to private transports
City Applied	New York, MTA	European Metros	Tokyo Metro, JR Toei, Singapore SMRT, Hong Kong MTR, Delhi Metro, Seoul Metro, Taipei MRT, Manila LRT & MRT, Jabodetabek Railways, European Metros	London Underground Seoul Metro

4.4 TRANSFER PRICING AND DISCOUNT

4.4.1 Transfer Pricing

Transfer pricing policy is a key element in which transferring between routes or modes takes place in the city's public transport network. As Hanoi Metro service is structured so as to encourage extensive transferring between routes or modes, the convenience of free transfers and the loss of revenue under such a policy must be carefully balanced.

4.4.2 Type of Transfer Pricing

In order to meet the requirements to promote public transport network in Hanoi, arrangement of transfer within and between modes is an important issue. For transfer between Hanoi Metro, VNR Line 1, BRT and TRANCERCO bus, 3 alternatives may be considered.

Free Transit	Regardless of the modes to transfer, riders pay for the distance travelled without paying at each transfer.
Transfer Discount	At each transfer, riders are offered with a certain amount of discount.
Full Transfer Charge	Riders pay base fare at any transfer (do nothing).

In consideration of the transfer, following must be considered.

- **IC Card and Non-IC Card** Free transit or transfer discount should be offered for the riders using IC card. Instead no discount will be offered for non-IC users and non-IC route.
- **Fare Structure** Free transit should be offered between the modes introducing differentiated fare structure (e.g. distance-based or zonal), while discount (discounting a certain amount, say VND 1000) may be offered for the transfer between flat fare and differentiated fare structure and between flat fare structures.
- **Operator (Operating Company)** Any transfer fare (either free transit, transfer discount or full transfer charge) may be employed for the transfer between the routes of different operators (i.e. Cross Operator). However, in the case of free transit or transfer discount, sharing scheme must be considered, which may be either i) revenue loss from the discount is equally shared between the operators, or ii) no adjustment is made (do nothing) as transfer between one operator to another and vice versa should be nearly equal.

4.4.3 Choice of Transfer Pricing and Discount Alternatives

Providing that i) Hanoi Metro is a different company from TRANCERCO, ii) the operator of BRT and public buses are the same (i.e. TRANCERCO), and iii) fare structure of BRT is distance-based, transfer fare and discount system is proposed as follows (note that two tables, i.e. IC card option and non-IC card option for public bus, are prepared since the existing public bus service is expected to introduce IC card system at some priority routes).

Table 4.20: Choice of Transfer Fare and Discount System (Non-IC Card Option for Bus Service)

Before and After Transfer	Hanoi Metro Company	VNR Line 1	BRT	Bus (TRANCERCO)
Hanoi Metro Company	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Same Operator 	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	<u>Full Transfer Charge</u> <ul style="list-style-type: none"> • IC-Non IC • Distance-Flat • Cross Operators
VNR Line 1	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	No transfer opportunities	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	<u>Full Transfer Charge</u> <ul style="list-style-type: none"> • IC – Non IC • Distance-Flat • Cross Operators
BRT	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	No transfer opportunities	<u>Full Transfer Charge</u> <ul style="list-style-type: none"> • IC – Non IC • Distance-Flat • Same Operator
Bus (TRANCERCO)	<u>Full Transfer Charge</u> <ul style="list-style-type: none"> • Non IC - IC • Flat-Distance • Cross Operators 	<u>Full Transfer Charge</u> <ul style="list-style-type: none"> • Non IC - IC • Flat-Distance • Cross Operators 	<u>Full Transfer Charge</u> <ul style="list-style-type: none"> • Non IC - IC • Flat-Distance • Same Operator 	<u>Full Transfer Charge</u> (existing system)

Table 4.21: Choice of Transfer Fare and Discount System (IC Card Option for Bus Service)

Before and After Transfer	Hanoi Metro Company	VNR Line 1	BRT	Bus (TRANCERCO)
Hanoi Metro	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Same Operator 	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	<u>Transfer Discount</u> <ul style="list-style-type: none"> • IC-IC • Distance-Flat • Cross Operators
VNR Line 1	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	No transfer opportunities	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	<u>Transfer Discount</u> <ul style="list-style-type: none"> • IC – IC • Distance-Flat • Cross Operators
BRT	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	<u>Free Transit</u> <ul style="list-style-type: none"> • IC - IC • Distance-Distance • Cross Operators 	No transfer opportunities	<u>Transfer Discount</u> <ul style="list-style-type: none"> • IC – IC • Distance-Flat • Same Operator
TRANCERCO	<u>Transfer Discount</u> <ul style="list-style-type: none"> • IC - IC • Flat-Distance 	<u>Transfer Discount</u> <ul style="list-style-type: none"> • IC - IC • Flat-Distance 	<u>Transfer Discount</u> <ul style="list-style-type: none"> • IC - IC • Flat-Distance 	<u>Transfer Discount</u>

	• Cross Operators	• Cross Operators	• Same Operator	
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4.4.4 Proposed Transfer Pricing and Discount System

Taking into account the number of transfers, charging scheme, and sharing of discounts between public transport operators, transfer fare and discount system is proposed.

Table 4.22 : Proposed Transfer Fare and Discount System

	Item	Description
Hanoi Metropolitan Area	Qualification	Riders traveling with IC Card
	Transfer fare system ⁴	<ul style="list-style-type: none"> • Between Hanoi Metro Lines – Free transit • Between Hanoi Metro and VNR Line 1 – Free transit • Between Hanoi Metro and BRT – Free transit • Between Hanoi Metro and TRANCERCO Bus - Full transfer charge (non IC), - Transfer discount of VND 1,000 (IC)
	Transfer time	Free transit and transfer discounts are offered for the riders completed transfer within 30 minutes
	Number of transfers	Free transit and transfer discounts are offered for unlimited number of transfers.
	Charging Scheme	Discontinue and reset travel distance at each transfer station (separate fare collection method)
	Sharing of Transfer Discount between Operators	<ul style="list-style-type: none"> • Between Hanoi Metro Lines – Incurred by Hanoi Metro Company (and not distributed to each line) • Between Hanoi Metro and VNR Line 1 – Cancel out between the operators (and not adjusted/distributed to each operator by performed passenger kilometers, etc.) • Between Hanoi Metro and BRT - Cancel out between the operators (and not adjusted/distributed to each operator by performed passenger kilometers, etc.) • Between Hanoi Metro and TRANCERCO Bus - Cancel out between the operators (and not adjusted/distributed to each operator by performed passenger kilometers, etc.)

⁴ "Free Transit" will result in deduction of base fare of connecting route/mode. Study cannot indicate the exact amount of fare deduction associated with this "Free Transit" because base fares of other routes/modes are yet to be determined at this moment.

4.5 TYPE OF FARE

4.5.1 General

Research on type of fare indicates that most urban railway systems in overseas have varieties of fare categories. The primary reason for the various fare categories is to offer choices of purchase methods. This also meets the Fare Policy Goal 3: Increasing Fare Options.

While many variations exist, there are six basic types of purchase methods, i.e. Individual Trip Ticket, Multiple-ride Ticket, Unlimited-ride Ticket, Group Ticket, Multi-modal Ticket, and Concession Ticket. Given the result of research, Hanoi Metro should select the type of fare, balancing the Goal 3: Increasing Fare Options and Goal 4: Reducing Complexity.

4.5.2 Individual Trip Ticket

In this category, a single fare is charged every time a transit rider takes a trip. Generally, each time a trip is made the transit rider pays the single trip fare or is deducted from a contactless smartcard or stored-value card. This ticket is essential for any transit services.

4.5.3 Multiple-ride Ticket

This type of fare is sold for a specified number of rides, typically over 10 rides. Often, a discount is provided when tickets or tokens are purchased in bulk, offering savings over making individual trip payments.

Offering this ticket or not for Hanoi Metro depends on the priority of the Goal 3: Increasing Fare Options and Goal 4: Reducing Complexity. Perhaps, unlimited-ride ticket as explained below would better satisfy the Goal 2: Increasing Ridership. Alternatively, just a 10-ride ticket may be offered for trial.

4.5.4 Unlimited-ride Ticket

This type of fare allows the transit rider unlimited travel within a specific time period, typically one week or one month. The passes often are priced to provide a discount to frequent riders, if they chose a pass over making individual trip payments.

One-Day Pass is valid for unlimited Metro rides from first use until the end of service on a single day. It is only valid for one passenger each time. The price of a One-Day Pass does not generally include a refundable deposit and cannot be value-added.

In line with the Goal 3: Increasing Fare Options and given Hanoi's objective to promote tourism, one day, 3 days tickets should be offered for Hanoi Metro Company. Meanwhile, perhaps one-month ticket or unlimited tickets for longer durations may be not required from day 1 as not much people would like to pre-pay the fare of one-month or above until they understand the benefits to use the service.

4.5.5 Group Ticket

There is a certain discount for groups of typically 10 or more passengers. No refunds can be given once issued. This type of ticket is useful for school trips, tourists from overseas, and other community events.

In line with the Goal 3: Increasing Fare Options and given Hanoi's objective to promote tourism, an ordinary group ticket should be offered for Hanoi Metro Company.

4.5.6 Multi-Modal Ticket

This is often combined with unlimited-ride ticket, where the riders can enjoy the service of different rail lines or modes (e.g. rail and bus, sometimes plus ferry). In some cases, transfer discount is offered for the riders to transfer from rail-to-rail or rail-to-bus (or vice versa) within a specific time limit.

This promotes the use of public transport and eventually addresses Goal 2: Increasing Ridership and Goal 6: Meeting Farebox Recovery Targets. However, it may take some time until introduction of multi-modal fare since i) second urban railway line will start commercial operation several years later, and ii) fare integration is difficult as the existing bus yet to use electronic ticketing technology. Perhaps, paper transfer tickets may be provided for the riders purchase multiple or unlimited-ride tickets (this is currently exercised in Bangkok).

4.5.7 Concession Ticket

Main legal basis:

- Law on the Disabilities No. 51/2010 / QH12 dated 17/6/2010;
- Law on Elderly No. 39/2009 / QH12 dated 23/11/2009;
- Decree No. 28/2012/ND-CP dated 24/09/2012 of the Government detailing and guiding the implementation of some articles of the Law on the Disabilities;
- Decree No. 06/2011/ND-CP dated 14/01/2011 of the Government detailing and guiding the implementation of some articles of the Law on the Elderly;
- Decree No. 14/2015/ND-CP of the Government dated 02/13/2015 Detailing and guiding the implementation of some articles of the Law on Railways

Based on the above regulations, organizations, individuals, and business enterprises that run railway business, besides providing priority services, are also responsible to provide regulations on priority level, but not less than the prescribed limit.

Various concession tickets are generally offered for target and reward particular behaviors which support the broader aims for public transport. These include, passenger with disabilities, child, elderly (adult), student, tourist, military (and military veteran) and others. This often requires ID to prove that a person is in such categories.

Hanoi Metro Company should offer necessary concession tickets as this supports the Goal 1: Ensuring Affordability of Fares and Goal 5: Maximizing Social Equity.

4.5.8 Proposed Ticket Types

Fare types (tickets and passes) for Hanoi Metro Company are proposed as follows. Details of each fare type are described in the Table X.

- Single Journey Ticket
- Stored Value Ticket 100,000, 200,000, 500,000 (VND)
- 1 Day Ticket, 3 Days Ticket, Monthly Ticket

- Fare for public transport network (Hanoi Pass)
- Group Ticket
- Single Journey Concession Ticket (Child, Elder, Student, Military, Disabled, etc.)
- Concession Pass (Child, Senior, Student, Military, Disabled, Motorist, etc.)

Table 4.23: List of Fare Types in Selected Asian Cities

	Tokyo		Singapore	Hong Kong	Delhi	Seoul	Taipei	Bangkok		Kuala Lumpur	Manila	Jakarta	Hanoi (Proposed)
	Tokyo Metro	Toei	SMRT	MTR	Delhi Metro	Seoul Metro	Taipei MRT	BTS	MRT	RapidKL	LRT & MRT	Jabodetabek	Hanoi Metro
Individual Trip Ticket													
Single Journey	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Round Journey ⁵													
Stored Value ⁶			✓					✓			✓		
IC Smartcard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Multiple Ride Ticket													
10 Rides	✓ ⁷	✓ ⁸											✓
15 Rides								✓ ⁹					
25 Rides								✓					
40 Rides								✓					
50 Rides								✓					
60 Rides						✓ ¹⁰							
Unlimited Ride Ticket													

⁵ Some Japanese Railway Companies (e.g. Tokyu Railway) offer this type of ticket.

⁶ This confines to the magnetic card type of tickets

⁷ Offering additional rides

⁸ Offering additional rides

⁹ Offering discounts

¹⁰ Offering discounts

	Tokyo		Singapore	Hong Kong	Delhi	Seoul	Taipei	Bangkok		Kuala Lumpur	Manila	Jakarta	Hanoi (Proposed)
	Tokyo Metro	Toei	SMRT	MTR	Delhi Metro	Seoul Metro	Taipei MRT	BTS	MRT	RapidKL	LRT & MRT	Jabodetabek	Hanoi Metro
1 Day	✓	✓	✓		✓	✓	✓	✓	✓	✓			✓
2 Days			✓			✓	✓						
3 Days			✓		✓	✓	✓		✓	✓			✓
5 Days						✓	✓						
7 Days						✓				✓			
15 Days									✓	✓			
1 Day Multi-Modal	✓	✓								✓			△
Monthly	✓	✓							✓			✓	△
3 Monthly	✓	✓											
6 Monthly	✓	✓											
<i>Group Ticket/Bulk</i>													
Bulk						✓	✓	✓	✓				
Group (Ordinary)	✓	✓					✓						✓
Group (Student)	✓	✓											
Group (Child/Elderly)													
<i>Multi-Modal Ticket</i>													
Rail-Rail	✓	✓	✓	✓		✓				✓			△
Rail-Bus			✓	✓		✓				✓			△
<i>Concession Ticket</i>													
Disabled	✓	✓	✓	✓		✓	✓			✓			✓
Child/Elderly			✓	✓		✓	✓		✓				✓
Student			✓	✓		✓	✓		✓	✓			✓

	Tokyo		Singapore	Hong Kong	Delhi	Seoul	Taipei	Bangkok		Kuala Lumpur	Manila	Jakarta	Hanoi (Proposed)
	Toei	Tokyo Metro	SMRT	MTR	Delhi Metro	Seoul Metro	Taipei MRT	BTS	MRT	RapidKL	LRT & MRT	Jabodetabek	Hanoi Metro
Employee									✓				
Co-branded							✓		✓				
Charity							✓						
Weekend	✓												
Tourist			✓	✓									✓
Business Traveler									✓				
Foreign Student										✓			
Cyclist							✓						
Motorist													△
Military Person			✓										△
Military Veteran													✓

Overseas Cases: ✓: Type of ticket being offered

Hanoi Metro: ✓: Proposed type of ticket to be offered from day 1

△ : Type of ticket may be offered in a subsequent stage (as and when deemed appropriate)

Table 4.24: Proposed Ticket Types for Hanoi Railway Company

The fare price and discount rates are preliminary proposal and for reference only.

Type of Ticket	Description
Single Journey Ticket (one way)	<ul style="list-style-type: none"> • Eligibility : ordinary passengers • Availability : for sale at ticket counter or ticket vending machines • Fare Price : As in fare table • Validity : on the day of issue • Ticket Collection : upon exit at AFC gate

	<ul style="list-style-type: none"> • Ticket Validation Method : Fare Amount Judgment Type • Value addition : unable. • Ticket Media : IC token (or IC card)
Stored Value 100 (VND100,000)	<ul style="list-style-type: none"> • Eligibility : ordinary passengers • Availability : for sale at ticket counter or ticket vending machines • Fare Price : VND 100,000 + Deposit VND 20,000 (total consumable value of VND 105,000) • Validity : unlimited • Ticket Collection : at ticket counter or ticket vending machines (with return of deposit) • Free Transit : Between Hanoi Railway Company lines, VNR Line 1 and BRT • Transfer Discount : Discount of VND 1000 upon transfer between Hanoi Railway Company lines and TRANCERCO bus within 30 minutes (IC card only) • Media : IC card
Stored Value 200 (VND200,000)	<ul style="list-style-type: none"> • Eligibility : ordinary passengers • Availability : for sale at ticket counter or ticket vending machines • Fare Price : VND 200,000 + Deposit VND 20,000 (total consumable value of VND 215,000) • Validity : unlimited • Ticket Collection : at ticket counter or ticket vending machines (with return of deposit) • Free Transit : Between Hanoi Metro lines, VNR Line 1 and BRT • Transfer Discount : Discount of VND 1000 upon transfer between Hanoi Railway Company lines and TRANCERCO bus within 30 minutes (IC card only) • Media : IC card
Stored Value 500 (VND500,000)	<ul style="list-style-type: none"> • Eligibility : ordinary passengers • Availability : for sale at ticket counter or ticket vending machines • Fare Price : VND 500,000 + Deposit VND 20,000 (total consumable value of VND 550,000) • Validity : unlimited • Ticket Collection : at ticket counter or ticket vending machines (with return of deposit) • Free Transit : Between Hanoi Railway Company lines, VNR Line 1 and BRT • Transfer Discount : Discount of VND 1000 upon transfer between Hanoi Railway Company lines and TRANCERCO bus within 30 minutes (IC card only) • Media : IC card
1 day Pass	<ul style="list-style-type: none"> • Eligibility : ordinary passengers (only valid for one passenger at a time) • Availability : for sale at ticket counter or ticket vending machines • Fare Price : (upon opening of first line) VND 30,000 + Deposit VND 20,000 • Validity : from first use until the end of service on a single day (unlimited use of Hanoi Metro lines within the validity period) • Ticket Collection : at ticket counter or ticket vending machines (with return of deposit) • Value Addition : unable • Free Transit : not available • Transfer Discount : not available • Media : IC card
3 days Pass	<ul style="list-style-type: none"> • Eligibility : ordinary passengers (only valid for one passenger at a time) • Availability : for sale at ticket counter or ticket vending machines • Fare Price : (upon opening of first line) VND 90,000 + Deposit VND 20,000 • Validity : from first use until the end of service on the expiry day (unlimited use of Hanoi Metro lines within the validity period) • Ticket Collection : at ticket counter or ticket vending machines (with return of deposit)

	<ul style="list-style-type: none"> • Value Addition : unable • Free Transit : not available • Transfer Discount : not available • Media : IC card
Monthly Pass	<ul style="list-style-type: none"> • Eligibility : ordinary passengers (only valid for one passenger at a time) • Availability : for sale at ticket counter or ticket vending machines • Fare Price : (upon opening of first line) VND 130,000 + Deposit VND 20,000 • Validity : from first use until the end of service on the expiry day (unlimited use of Hanoi Metro lines within the validity period) • Ticket Collection : at ticket counter or ticket vending machines (with return of deposit) • Value Addition : unable • Free Transit : not available • Transfer Discount : not available • Media : IC card
Hanoi Pass (1 day, 3 days, and Monthly)	<ul style="list-style-type: none"> • Eligibility : ordinary passengers (only valid for one passenger at a time) • Availability : for sale at ticket counter or ticket vending machines • Fare Price : 1 day pass : VND 60,000 + Deposit VND 20,000 3 days pass : VND 180,000 + Deposit VND 20,000 Monthly pass : VND 600,000 + + Deposit VND 20,000 • Validity : from first use until the end of service on the expiry day (unlimited use of Hanoi Metro lines within the validity period) • Ticket Collection : at ticket counter or ticket vending machines (with return of deposit) • Value Addition : unable • Media : IC card
Group Ticket (Single journey, one way)	<ul style="list-style-type: none"> • Eligibility : group passengers • Availability : for sale at ticket counter or ticket vending machines • Fare Price : Group over 10 passengers – 10% discount from standard fare Group over 40 passengers – 20% discount from standard fare • Validity : On the day of issue (no refund) • Ticket Collection : upon exit at AFC gate • Ticket Validation Method : Fare Amount Judgment Type • Value addition : unable • Media : IC token (or IC card)
Single Journey Student (etc.) Concession	<ul style="list-style-type: none"> • Eligibility : Student, police, and military personnel • Availability : for sale at ticket counter on presentation of valid ID • Fare Price: 30% discount from standard fare • Ticket Collection : upon exit at AFC gate • Ticket Validation Method : Fare Amount Judgment Type • Free Transit : Between Hanoi Metro lines, VNR Line 1 and BRT • Transfer Discount : Discount of VND 1000 upon transfer between Hanoi Metro lines and TRANCERCO bus within 30 minutes (IC card only)

	<ul style="list-style-type: none"> Media : IC token (or IC card)
Single Journey Disabled Resident (etc.) Concession	<ul style="list-style-type: none"> Eligibility : Residents with disabilities, military veteran Availability : for sale at ticket counter on presentation of valid ID Fare Price : 70% discount from standard fare Ticket Collection : upon exit at AFC gate Ticket Validation Method : Fare Amount Judgment Type Free Transit : Between Hanoi Metro lines, VNR Line 1 and BRT Transfer Discount : Discount of VND 1000 upon transfer between Hanoi Metro lines and TRANCERCO bus within 30 minutes (IC card only) Media : IC token (or IC card)
Single Journey Child and Elder Concession	<ul style="list-style-type: none"> Eligibility : residents at the age of 12 and below or 60 and above Availability : for sale at ticket counter on presentation of valid ID Fare Price : 50% discount from standard fare Ticket Collection : upon exit at AFC gate Ticket Validation Method : Fare Amount Judgment Type Free Transit : Between Hanoi Metro lines, VNR Line 1 and BRT Transfer Discount : Discount of VND 1000 upon transfer between Hanoi Metro lines and TRANCERCO bus within 30 minutes (IC card only) Media : IC token (or IC card)
Student (etc.) Concession Pass (Monthly)	<ul style="list-style-type: none"> Eligibility : Student, military Availability : for sale at ticket counter on presentation of valid ID Fare Price : 30% discount from standard fare of Monthly Pass or Hanoi Pass (monthly) Media : IC card (with photograph of the passenger printed on card) Others : same as the conditions of Monthly Pass or Hanoi Pass (monthly)
Disabled Resident (etc.) Concession Pass (Monthly)	<ul style="list-style-type: none"> Eligibility : residents with disabilities, military veteran Availability : for sale at ticket counter on presentation of valid ID Fare Price : 70% discount from standard fare of Monthly Pass or Hanoi Pass (monthly) Media : IC card (with photograph of the passenger printed on card) Others : same as the conditions of Monthly Pass or Hanoi Pass (monthly)
Child and Elder Concession Pass (Monthly)	<ul style="list-style-type: none"> Eligibility : residents at the age of 12 and below or 60 and above Availability : for sale at ticket counter on presentation of valid ID Fare Price : 50% discount from standard fare of Monthly Pass or Hanoi Pass (monthly) Media : IC card (with photograph of the passenger printed on card) Others : same as the conditions of Monthly Pass or Hanoi Pass (monthly)
Motorist Concession Pass (Monthly)	<ul style="list-style-type: none"> Eligibility : Motorist (Park & Ride users) Availability : for sale at ticket counter on presentation of valid ID and motorbike license Fare Price : Same as the standard price of Monthly Pass or Hanoi Pass (monthly). The pass holder may use motorbike parking (Park & Ride facility) managed by Hanoi Metro at free of charge. Media : IC card (with photograph of the passenger printed on card) Others : same as the conditions of Monthly Pass or Hanoi Pass (monthly)

4.6 CONCLUSION

The study summarizes the experiences of some countries in the world based related strategies, policies and regulations in Vietnam, including the transport service development strategy, social policies and regulations on pricing for goods and services, to propose fare strategy, the fare, the fare type suitable for conditions of initial development of urban railway transport services in Hanoi. The specific proposals are shown below:

4.6.1 Fare Strategy

comparative analysis is carried out between i) flat fare, ii) zonal fare, iii) distance-based fare, and iv) time-based fare. The Study concluded that the distance-based fare system should be selected as this can maximize social equity and fare revenue.

4.6.2 Proposal for Fare Price in 2017

- From the results of estimate, the proposed initial fare is illustrated in the following table.

Year	Fare Calculation Formula	Average lead	Average fare
2017	$6,000 + 600 \times (\text{distance [km]})$ [VND]	5.3 km	VND 9,200

(Left Bottom: Distance [km], Right Up: Fare [x VND1000])

Sta.1	7	8	8	9	9	11	11	12	12	14	14
0.7	Sta.2	7	8	9	9	10	11	12	12	13	14
1.6	0.9	Sta.3	8	8	9	9	10	11	12	12	13
2.7	2.0	1.1	Sta.4	8	8	9	9	11	11	12	12
3.9	3.2	2.3	1.2	Sta.5	8	8	9	9	11	11	12
5.0	4.3	3.4	2.3	1.1	Sta.6	8	8	9	9	11	11
6.4	5.7	4.8	3.7	2.5	1.4	Sta.7	8	8	9	9	11
7.5	6.8	5.9	4.8	3.6	2.5	1.1	Sta.8	8	8	9	9
8.8	8.1	7.2	6.1	4.9	3.8	2.4	1.3	Sta.9	8	8	9
10.0	9.3	8.4	7.3	6.1	5.0	3.6	2.5	1.2	Sta.10	8	8
11.4	10.7	9.8	8.7	7.5	6.4	5.0	3.9	2.6	1.4	Sta.11	8
12.5	11.8	10.9	9.8	8.6	7.5	6.1	5.0	3.7	2.5	1.1	Sta.12

4.6.3 Application of Transfer Fare

- Transfer fare and discount system for travelling across the public transport network in Hanoi Metropolitan Area is proposed as follows.

Item	Description
Qualification	Riders traveling with IC Card
Transfer fare system	<ul style="list-style-type: none"> • Between Hanoi UR Lines – Free transit • Between Hanoi UR and VNR Line 1 – Free transit • Between Hanoi UR and BRT – Free transit • Between Hanoi UR and TRANSERCO Bus - Full transfer charge (non IC), - Transfer discount of VND 1,000 (IC)
Transfer time	Free transit and transfer discounts are offered for the riders completed transfer within 30 minutes
Number of transfers	Free transit and transfer discounts are offered for unlimited number of transfers.
Charging Scheme	Discontinue and reset travel distance at each transfer station (separate fare collection method ¹¹)
Sharing of Transfer Discount between Operators	<ul style="list-style-type: none"> • Between Hanoi UR Lines – Incurred by Hanoi UR Company (and not distributed to each line) • Between Hanoi UR and VNR Line 1 – Cancel out between the operators (and not adjusted/distributed to each operator by performed passenger kilometers, etc.) • Between Hanoi UR and BRT - Cancel out between the operators (and not adjusted/distributed to each operator by performed passenger kilometers, etc.) • Between Hanoi UR and TRANSERCO Bus - Cancel out between the operators (and not adjusted/distributed to each operator by performed passenger kilometers, etc.)

4.6.4 Proposal for Fare Types

- Fare types (tickets and passes) for Hanoi UR are proposed as follows. Details of each fare type are described in 4.5.8 of the fare policy report.
 - Single Journey Ticket
 - Stored Value Ticket 100, 200, 500 thousand VND
 - 1 Day Ticket, 3 Days Ticket, Monthly Ticket

- Hanoi Pass
- Group Ticket
- Single Journey Concession Ticket (Child, Elder, Student, Military, Disabled, etc.)

References:

Siemens 2014, The Mobility Opportunity;

baodatviet.vn 20/5/2015, <http://baodatviet.vn/kinh-te/thi-truong/gia-xang-tiep-tuc-tang-1200-dong-3269110/#slideshow>;

CHAPTER 5 FARE REGULATION FRAMEWORK

5.1 GENERAL

The purpose of this Chapter is to support the development of regular, systematic and sophisticated fare regulation mechanisms that will make it possible to sustain the provision of urban railway services and enhance quality, while keeping services affordable.

Hanoi Metro Company will face increasing significance to meet growing demand, higher quality expectations from customers, and rising costs of production factors, particularly labour and energy. The innovation required to improve quality and environmental performance is also costly.

Fare regulation shall, therefore, meet and balance all of these requirements for the sustainable development of urban railways.

5.2 FARE REGULATION PRINCIPALS

Principles of fare regulation include the following:

In line with the Goal 1: Ensuring Affordability of Fares

- Hanoi Urban Railway shall safeguard public interest on all aspects of fares charged by the Operator, ensuring those riders most in need of the service are not adversely affected by fare adjustment.
- Fare regulation shall be, through regulated prices, envisaged to limit the degree of monopolistic abuse of a particular urban railway and thereby avoid unreasonable escalation of fare price.

In line with the Goal 6: Meeting Farebox Recovery Targets

- Fare regulation should envisage the operations to meet the farebox recovery target.
- Fare regulation shall help generate the necessary margins to innovate and to invest in order to meet the needs of the future, notably by providing high quality services and achieving productivity improvements.

In line with the Goal 7: Enabling Incremental Charge

- The Operator should be allowed to increase fare at a rate above inflation if passenger expectations are to be met as low or falling fares and insecure funding regimes lead to a long term decline in service quality.
- The Operator should be provided with some freedom to set fare price within the context of fare policy. Some commercial freedom should be given to the regulated party for the Operator to improve quality and promote innovations.

In line with the Goal 8: Maximizing Political Acceptability

- Social and political pressures to keep fares low usually involve price interventions. Hanoi Metro Company should, through its fare regulation framework, seek social / political acceptability and the informational requirements from the general public.

- For this purpose, pricing principles must be put in practice by means of concrete rules.

5.3 PREMISES

For designing of fare regulation framework, following assumptions were made.

1) Establishment of O&M Company

Hanoi Metro Company was established in November 2014 and has officially operated since July 2015

2) Full Functioning of PTA

According to the discussion with PTA Project under the initiative of World Bank, full functioning of PTA will take place in around 2022.

3) Company Model

The O&M Company is anticipated to start with a utility company under planning assignment scheme, and later transform to a business company under order scheme.

- From 2017 to 2021 Planning Assignment method is applied
- From 2022 onward Order method, direct contracting , bidding to be applied when appropriately

4) Opening of Each Line

Each line is anticipated to become operational with the period indicated as follows.

- Opening of Line 2A 2017
- Opening of Line 3 2019
- Opening of Line 2 2021

5.4 EXISTING REGULATORY FRAMEWORK

The public transportation is generally regulated by local municipalities in Vietnam. This section describes the existing regulatory framework of public transport services in Hanoi.

5.4.1 Bus

- In Hanoi, bus service regulations are made on the basis of the official documents including laws, Decrees, Circulars, and Decisions of the central government and Decisions of the local government.
- Currently new decision on fare of a single journey ticket is 7,000, 8,000 and 9,000VND by distance while it also presents that the fare of a monthly ticket is 100,000VND/ticket/month for a single route and 200,000 VND/ticket/month for a multiple routes respectively. The fare level is regulated politically and socially low. Rigid fare regulation discourages the private investment, and rather shrinks the bus services to catch up with requirements.
- Hanoi's existing fare regulation is characterized as unclear and complicated procedures: The fare adjustment proposals are assessed throughout the relevant authorities including DOT, DOF, HAPI/DPI, People's Committees, and TRAMOC, but the regulations on criteria are not clearly defined.

5.4.2 Vietnam National Railways

- Prime Ministerial Decision 34/2003/QĐ-TTg (March 2003) established the state-owned Vietnamese Railway Corporation (VNR) to operate the national railways. Decree 34/2003/ND-CP (April 2003) and Decision No. 1891/2003/QĐ-BGTVT dated 01/7/2003 of MOT to assign the Vietnam Railway Administration (VNRA), to perform governmental management function about railway transport. VNRA is responsible to advise in development of the rail sector and also assist in overseeing the performance of VNR.
- Whenever there were cost increases, VNR would apply to the government to adjust fares to cover their costs. Fares are reviewed by VNRA, MOT, MOF and other line agencies of the Central Government. This facilitated a representation of views aimed at making decisions more acceptable to the Government, yet the regulations don't strictly define who evaluates what with what criteria.
- In accordance with Decree 107/2012/ND-CP of the Government dated 20/12/2012 prescribing functions, responsibilities, powers and organizational structure of the Ministry of Transport, Decree No. 175/2013/ND-CP dated 13/11 / 2013 of the Government regarding charters of the organization and operation of the Vietnam Railways, Decree 130/2013/ND-CP of the Government providing regulations on production and supply of public utility products and services, decision on selling price of products and services of Vietnam Railways is regulated by Vietnam Railways.

5.5 FARE PRICING REGULATION

5.5.1 General

In practice, the most common (in the world) alternatives to control prices in railways are rate of return regulation and price cap mechanisms. The former and the latter regulation conceptually sit at opposite ends of a control mechanisms.

5.5.2 Rate of Return Regulation

$$\text{Revenue Requirement} = \text{Total Cost} = (\text{Variable Cost}) + (\text{Rate Level}) \times (\text{Rate Base})$$

where;

Rate Level: the relation of overall revenues to costs

Rate Base: the investments that are allowed to earn a rate of return

Principle

- The principle is to constrain prices so that the regulated operator earns only a fair rate of return on its capital investment.

Method

- The Regulator determines a revenue requirement based on the Operator's total costs during a test year, according to the total costs, given by a reasonable rate level multiplied by a rate base. The actual procedures are,
 - i) the Operator's costs are reviewed, and unnecessary costs are eliminated,
 - ii) a rate-of-return judged to be fair for the Operator is specified and,
 - iii) prices and their structure are set to generate enough revenues to cover costs and provide a fair rate of return.

Features

- Ridership will not affect the Operator's earnings, since the Operator is entitled to adjust its prices so as to earn its allowed rate of return. Thus, rate of return regulation can offer the Operator full insurance against changes to demand and to income from one period to the next.
- For costs beyond the control of the Operator, the Regulator shall agree to make an adjustment to future revenues to allow recovery of cost escalation, while controllable costs should be under the responsibility of the Operator. Therefore, the Regulator's clear recognition of costs is important. The close tracking of the Operator's profit is essential under this form of regulation.
- The Regulator shall determine the Operator's total revenue requirement. With assumptions about demand, the regulator approves the regulated price(s) on a service-by-service basis. This process necessarily involves some decision about how to allocate the costs of service.

- The price remains fixed until the next scheduled regulatory review. However, the Operator, customers, or the regulator can request a review when prices are inadequate to recover costs or if the realised rate of return appears to be significantly above the regulated rate of return.

5.5.3 Price Cap Regulation

$$CPI - X + K \text{ (or RPI - X + K)}$$

where;

CPI: Customer Price Index (RPI: Retail Price Index)

X: factors related to expected efficiency savings

K: factors related to capital investment requirements

Principle

- In this regulation, the Regulator imposes a price limit, or cap, and the Operator is free to charge any price at, or below, the ceiling. There can be multiple services subject to the cap, and it is the resulting weighted average of prices that is subject to the cap.

Method

- The price cap is based on expected future cash flows and demands with minimal reference to historical costs. Once the price cap is set, the (average) rate of growth in prices is determined by two factors, namely an inflation-based index (i.e. the ‘CPI-factor’) and a total factor productivity (TFP) (i.e. the ‘X-factor’).

Features

- Under a pure price cap, the only element of the Operator’s profit subject to regulatory control is the Operators’ output price(s).
- The idea behind regulating price rather than profit is that capping the price should give the Operator the incentive to produce in a cost-efficient manner and to promote innovation, as the Operator retains any cost reductions until the next review.
- This regulatory objective is in contrast to that of rate-of-return regulation, under which the Regulator effectively reimburses the firm for its realised costs.
- To safeguard the quality, fare regulation may be accompanied by strict licence requirements that set explicit service levels that the regulated operator must meet the required standard. The regulator should also introduce a process whereby performance levels are monitored on a regular basis and both the performance targets established for the Operator as well as its compliance with those targets are reported.
- Consequently, there is scope for the Operator to increase or decrease individual prices as long as the constraint on the average price is satisfied. The weighted average price changes each period, with the weight on a given fare price being the quantity produced in the previous year.
- Under price cap regulation, the Operator tends to transfer certain costs to customers. Specifically, costs that the regulator deems to be “uncontrollable” by the firm are subject to automatic pass-through to customers, where price adjusts immediately to reflect the revised costs.

5.5.4 The Elements Controlled by the Form of Regulation

- Table 5.1 lists the two forms of regulation and the coverage of profit components by the Regulator, where P is the regulated price, Q is quantity, C is controllable cost, and C' is uncontrollable cost. As seen in the table, under the rate-of-return regulation, the Regulator shall be able to assess all elements of profit components, hence high capacity of the Regulator is required to implement and administer the regulation.
- While under the price cap regulation, the Regulator controls price only. Therefore, the required capacity of the Regulator may be lower, but instead in order to safeguard the quality, fare regulation may be accompanied by strict licence requirements that set service levels that the Operator must meet the required standard. The Regulator should also introduce a process whereby performance levels are monitored on a regular basis and both the performance targets established for the Operator as well as its compliance with those targets are reported.

Table 5.1: Elements Controlled by the Form of Regulation

Regulation Type	Regulated Elements	Unregulated Elements
Rate-of-Return	P, Q, C, C'	
Price Cap	P	Q, C, C'

5.5.5 Regulatory Lag and Timing of Review by the Form of Regulation

- “Regulatory lag” refers to the length of time between a significant economic change in a regulated market and the regulator’s reset of regulatory parameters in response to that change.
- With rate-of-return regulation, it is the time between a change in the Operator’s costs and the Regulator’s change in prices to reflect the change in costs. In the context of price cap regulation, it is the time between the reset of the price cap (i.e. the time between formal reviews).
- In either case, the length of regulatory lag is directly proportional to the Operator’s risk exposure. The shorter the fixed period between reviews, the lesser is the Operator’s exposure to risk.
- Under rate-of-return regulation, the timing of reviews can be initiated by the Operator or customers, the Operator has rights to seek reviews prior to the next scheduled review in the event of adverse cost movements against it. Meanwhile under price cap regulation, it can be initiated only by the Operator and is set in advance.
- Therefore, when price cap regulation is employed, the Regulator shall carefully set the timing of review before commencement of regulation as it will determine the Operator’s exposure to the risk.

5.5.6 Assessment

- Although one of the two forms is being applied for urban railways in the world; they are not yet able to be applied directly to urban railway system in Hanoi.

- The main reason is, at first, urban railway lines are fully invested by the Government; like buses and most of the other cities (see Attachment 5.2), urban railway operation in Hanoi will need a substantial subsidy while the Government (HPC) continues to regulate fare price.
- In the long term, within the two forms of regulation, "price cap" regulation can be considered applying effectively for Hanoi urban railway system corresponding to mechanism of placing order (or later direct contracting, bidding) which is being applied.
- "Rate of return" regulation can be considered adopting initially corresponding to the mechanism of planning assignment that is being applied in Vietnam - Decree 130/2013/ND-CP.
- Whether "price cap" regulation or "rate of return" regulation is applied, additional provisions should be incorporated into the contract to be consistent with the framework of Vietnam administration and practical conditions in Ha Noi.
- In particular, PPP investment method is applied to urban railway line, specific additional provisions should be applied flexibly, depending on the characteristics of each line and its operation plan (presented in feasibility study report).

Table 5.2: Comparison of Regulatory Systems – Rate of Return Regulation v.s Price Cap Regulation

	Rate of Return Regulation	Price Cap Regulation
Pros	<ul style="list-style-type: none"> • Relatively simple and easily understandable by both the Regulator and the Operator • Able to maintain financial viability of the Operator by reviewing the costs on an annual basis and allowing for justified cost increases • More certain about profits of the Operator 	<ul style="list-style-type: none"> • More incentives for the Operator to cut costs since any reduction in costs allows them to receive a higher profit. • Allows the Regulator to set fare prices reflecting best practice in Vietnam or international benchmarking. • Less regulatory costs since control items are little and relatively easier to implement and administer
Cons	<ul style="list-style-type: none"> • Less incentives for the Operator for cost reductions or the improvement of service as they are guaranteed revenue plus a certain profit. • Difficult to determine a “fair” rate of return. (difficult to reach agreement between the Regulator and the Operator) • More incentive for the Operator to overstate its costs and its asset base. • More likely to promote unnecessary boosts of the additional investments as any costs may be passed on to the riders. • Greater regulatory costs due to many elements to control. • Less incentive for the operator to cut costs. 	<ul style="list-style-type: none"> • Potential to set the price control too loosely. If the cap is too high, then too little of the surplus is transferred to consumers. • Potential to set the price control too tightly. If they are set too low, the Operator may be unable to break even. It may result in possible lowering of service levels. • In need of establishing the way of quality assessment to safeguard the level of service.
Countries Applied	Japan, Canada, United States	Singapore, Hong Kong, UK
Assessment	<ul style="list-style-type: none"> • May be suitable for the country/city with extensive experience of controlling price, cost, and quality • Difficult to incentivize the Operator without special incentive system, such as Yardstick Regulation with horizontal separation in Japan. 	<ul style="list-style-type: none"> • Relatively easier to implement and administer under the limited capacity of the Regulator • To safeguard the quality, fare regulation may be accompanied by strict licence requirements. • A process is required where performance levels are monitored on a regular basis.

5.6 IMPLEMENTATION OF FARE REVIEW

5.6.1 Types of Fare Adjustment

- Fare adjustment involves the increase or decrease of the fare charged to a rider. While simple in concept, this definition is complicated in application because most urban railway systems have a large number of fare categories.
- The following general types of fare adjustment (fare level, fare structure, and type of fare) are summarized in Table 5.3. Hanoi Metro Company should strategically employ fare adjustment schemes and seek to meet the Fare Policy Goals (i.e. Goal 1: Ensuring Affordability of Fares, Goal 2: Increasing Ridership, Goal 3: Increasing Fare Options, Goal 4: Reducing Complexity, Goal 5: Maximizing Social Equity, Goal 6: Meeting Farebox Recovery Targets, Goal 7: Enabling Incremental Charge, and Goal 8: Maximizing Political Acceptability).

Table 5.3: Types of Fare Adjustment

Changes in General Fare Level	<ul style="list-style-type: none"> • This type of change involves increases or decreases in adult fares that are accompanied by corresponding changes in the other fare categories. • The percent changes in fare levels among fare categories are kept generally the same, except for differences that occur because of rounding fares.
Changes in Pricing Relationships	<ul style="list-style-type: none"> • This strategy involves altering the pricing relationships among current fare categories. In other words, it does not keep the percent changes in fare levels among fare categories the same, but instead seeks to deliberately modify them. • An example is the “Deep Discount Fare” approach, in which the discounts for multiple-ride tickets are increased from smaller discounts to 20 to 30 percent off of cash fares. • Also covered in this category are the charging of different fare levels for different hours of the day and days of the week, and provision of discounts for senior citizens.
Changes in Fare Categories	<ul style="list-style-type: none"> • A common form of this type of change is introduction or withdrawal of a particular fare purchase method. Payment methods typically include individual payment, multiple-ride tickets, and unlimited-ride passes. • Alternatively, a fare category change may be defined in terms of rider characteristics, such as with school fares; or trip characteristics, as with express bus fares.
Changes in Fare Structure Basis	<ul style="list-style-type: none"> • This type of fare structure change is concerned with the basis on which fares are calculated. (i.e. flat, zonal and distance-based).
Free Transit	<ul style="list-style-type: none"> • This type of change eliminates the charging of fares to transit riders altogether. This strategy has been applied to either specific areas, selected services, or all services during all operating periods.

5.6.2 Decision Making Procedure

- Rail fare increases are always unpopular. In the experience in Asian mega cities, there are five typical mechanisms of decision making, namely i) Mandating quasi-governmental bodies with independent decision making power, ii) Consultation with legislative council, iii) Consultation with general public, iv) Verification by third party, and v) Direct government regulation.
- The procedure for adjustment of the fare levels varies significantly according to the regulatory environment. The decision may be entirely in the hands of the government. It may fall to the legislative council / committee, either with independent power to make decision or just consultation / notification.
- They take different approaches, but most of these cities introduce a system which involves a wide range of stakeholders for consultation in the fare decision-making process to ensure compliance with the vision for urban mobility.
- Learning from such experience, Hanoi Metro Company should promote cooperation between a range of stakeholders in setting out and adjusting fare levels. This has played a major role in enabling public transport networks to implement good fare review practices in the interest of passengers, the Operators, the Regulator alike (actual institutional proposal is made in Chapter 6).

Table 5.4: Fare Adjustment Procedure in Selected Asian Mega Cities

Decision Making Procedure Involved	Application
Mandating Quasi-governmental Bodies with Independent Decision Making Power	<ul style="list-style-type: none"> • Public Transport Council (with reps. of community), Singapore • Fare Fixation Committee, India
Consultation with Legislative Council	<ul style="list-style-type: none"> • Legislative Council for Transport, Japan • Panel of Transport of Legislative Council, Hong Kong
Consultation with General Public	<ul style="list-style-type: none"> • Public Consultation, Japan • Public Consultation, Hong Kong • Public Comment, US
Verification by Third Party	<ul style="list-style-type: none"> • Independent Third Party Verifier, Hong Kong
Direct Government Regulation	<ul style="list-style-type: none"> • Department of Transportation, Taipei City Government, Taiwan • Transportation Bureau (TB) of Seoul Metropolitan Government, Korea

5.6.3 Fare Adjustment Criteria

- Community for Metros (CoMET)¹² presented, in UITP Fare Management Conference 2013, the practices of fare adjustment criteria and ranked in the order as illustrated in the Table 5.5.
- Establishing and using a price adjustment formula is widespread practice, as it can increase transparency and reduce uncertainty. On the other hand, circumstances not foreseen in the formula may arise and could affect negatively any of the involved stakeholders.
- Therefore, successful use of a fare adjustment formula in public transport thus depends on striking a balance between transparency and flexibility. Otherwise, mandating independent regulator to set efficient price, perhaps with the involvement of community members, can be a good alternative for Hanoi Metro Company.
- For the actual formulae to be practiced for fare adjustment, CoMET introduces the one currently used in Hong Kong (see Appendix), where overall fare adjustment rate is linked to CPI, Wage Index, and productivity factor. This formula may be proposed for Hanoi Metro Company.

Table 5.5: Alternatives of Fare Adjustment Criteria

	Fare Adjustment Criteria	Feature
Better Regulation	Fare formulae are applied	<ul style="list-style-type: none"> • Establishing and using a price adjustment formula enhances transparency and reduces uncertainty in fare adjustment.
	Independent regulator to set efficient price	<ul style="list-style-type: none"> • Fare set by an independent regulator, perhaps with the involvement of community members, can balance efficiency, transparency and flexibility.
	Inflation adjusted + X (above inflation)	<ul style="list-style-type: none"> • Fare increases at a rate slightly above inflation effectively reduces risk of the Operator, while keeping general affordability of the customers.
	Inflation adjusted – X (below inflation)	<ul style="list-style-type: none"> • Annual increase at a rate lower than the inflation rate to ensure that consumers have benefited, thus facing less public pressures
	General principle followed (In line with inflation)	<ul style="list-style-type: none"> • Fares to rise basically in line with inflation to meet uncontrollable cost increase, while keeping some flexibility as unforeseeable risk may arise
	Fare formulae but NOT rigidly applied	<ul style="list-style-type: none"> • Fares formulae applied, while keeping some flexibility as unforeseeable risk may arise. This may result in making the fare regulation impractical.
	Farebox recovery target	<ul style="list-style-type: none"> • Initial fare level should be designed to meet farebox recovery goal. Fare adjustment to recover farebox means cost-pass through to the customers.
	Deficit funding / net cost adjustment (ad hoc)	<ul style="list-style-type: none"> • This would result in huge pressures on the government's budget and lacking of transparency to the customers.

¹² CoMET is a programme of international railway benchmarking. It is made up of a consortium of large metro systems from around the world to build measures to establish metro best practice. (<http://www.comet-metros.org/>)

	No explicit principles	<ul style="list-style-type: none">• No explicit principle underlying fare adjustment means no regulatory control is enforced to the Operator.
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5.6.4 Timing of Reviews

- CoMET suggests that fare reviews should be regular and progressive (ideally yearly) to secure the sustainable development of urban railways and services. In the event of abrupt and steep fare increases, the drop in ridership could be significant. From a public acceptance point of view, small regular variations obviously generate fewer reactions than large increments.
- Therefore, Hanoi Metro Company should envisage a relatively short review, ideally yearly, period as current inflation rate in Vietnam shows high record. Meanwhile, to avoid frequent increase of fare, 2 or 3 yearly fare adjustment would be proposed.
- With the current condition of Hanoi public transport, orientation of general development strategy, including determination to develop public transport, the Study recommends that a combination of fare adjustment and/corresponding to other changes in the urban transport system, such as improvement of scale, capacity, scope of public transport system; improvement of public transport service quality frequency increases, rises in parking fees, etc should be practiced to maintain development of public transport passengers, avoiding heavy ridership drop.

5.6.5 Theoretical Studies

- As fare adjustment decisions may sometimes be based on misperceptions, theoretical studies of public transport demand elasticities should be conducted on a local basis for all modes and the results conveyed to decision-makers.

5.6.6 The General Public

- To enhance transparency and ensure social equity in fare adjustment, Hanoi Railway Company should involve general public in the review process, for instance, i) setting up public comment period for proposed fare adjustment, ii) inviting representatives of community members to the council/committee in charge of fare adjustment, or other ways as appropriate.
- It is necessary to raise awareness of the general public about the actual cost of urban railways and show that: i) passengers pay for only a fraction of the actual cost of their journeys and that the remainder is supported by public (i.e. the tax payers), ii) private car users often underestimate the real cost of using their vehicles, and iii) urban railway services externalities which also have a cost for tax payers.

Table 5.6: Administrative Procedures and Institutional Framework of Rail Fare Regulation in Selected Asian Countries

Country	Administrative Procedure	Institutional Framework
Japan	<ul style="list-style-type: none"> Railway Bureau of Ministry of Land Infrastructure and Transport and Tourism (MLIT) regulates fare, which is capped at cost-related formula. 	<ul style="list-style-type: none"> The regulator, Railway Bureau of MLIT, is not independent from the ministry but a government entity, having the mandates of policy making, regulating, and giving subsidies. (Railway Business Law)
Singapore	<ul style="list-style-type: none"> SMRT proposal subject to approval by Public Transport Council (PTC), a statutory body under Land Transport Authority (LTA) of Ministry of Transport (MOT) 	<ul style="list-style-type: none"> Mandating PTC as a public agency with independent decision making power, composed of members from the society including professionals, businessmen, academics, trade union leaders, NGOs and grassroots community members. (PTC Act)
Hong Kong	<ul style="list-style-type: none"> Fare autonomy of KCRC and MTRC (MTRC is required to consult LegCo) Railway Inspector under the Environment, Transport and Works Bureau regulates safety Transport Department monitors passenger service 	<ul style="list-style-type: none"> Fare Adjustment Mechanism (FAM) Operating Agreement (OA) exchanged between the Regulator and the Operator
India	<ul style="list-style-type: none"> The Central Government constitutes a Fare Fixation Committee for recommending fare review. Fare Fixation Committee reports to the Government and takes approval from the Cabinet Committee on fare revisions. 	<ul style="list-style-type: none"> FFC consisting of a Chairperson (a Judge of a High Court) and two other members (nominated by Central Gov't and the Local Gov't) with a sitting Judge of a High Court (Delhi Metro O&M Act)
Taiwan	<ul style="list-style-type: none"> Fares controlled by Taipei City Government. Department of Transportation (DOT) co-ordinates fares with other transport modes. 	<ul style="list-style-type: none"> The regulator, Taipei City Government, is not independent from the Local Government but a government entity.
Korea	<ul style="list-style-type: none"> Fares controlled by Seoul Metropolitan Government Transportation Bureau (TB) of Seoul Metropolitan Government. 	<ul style="list-style-type: none"> The regulator, Transportation Bureau of Seoul Metropolitan Government, is not independent from the Local Government but a government entity.

5.6.7 Proposed Fare Fixation and Adjustment Mechanism by Period

In consideration of the existing regulatory regime and good practices in Asia as well as the premises explained in 5.3, following mechanisms are proposed for Hanoi Railway Company.

Table 5.7: Proposed Fare Fixation and Adjustment Mechanisms

Period	2017 - 2021	2022 onwards
Company Model	Utility company	Utility company
Urban railway transport service form	Planning assignment	Order (after that, depending on situation, possible to apply mechanism of direct contracting, bidding)
Fare fixation and adjustment mechanism	Cost-of-service method (*) Reasonable cost	Price cap method (approving upper limit)
Fare fixation and adjustment mechanism	WTP, total cost, competitiveness, fare benchmarking	Linked to CPI, WI, Energy Cost Indicator etc.
Fare assessment/review	Once a year	Once a year
Fare adjustment interval (standard)	Every 3 years	Every 3 years (It is possible to shorten the duration corresponding to review result, but not excess once a year)

Note: WTP – Willingness to Pay, CPI – Customer Price Index, WI – Wage Index

* *Cost of service is a form specifying type of “Rate of return” regulation; it is possible to apply appropriately with the planning assignment prescribed in Decree 130/2013/ND-CP (there would be some minor adjustments when applying policies, specific mechanisms applied to Hanoi Railway Company and the urban railway system development strategy in each specific stage)*

5.6.8 Proposed Fare Adjustment Formula

Learning from the good practice of selected Asian countries, following fare adjustment formula is proposed. It is suggested that the formula is for reference only during the Cost-of-Service Regulation, while it will be strictly applied once the Price Cap Regulation is employed.

$$\text{(Rate of Fare Adjustment)} = \alpha (\Delta\text{CPI}) + \beta (\Delta\text{WI})$$

where,

ΔCPI : change in Consumer Price Index over the preceding year

ΔWI : change in Wage Index defined as national (or transport sector) average monthly earnings

$\alpha + \beta = 1$ (α is share of non-personnel cost over O&M cost, β is share of personnel cost over O&M cost of the corresponding year. These figures must be figured out from the result of operational benchmarking during the period from 2017 to 2021.)

Alternatively, utility (i.e. energy) cost may be separately assessed with the following formula.

$$\underline{(\text{Rate of Fare Adjustment}) = \alpha (\Delta\text{CPI}) + \beta(\Delta\text{WI}) + \gamma (\Delta\text{EPI})}$$

where,

ΔEPI : change in Energy Price Index (i.e. electricity cost) over the preceding year

$\alpha + \beta + \gamma = 1$ (α is share of non-personnel non-energy cost over O&M cost, β is share of personnel cost over O&M cost, and γ is share of energy cost of the corresponding year. These figures must be figured out from the result of operational benchmarking during the period from 2017 to 2021.)

In addition, a factor related to the development of Hanoi public transport system is proposed to put into fares within the period of 30 coming years of Hanoi public system in which will have many significant developments; step by step to meet the demand and standards of travel in the city and surrounding areas.

5.7 SUBSIDY SYSTEM

5.7.1 Subsidy Framework Proposed by SAPI Study

- The fare standard calculated from the accumulation of the costs is compared with the one derived from passenger affordability. If the fare standard derived from passenger affordability is higher than the one calculated from the costs, the fare price is set as the fare standard derived from passenger affordability and the difference of two prices is to be saved as fund for future investment.
- When the fare standard derived from passenger affordability is lower than the one calculated from the costs, the fare price is to be set lower and the Hanoi City will render the appropriate amount of subsidies to the company as an operational subsidy.

5.7.2 Subsidy System Proposed by TA Study

(1) Proposed Subsidy System

Fare setting depends heavily on subsidy framework to be established by HPC. The Degree 130/2013/ND-CP prescribes the terms and conditions of subsidy scheme by type of business model. According to the legislation and the assumptions made in Section 5.3, the subsidy scheme for Hanoi Railway Company is proposed as follows:

Table 5.6: Proposed Subsidy System

Period	2017 - 2021	2022 - onwards
Subsidy Scheme	Gap filling between total operation cost and fare revenue payment is in Accordance with reasonable costs in Article 26,27 of Decree 130/2013/ND-CP	Gap filling between total operation cost paid to the Company and fare revenue: payment in accordance with volume and quality of the public services; pre-determined unit price. It is considered to add provisions of reward/penalty relating to scale of passengers actually using the services (compared to the estimation)

(2) Estimated Subsidy Amount

Subsidy amount for the first 6 years of Line 2A commercial operation is indicated in the following table.

Table 5.6: Estimated demand of Subsidy Amount

	2016	2017	2018	2019	2020	2021
Human resource	2,273,803	6,505,487	8,969,394	12,435,546	15,007,565	18,586,337
Electricity	0	1,727,522	2,559,291	5,374,512	5,758,406	8,701,591

	2016	2017	2018	2019	2020	2021
Material, spare parts	332,565	1,766,898	2,449,016	8,668,336	9,064,866	19,452,431
Other cost	632,886	2,745,844	3,762,931	7,031,492	8,193,681	12,821,553
Cost without depreciation	3,239,254	12,745,751	17,740,633	33,509,886	38,024,518	59,561,911
Depreciation	0	7,031,377	7,031,377	28,339,383	28,583,659	32,893,028
Total cost with depreciation	3,239,254	19,777,128	24,772,010	61,849,268	66,608,177	92,454,939
Fare revenue	0	6,714,264	8,261,873	17,359,718	23,011,429	38,938,164
Subsidy (USD)	3,401,216	14,051,721	17,748,737	47,582,014	46,927,157	58,139,522

Note: Above calculation already updated the opening schedule of Line 2A, Line 3 and Line respectively in 2017, 2019 and 2021. However, it has not yet updated much other information, for example total investment amount and fund structure of the line, etc., other large additional investment and training that are not directly incorporated in the cost yet.

5.8 CONCLUSION

- In consideration of the existing regulatory regime and good practices in Asia as well as the general assumptions made, following mechanisms are proposed for Hanoi UR.

Period	2017 - 2021	2022 onwards
Company Model	Utility company	Utility company
Urban railway transport service form	Planning assignment	Order (after that, depending on situation, possible to apply mechanism of direct contracting, bidding)
Fare fixation and adjustment method	Cost-of-service method Reasonable cost (*)	Price cap method (approving only upper limit by Government)
Fare fixation and adjustment mechanism	WTP, total cost, competitiveness, fare benchmarking	Linked to CPI, WI, Energy Cost Indicator etc.
Fare assessment	Once a year	Once a year
Fare adjustment interval (standard)	Every 3 years	Every 3 years

Note: Based on reviewing result, fare adjustment frequency can be decided to be shortened by the competence agency, but not excess once a year.

* Cost of service is a form specifying type of “Rate of return” regulation; it is possible to apply appropriately with the planning assignment prescribed in Decree 130/2013/NĐ-CP (there would be some minor adjustments when applying policies, specific mechanisms applied to Hanoi Railway Company and the urban railway system development strategy in each specific stage)

- Learning from the good practice of selected Asian countries, following fare adjustment formula is proposed. It is suggested that the formula is for reference only during the Cost-of-Service Regulation, while it will be strictly applied once the Price Cap Regulation is employed.

$$(\text{Rate of Fare Adjustment}) = \alpha(\Delta\text{CPI}) + \beta(\Delta\text{WI})$$

where,

ΔCPI : change in Consumer Price Index over the preceding year

ΔWI : change in Wage Index defined as national (or transport sector) average monthly earnings

$\alpha + \beta = 1$ (α is share of non-personnel cost over O&M cost, β is share of personnel cost over O&M cost of the corresponding year. These figures must be figured out from the result of operational benchmarking during the period from 2016 to 2021.)

Please note that, for few first urban railway lines, urban railway fares may be undervalued because the quality of urban railway transport services have not been fully established (operation quality is not good yet; connection with the other transport modes is not good yet; public transport system is uncompleted, and the auxiliary system development for public transport is not focused). Step by step,

when the public transport system is developed to be relatively perfect, it is not necessary to use personal vehicles, fare level can be evaluated to be higher (beyond adjustments of CPI and WI)

. Therefore, *In addition, a factor related to the development of Hanoi public transport system is proposed to put into fares within the period of 30 coming years of Hanoi public system in which will have many significant developments; step by step to meet the demand and standards of travel in the city and surrounding areas.*

- Alternatively, utility (i.e. energy) cost may be separately assessed with the following formula.

$$(\text{Rate of Fare Adjustment}) = \alpha(\Delta\text{CPI}) + \beta(\Delta\text{WI}) + \gamma(\Delta\text{EPI})$$
 where,
 ΔEPI : change in Energy Price Index (i.e. electricity cost) over the preceding year
 $\alpha + \beta + \gamma = 1$ (α is share of non-personnel non-energy cost over O&M cost, β is share of personnel cost over O&M cost, and γ is share of energy cost of the corresponding year. These figures must be figured out from the result of operational benchmarking during the period from 2016 to 2021.)
- Draft of subsidy depends heavily on current information and assumption. The Degree 130/2013/ND-CP prescribes the terms and conditions of subsidy scheme by type of business model. According to the legislation and the assumptions made above, the subsidy scheme for Hanoi UR is proposed as follows:

Period	2016 - 2021	2022 - onwards
Subsidy Scheme	Gap filling between total cost and fare revenue	Offering preferential interest rate for the borrowing of the Company

- Subsidy for the first 4 years of Line 2A commercial operation is indicated in the following table:

Year	Fare + Non-Fare Revenue (bil. VND)	O&M Cost (bil. VND)	E&M Depreciation Cost (bil. VND)	O&M Cost + E&M Depreciation (bil. VND)	Subsidy Amount (bil. VND)
2016	245	259	118	377	132
2017	302	299	118	417	115
2018	360	503	118	621	261
2019	689	890	539	1,429	740

APPENDIX: CASE STUDY ON FARE REGULATION

City	Hong Kong
Latest Reform	2000: MTRC was restructured from being a government-owned statutory corporation to a public-listed company with the government shareholding of about 75%. Feb 2004: HKSARG asked two railways to negotiate a merger
Overall Model	Vertical integration, horizontal separation
Infrastructure Ownership	MTRC: government company, KCRC: fully government-owned statutory corporation
Infrastructure Financing	Mixed: government equity, market borrowings, MTRC / KCRC internal reserves, property financing
Operation (RST O&M)	MTRC (MTR, AR, etc.) KCRC (ER, WR, LR, etc.)
Regulation	Fare autonomy of KCRC and MTRC (MTRC is required to consult LegCo) Railway Inspector under the Environment, Transport and Works Bureau regulates safety Transport Department monitors passenger service
Legal Framework	Fare Adjustment Mechanism (FAM) Operating Agreement (OA)
Fare Adjustment Procedure	<ul style="list-style-type: none"> • MTRCL has autonomy in setting their fares in accordance with commercial principles, having regard to economic conditions, competition from other public transport modes and whether the service is value for money. • In accordance with OA between the Government and MTRCL, MTRCL is required to provide the Government with two independent third party certificates certifying that the fare adjustments are in compliance with the FAM. • MTRCL is also required to formally notify the Panel on Transport of the LegCo and the Transport Advisory Committee three weeks prior to implementation of the new fares in June each year.
Timing of Fare Review	Annually implemented
Fare Adjustment Criteria	<p><i>Annual Δ Fare Adjustment = Δ[Cost Index] - P</i></p> <p><i>Overall Fare Adjustment Rate = $0.5 \times \Delta$CCPI + $0.5 \times \Delta$WI - Productivity Factor</i></p> <ul style="list-style-type: none"> • Cost Index is mainly a function of unit price of wages and energy • P = Productivity Factor: Recognizes the need/ability to reduce inputs over time through technology or other means • Fare adjustment rate for the prevailing year is determined in accordance with a formula linked to the percentage changes in both the Composite Consumer Price Index ("CCPI") and the Nominal Wage Index (Transportation Section) ("Wage Index") in December of the previous year, as well as a productivity factor.

	<ul style="list-style-type: none"> • The Census and Statistics Department publishes the CCPI and Wage Index. With reference to these indices, the computation results of the FAM indicate an adjustment rate for next year.
<p>Involvement of General Public</p>	<ul style="list-style-type: none"> • Transport and Housing Beureau invites views from the public on the fare review. Any views should be addressed in writing to the Transport Department.

City	Singapore
Latest Reform	1995: Former MRT Corporation (MRTC) and other agencies were restructured into Land Transport Authority (LTA) 2000: Singapore MRT Ltd (SMRT, state-owned company) was public-listed; government shares reduced to 62%
Overall Model	Vertical separation, mainly horizontal integration (limited degree of horizontal separation)
Infrastructure Ownership	LTA (formerly MRTC): statutory board appointed by Ministry of Transport (MOT)
Infrastructure Financing	Mainly government (through LTC or former MRTC)
Operation (RST O&M)	– SMRT and subsidiary operates most of MRT and Singapore LRT (LRT). — SBS Transit (private company) operates MRT NE Line and feeder LRT
Regulation	SMRT proposal subject to approval by Public Transport Council (PTC), a statutory body under MOT LTA responsible for safety, operational standards
Legal Framework	Public Transport Council Act (Cap 259B)
Fare Adjustment Procedure	<ul style="list-style-type: none"> • The PTC has put in place a framework to cap overall fare increases in small, regular steps. The annual fare adjustment is based on a formula recommended by the Government-appointed Fare Review Mechanism Committee (FRMC) in 2005. • As fare affordability is one of the key factors considered by PTC in deliberating on the operators' applications for fare increase, a robust indicator to track fare affordability is needed. Until the review in 2005, fare affordability had been monitored through the 5-yearly Household Expenditure Survey (HES) conducted by the Department of Statistics (DOS).
Timing of Fare Review	Annually implemented
Fare Adjustment Criteria	$Price\ Index = 0.5(\Delta CPI) + 0.5(\Delta WI)$ Fare cap = Price Index – Productivity Factor
Involvement of General Public	Mandating PTC as a public agency with independent decision making power. It comprises members from a wide cross-section of the society: union representatives, academia, grassroots leaders, and professionals from the public and private sectors. This facilitated a wide representation of views aimed at making PTC's decisions more acceptable to the public.

City	Japan
Latest Reform	<p>In 2004, The Tokyo Metro (a private company jointly owned by the Japanese government and the Tokyo metropolitan government) replaced the Teito Rapid Transit Authority, commonly known as Eidan or TRTA (administered by the MLIT, and jointly funded by the national and metropolitan governments).</p> <p>The other major subway operator is Tokyo Metropolitan Bureau of Transportation (Toei) which is owned solely by the government of Tokyo.</p>
Overall Model	Vertical integration, horizontal separation
Infrastructure Ownership	Tokyo Metro: Tokyo Metro Co., Ltd. / Toei: Tokyo Metropolitan Bureau
Infrastructure Financing	Mixed public-private financing: primarily by the operators, government subsidies for municipal subways
Operation (RST O&M)	Inhouse (Tokyo Metro and Toei)
Regulation (Fare)	Railway Bureau of Ministry of Land Infrastructure and Transport — Fares capped at cost-related formula
Legal Framework	Railway Business Law
Fare Adjustment Procedure	<ul style="list-style-type: none"> • Railway companies are required to obtain approval from MLIT prior to establishing or adjusting the upper limit on basic railway fares. • Prior notification is only required to be submitted to the Minister of the MLIT when newly establishing or adjusting basic railway fares, other express train services, or other train services if the amount of the fare or charge after its establishment or after its adjustment is below the upper limit. • Prior to giving approval for establishing or adjusting the upper limit on basic railway fares, the Minister of the MLIT must confirm that the new upper limit does not exceed “total cost,” which is the sum of the proper operating costs incurred by the relevant railway companies if it were to carry out efficient management and the proper profit calculated pursuant to specified methods.
Timing of Fare Review	As appropriate
Fare Adjustment Criteria	Total cost scheme with Yard-stick method
Fare Adjustment Formula	<p>Revenue Requirement = Total Cost = (Variable Cost)+ (Rate Level) x (Rate Base)</p> <p>Total cost = Operating costs, etc. + Operational return</p> <ul style="list-style-type: none"> • Operating costs, etc. = Optimal cost calculated by “Yard-stick formula” + Taxes, depreciation, etc.

	<ul style="list-style-type: none">Operational return = Assets utilized in railway business operations (rate base) × Operational return rate
Involvement of General Public	Consultation with legislative council for transport Public consultation as and when required

City	India
Latest Reform	None
Overall Model	Vertical integration
Infrastructure Ownership	Government
Infrastructure Financing	Central Government: 50%, Local Government 50%
Operation (RST O&M)	DMRC
Regulation (Fare)	Through Fare Fixation Committee, consisting of a Chairperson (a Judge of a High Court) and two other members (nominated by Central Government and the Local Government) with a sitting Judge of a High Court
Legal Framework	Delhi Metro O&M Act
Fare Adjustment Procedure	The Central Government constitutes a Fare Fixation Committee for recommending fare review. Fare Fixation Committee reports to the Government and takes approval from the Cabinet Committee on fare revisions.
Timing of Fare Review	As appropriate
Fare Adjustment Criteria	Unknown
Fare Adjustment Formula	Unknown
Involvement of General Public	None

Attachment 5. 1 EXPERIENCE OF SUBSIDY TRANSPORT FOR PUBLIC TRANSPORT IN THE WORLD

Public transport in the developed countries like the United States, Japan and Europe with a long history of development, many institutional models and policies have been implemented and adjusted.

In general, for development of large cities, investment and operation of public transport system plays a key role, including subsidy. In which, due to the specific characteristic of society and urban development, the scale of subsidies in the United States and Europe is relatively large, meanwhile, public transport in the Asia's cities like Tokyo, Hong Kong, Singapore, and Taipei may gradually offset operation costs.

Table 5. 1 Operation cost offset ratio for public transport (%)

Public transport	Ratio	Fare system	Fare rate	Year
<u>Hong Kong (MTR)</u>	186%	Distance base	HKD 3.50+ (cash) HKD 3.50+ (<u>Octopus card</u>)	2012
<u>Taipei (MRT)</u>	119%	Distance base	TWD 20+ (cash) TWD 16+ (<u>Easy Card</u>)	2012
<u>Singapore (SMRT)</u>	125%	Distance base	SGD 1.10+ (cash) SGD 0.73+ (<u>EZ-Link</u>)	2008
<u>Beijing Subway</u>	59.5%	Distance base	CNY 3.00+	2012
<u>Amsterdam</u>	73.6%	Distance base		2014
<u>Berlin</u>	70.3%	Zonal base	EUR 2.60+	2010
<u>London Underground</u>	90%	Zonal base		2014
<u>Prague (DPP)</u>	53.2%	Flat	CZK 24+	2013
<u>Paris (STIF)</u>	30.4%	Zonal based for car; distance base for ticket		2013

Public transport	Ratio	Fare system	Fare rate	Year
<u>Stockholm</u>	37%	Zonal base	SEK 44–88 (selling ticket) SEK 25–50 (SL Access)	2007
<u>Helsinki</u>	49% ^[20]	Zonal base; each city /zone in a region	EUR 2.80– 7.00 (cash) EUR 1.90– 5.60 (travel pass)	2011
<u>Atlanta (MARTA)</u>	31.8%	Flat	USD 2.50	2012
<u>Boston (MBTA)</u>	43.7%	Flat	USD 2.65 (cash) / USD 2.10 (<u>CharlieCard</u>)	2014
<u>Chicago (CTA)</u>	43.0%	Flat	USD 2.25 (cash) USD 2.00 (<u>ChicagoCard</u>)	2012
<u>Los Angeles (LACMTA)</u>	25.5%	Flat	USD 1.75,	2015
<u>New York City (MTA)</u>	51.2%	Flat	USD 2.25	2013
<u>Philadelphia (SEPTA)</u>	40.7%	Flat	USD 2.00 (cash) / USD 1.55 (hard ticket) /	2013
<u>Quebec City (RTC)</u>	39%	Flat	CAD 3.00	2011
<u>San Francisco Bay Area (Caltrain)</u>	51.3%	Zonal base	USD 2.75+	2011
<u>Toronto (TTC)</u>	73%	Flat	CAD 3.00	2013
<u>Vancouver (TransLink)</u>	51.9%	Zonal base	CAD 2.50+	2010
<u>Washington, DC (WMATA)</u>	62.1%	Distance base	USD 1.95+	2010
<u>Canberra</u>	21%	Flat	AUD 4.20	2007

Public transport	Ratio	Fare system	Fare rate	Year
<u>Sydney</u>	20%	Distance base	AUD 0.15 / km	2014
<u>Melbourne</u>	~30%	Zonal base and time base	From 3.76 AUD / time /zone	2014

Source: Each Transit Operator

CHAPTER 6 IMPLEMENTATION SCHEME

6.1 GENERAL

As described in Chapter 1, urban railway network in Hanoi is being developed in a phased manner, opening the first line (Line 2A) in 2017 and subsequent lines (Line 3-1, 2-1) in 2019 and 2021, respectively.

Currently, Hanoi uses institutional model in which Department of Transport is responsible for transport management in Hanoi, mainly for roadways and waterways. The agency does not actually have enough authority to make decisions on planning, organizing, financing and developing transportation. Furthermore, this agency also has no experiences to operate a large-scale public transport system. With assistance of the World Bank in developing BRT systems, Hanoi is studying institutional model of new traffic institution, orienting to form a public transport management authority - PTA. Institutional arrangement should, therefore, revolve from the opening of the first urban railway line till the full functioning of Public Transport Authority (PTA), which eventually enforce control over an overall public transportation systems in Hanoi City.

In developing such an institutional framework, fare policy goals prescribed in Chapter 3 are taken into account as the basis for the development scenario. Chapter 4 and Chapter 5 presents good practices of fare strategies in the selected Asian mega cities and made recommendations for the actual institutions for Hanoi urban railway system.

Based on the conclusions of previous chapters, this chapter aims to develop a roadmap for implementation scheme to address an efficient and effective fare regulation. With this exercise, it is made clear how the existing fare regulation system over public bus transportation in Hanoi will be enhanced to more publically acceptable and socially equitable mechanism.

In particular, this chapter addresses the following questions:

- What is the suggested institutional framework to regulate urban rail fare?
- Why the existing system needs to be improved?
- What are the necessary arrangements for better fare regulation?
- When is the right timing of such arrangements?
- How urban rail fare regulation should relate to bus fare regulation?

6.2 DEVELOPMENT SCENARIO

Given the actuality of urban railway constructions and institutional development in Hanoi, the following four stages are identified. It should be noted that Phase 2 and Phase 3 may take place at the same time depending on the timing of each event.

- | | |
|------------------------|---|
| (1) Preparatory Period | time now (2013) till the end of TA Study (2015) |
|------------------------|---|

- | | |
|--|--|
| (2) Initial Arrangement (Phase 1) | Early years of Line 2A operation (2016 – 2018) |
| (3) Integrated Management (Phase 2) | integrated management of multiple lines (2019 – 2021) |
| (4) New Regulatory Institution (Phase 3) | full functioning of Public Transport Authority (2022-) |

The summary of the development scenario is illustrated in the Table 6.1. Under this scenario, Hanoi Urban Railway should build on synergies and resolve the most important trade-offs between financial viability of the Operator and affordability of urban rail fare, supporting the fulfillment of the fare policy goals, envisaged at the full organization of fare regulation across public transport systems in the City.

Table 6.1: Institutional Development Scenario

Period	Time now (2013) till the end of TA Study (2015)	Early years of Line 2A operation (2016 – 2018)	Integrated management of multiple lines (2019 – 2021)	Full functioning of Public Transport Authority (2022-)
Phase	Preparatory Period	Initial Arrangement (Phase 1)	Integrated Management (Phase 2)	New Regulatory Institutions (Phase 3)
Implementation method	Proposal for initial fare policy	<ul style="list-style-type: none"> - Actual application of initial fare - Payment of Cost-of-Service (full reimbursement for reasonable by the city) 	<ul style="list-style-type: none"> - Re-determination of fare price, fare policy to suit with the actual context. - Payment of cost-of-service (<i>full reimbursement for reasonable by the city</i>) 	<ul style="list-style-type: none"> - Order (after that, it is possible to apply mechanism of direct contracting, bidding) - Price cap regulation of PTA in combination of some related provisions in the Contract
Main activities and targets	<ul style="list-style-type: none"> - Willingness-to-pay (WTP) survey - Fare competitiveness study (service quality, other modes, modal share) - Economic study (economic growth, inflation, purchasing power) - Financial study (revenue, capital expenditure, operating cost) 	<ul style="list-style-type: none"> - HMC to receive full reimbursement by HPC (Cost-of-Service) - Benchmarking total cost - Benchmarking service quality/Level-of-Service (LOS) - Check the suitability of fare policy and initial fare; - Setting up farebox recovery goal - Determination of subsidy - Development of economic-technical benchmark for operation of Line 2A. 	<ul style="list-style-type: none"> - HMC to receive full reimbursement by HPC (Cost-of-Service) - Designing farebox recovery target - Deciding amount of subsidy - Preparation to issue price cap regulation - The public participation thru period of public consultation - Integrating fare across urban railway lines (free transit) - Completion of economic-technical benchmark for operation and maintenance of urban railway lines which already put into operation 	<ul style="list-style-type: none"> - Introducing price-cap regulation - Mandating PTA with independent power to set public transport fare - Involving general public through public comment period - Integrating reasonable fare of public transport system in general across urban railway lines, BRT and buses (free transit) to meet the target of public transport ratio in Hanoi City

			-	
Decision Making process - Urban Rail Fare	TA Project (proposal) DOT, DOF (appraisal) HPC (decision)	HMC (proposal) DOT, DOF (appraisal) HPC (decision)	HMC (proposal) DOT, DOF (appraisal) HPC (decision)	HMC(notification/proposal) PTA (evaluation/ acknowledgement/concurrence/ approval)
Decision Making process - Bus/BRT Fare	TRAMOC/TRANCERCO (proposal) DOT, DOF (appraisal) HPC (decision)	TRAMOC/TRANCERCO (proposal) DOT, DOF (appraisal) HPC (decision)	TRAMOC/TRANCERCO (proposal) DOT, DOF (appraisal) HPC (decision)	TRANCERCO (notification/proposal) PTA (evaluation/ acknowledgement/concurrence/ approval)

6.3 PREPARATORY PERIOD

6.3.1 Initial Fare Setting

In the framework of TA Project, study and initial proposal for framework of urban fare policy has been made and asked for endorsement from HPC, the supreme decision making body for urban rail fare. Based on a series of reviews and analysis, preliminary initial fare is proposed in 4.2 of this report.

6.3.2 Theoretical Research

Within the scope of TA Project, a number of important researches mainly are inherited from the previous studies. However, conditions in the city of Hanoi in particular and Vietnam in general have been changed dramatically and in fact, become increasingly obvious. In the future, in order to develop and apply more effectively fare policy, a range of theoretical models should be implemented, covering competition/shifting/support between bus and urban rail service. These models take several factors into account, including i) service levels provided by operators, ii) quality of service and iii) fare levels. Such specific researches may include:

- Willingness-to-pay (WTP) survey
- Fare competitiveness/reciprocal/coordination study (service quality, other modes, modal share) to achieve public transport development target of the City
- Economic study (economic growth, inflation, purchasing power)
- Financial study (revenue, capital expenditure, operating cost)

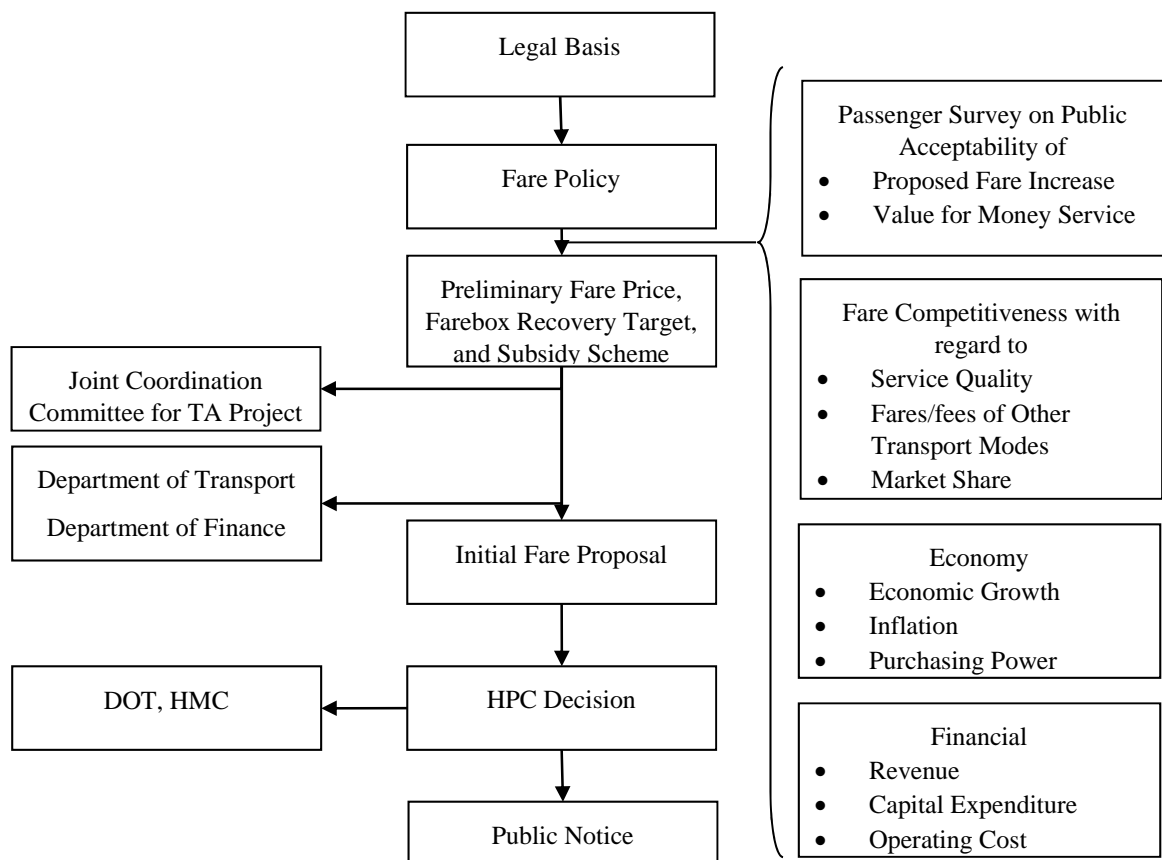
6.3.3 Decision Making Process

The decision making process for public transport fares naturally depends on public transport's organizational framework. For this preparatory period, the process should be based on the existing fare regulation framework where the relevant four parties are directly involved to determine initial fare for the first urban railway line.

Mandate	Entity in charge
Highest decision making authority (regarding policy and mechanism)	Council Committee, HPC
Executing resolution of the City Council Committee with decisions on fare policy, fare structure and fare setting	HPC
Submitting ticket price options	DOT, DOF
Building up and proposing fare price	TRAMOC, HMC, TRANCERCO

Note: (*) –It is necessary to obtain instruction/acceptance of Hanoi City depending on each case.

Figure 6.1: Decision Making Process (Preparatory Period)



6.3.4 Timing of Concluding Fare Policy, Fare Structure and Initial Fare

Fare policy, fare structure and initial fares must be decided one year before opening. The first line, Line-2A, is expected to become operational in early 2017, and fare policy in general, fare structure and fares must be decided in early 2016, accordingly. Preparation should be promoted before the decision taking into account of the time required for approving procedures.

6.4 INITIAL ARRANGEMENT (PHASE 1:2016-2018)

6.4.1 Cost-of-Service

In this period, the ridership is still uncertain market factor and the Operator is anticipated accordingly to face the hardest financial difficulties at the first years of operation.

For the early years of commercial operation, operations cost of the Hanoi Railway Company should be fully reimbursed by an effort of HPC. This cost-of-service (no loss no profit basis) mechanism is often introduced to the public service sector.

6.4.2 Benchmarking Total Cost and Service Quality/Level-of-Service

This period is treated as an opportunity to perform benchmarking of total operation and maintenance cost as well as level-of-service (LOS)¹³ offered at the total cost. Measuring these elements by the Operator and being carefully assessed by the Regulator, Hanoi urban railway system should develop an adequate and record-oriented cost-revenue model/roadmap to maintain financially standing, safe and convenient service. This may be structured in the form of Key Performance Indicator.

Note: operation and maintenance costs depend on technology, design and features of each line. More specifically, these costs also depend on the strategy, operation/maintenance methods which are set. Since urban railway lines are mainly invested by the government in the early stages, and management quality of the state-owned enterprises is often not high and uncertain. Therefore, the HPC as a representative of the Owners, on the one hand, ensures the transparency and accountability of all activities/costs of Hanoi Railway Company, On the other hand, HPC need to allow development and implementation urban railway operation and maintenance strategy in a sustainable way, ensuring long-term effective and sustainable investment (reducing the risks of rapid deterioration of equipment and increasing operation costs).

On the basis of step by step identifying costs, unit price of operation and maintenance in general, the specific regulatory approach may continue to be made clear and implemented to better satisfy the objectives of Fare policy, promoting development of public development and enhancing efficiency investment in urban railway network.

6.4.3 Decision Making Process

Decision making process in this period remains to be the same as that in the preparatory period. Continuous efforts of HPC, DOT, DOF and Hanoi Railway Company will jointly address the tasks of fare price, farebox recovery target, increase of ridership, and subsidy possibility to ensure the financial viability of the Operator and affordability of the fare price for passengers.

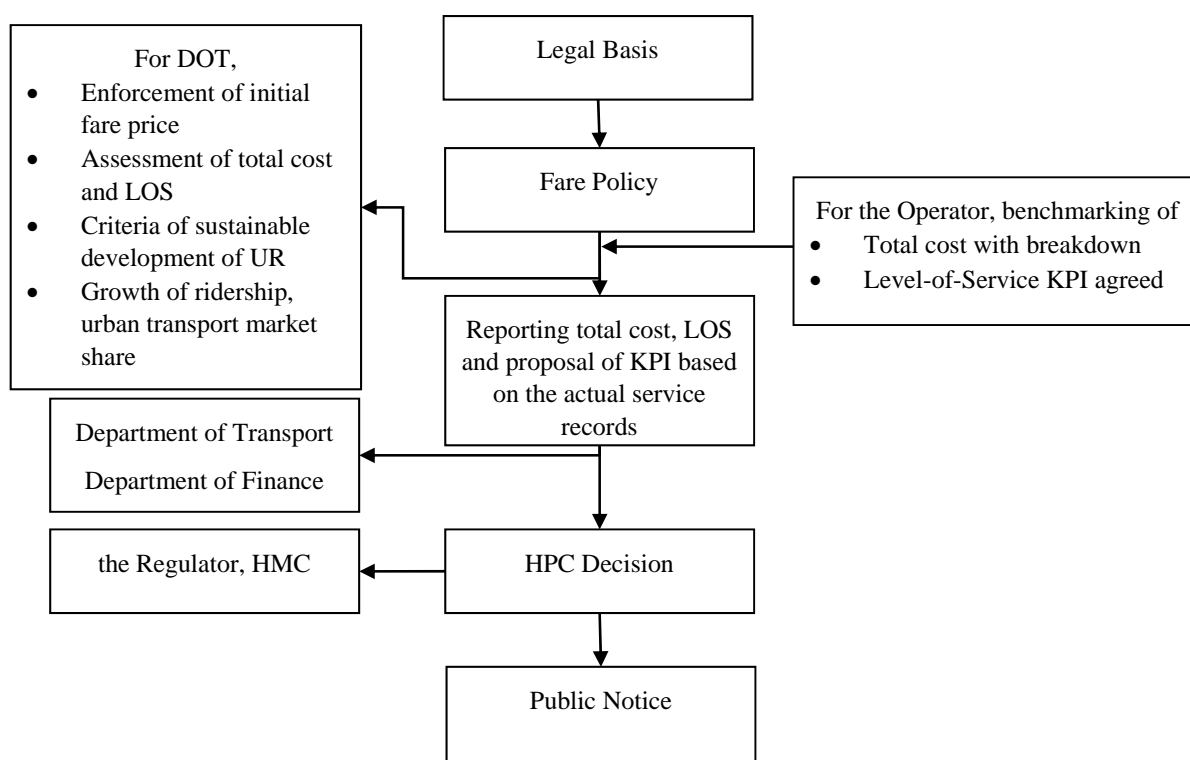
Mandate	Entity in charge
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¹³ Community for Metros (CoMET) performs a wide range of benchmarking and suggests target LOS. This would be referable to determine the appropriate service levels for Hanoi Metro.

Highest decision making authority (regarding policy and mechanism)	Council Committee, HPC (*)
Executing resolution of the City Council Committee on fare adjustment	HPC
Submitting ticket price options	DOT, DOF
Building up and proposing fare price	TRAMOC, HMC, TRANSERCO

Note: (*) –It is necessary to obtain instruction/acceptance of Hanoi City depending on each case

Figure 6.2: Decision Making Process (Phase 1: Initial Arrangement)



6.4.4 Timing of Concluding Target and Total Cost

Target KPI and total cost should be developed one year before opening of second line. The second line, Line 3, is expected to become operational in 2019, and the target KPI and total cost should be decided by 2018, accordingly. The process of deployment and implementation should follow the principles of quality management - ISO 9000, in which monitoring and evaluation are conducted continuously. Quality improvement is carried out simultaneously with adjustment of rules, policies and strategic

objectives accordingly, which are gradually applied more effectively in management, operation and maintenance of urban railway, concretely the contract between the regulator and operator.

6.5 INTEGRATED MANAGEMENT (PHASE 2)

6.5.1 Continuing Cost-of-Service Model

In this period, Hanoi Railway Company will continue the cost-of-service model with careful review of the passengers' interests and social equity and ridership increase speed/trend through periodical and systematic surveys and researches. Perhaps these surveys may be outsourced to the third party by the Operator as the employer. Such mandates should be clearly enforced by MRB, the Regulator.

6.5.2 Designing Farebox Recovery Target

Once the target KPI and total cost are designed, it is possible to design farebox recovery target, meaning that how many percents of the operations cost should be recovered from the farebox revenue. This will be regarded as the break-even point for the Operator.

6.5.3 Deciding Amount of Subsidy

Remaining expenditures that cannot be covered by farebox will be funded through operational subsidy by HPC. It should be ideally zero, so system of policies support by HPC to enhance ridership, creating indirect revenue related to public transport and shifting public transport should be progressively employed to reduce the amount of subsidy.

6.5.4 Integrating Fare across Urban Railway Lines

In this period, the Regulator, Hanoi Railway Company should have a clear provision for integrating fare across different urban railway lines, i.e. Line 2, Line 2A and Line 3 so that the riders are not adversely affected when transferring and base fares are charged only once for any rides. For this purpose, transfer pricing and discount systems are proposed in 4.4 of this report.

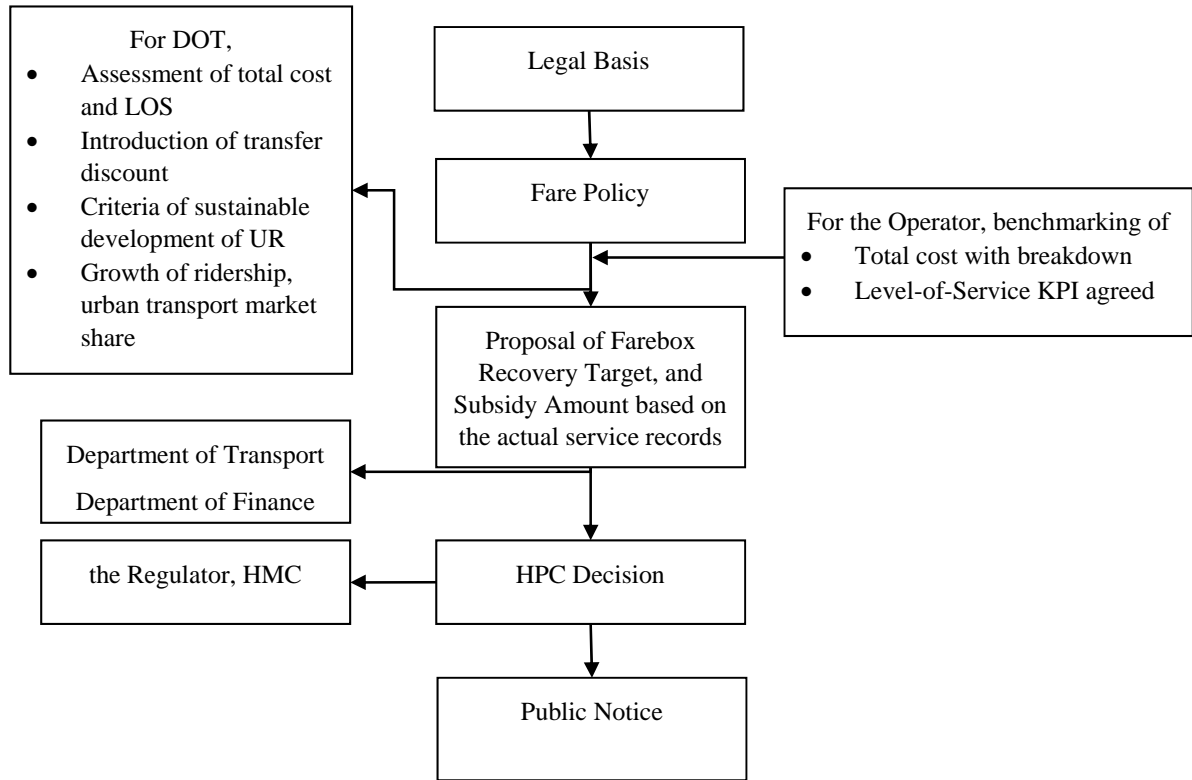
6.5.5 Decision Making Process

Decision making process in this period remains to be the same as that in the earlier period. Continuous efforts of HPC, MRB, DOT and DOF will jointly address the issue of fare price, farebox recovery target and subsidy amount to ensure the financial viability of the Operator and affordability of the fare price for passengers.

Mandate	Entity in charge, HPC
Highest decision making authority (regarding policy and mechanism)	Council Committee
Executing resolution of the City Council Committee Fare Policy	HPC
Submitting ticket price options	DOT, DOF
Building up and proposing fare price	TRAMOC, HMC, TRANSCERCO



Figure 6.3: Decision Making Process (Phase 2: Integrated Management)



6.5.6 Timing of Concluding Farebox Recovery Target and Subsidy Amount

Farebox recover target and subsidy amount should be reviews and adjusted to ensure high effectiveness and feasibility; these targets shall be more accurate for Line 2A, initial setting for line 3-1 and prepared for 2-1. These targets shall be set for each period of planning assignment/order with the operation company.

6.6 NEW REGULATORY INSTITUTIONS (PHASE 3)

6.6.1 Introducing Price-Cap Regulation

In this phase, Regulator and Hanoi Railway Company should adopt the price cap model for the regulation of urban rail fares with the assumptions of predetermined farebox recovery target of transport services. Given the records of the Operator, the Regulator should decide the price cap. The fare adjustment formula should be based on the “CPI - X + K” model as proposed in Chapter 5.

The price cap model is not meant to allow automatic fare adjustment, in fact, the upper limit shall be decided by HPC. As such, fare adjustments (within the cap) will be determined by the Operator. Fare review should be undertaken annually, but the adjustment of price cap should be carried in a longer frequency depending fare review result but not exceeding once a year.

With model of price cap regulation, the Company shall be entitled to enforce sales policy to provide multiple options/services, increase passenger satisfaction, which increases the operational efficiency of the company, achieving goals set by Fare policy.

6.6.2 Public Transport Authority (PTA)

The HUTDP carries out the project titled “Institutional Strengthening of TRAMOC and Creation of PTA under Hanoi Urban Transport Development Project” with the final goal to create a sufficient competence, financially secure, independent agency staffed by capable skilled personnel to coordinate and manage all public transport planning and operations for Hanoi.

As the PTA is expected to become fully functional in 2022, implementation scheme for a comprehensive fare regulation of public transport systems in Hanoi should be adjusted in line with the objectives and requirements of PTA.

6.6.3 Mandating PTA with Independent Decision Making Power

Learning from the experience of rail regulation in overseas, Hanoi urban railway system should envisage, in this period, the independence of regulator in the design of an institutional framework. This independence means that the regulator does not have to get the approval of any political body in its activity. As this is still unfamiliar in Vietnam, PTA as the Regulator should openly publicize its aims and objectives, so that all stakeholders in the urban railway industry know its jurisdiction and limitations.

6.6.4 Proposing Fare Adjustment

As described in Chapter 5, types of fare adjustment includes, i) changes in general fare level, ii) changes in pricing relationships, iii) changes in fare categories, iv) changes in fare structure basis. Whichever adjustments are employed, weighted average of fare prices will be subject to the price cap.

The following analysis must be done by the Operator prior to making a notification (within the cap) or proposal (beyond the cap) to the Regulator. This analysis and the fact that the results of the analysis is considered when making the acknowledgement (within the cap) or concurrence (beyond the cap) the regulator and the final decision by PTA (beyond the cap), must be documented in writing and kept on file for three years.

Case 1 – Fare Adjustment without Reinvestment i) functions and activities, ii) records of KPI, iii) manpower requirements for each activity, and iv) revenue and non-staff cost

Case 2 – Fare Adjustment with Reinvestment on top of the above analysis, v) calculation of reinvestment costs and vi) time scale required for reinvestment worked out

6.6.5 Public Comment Period for Proposed Fare Adjustment

In this period, Hanoi urban railway should be required to have written procedures for obtaining comments in a public forum prior to fare adjustment (regardless of within or beyond the cap), and these procedures must be approved by the regulator. Before MRB issues acknowledgement (within the cap) and concurrence (beyond the cap), the Operator must provide an opportunity for public comment for the proposed fare adjustment, and any comments received must be addressed before the proposal is finalized.

6.6.6 Public Notice for Impending Fare Adjustment

In addition to the public comment period, public notice must be provided for fare adjustment. Public notice requirements and guidelines should be prepared for this purpose. The fare adjustment should be allowed to come into starting to take effect 30 days from the date of the notice. Notice of the adjustment must be posted by the Operator in all affected passenger facilities and announced on all appropriate mass media.

6.6.7 Integrating Fare across Urban Railways and Buses/BRT

Multi-modal fare regulation improves the consistency of decisions across different public transport modes and reduces the risk of economic distortions and allows dealing with boundaries.

Since the entire public transport network in Hanoi are expected to equip automatic fare collection systems in this period, it is necessary to proceed towards full common fare schemes for all public transport modes covering a whole urban area, which eventually achieve a remarkable increase of passengers triggered by fare integration.

When considering a common fare scheme, different existing fare levels between urban rail and bus operators may be a challenge. Therefore, PTA should employ a method to share the revenues from a common fare scheme as proposed in 4.4 of this report.

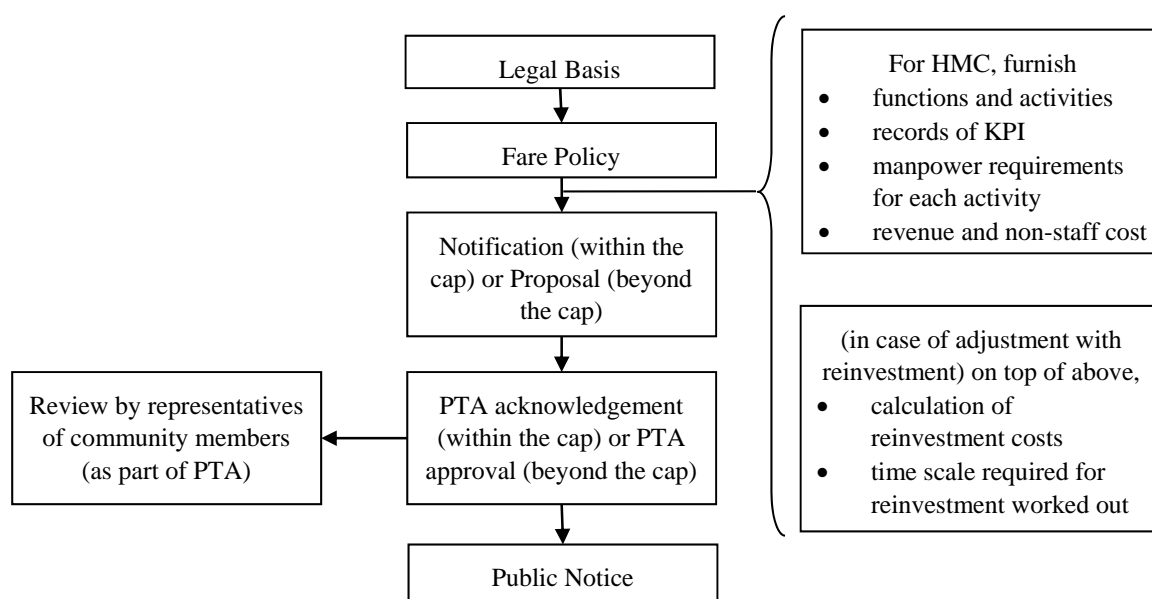
Please note that, for the overall benefits for Hanoi, different public transport modes will be integrated/coordinated together in providing transportation services to bring maximum benefits to passengers, while minimizing the risk of competition/extermination one another. The regulator, as being considered in more detail in another study of the TA, plays role of regulation and important coordination in many aspects, including the mobilization and distribution of financial resources, planning of public transport networks, advising policies on encouraging public transport user, policies on restricting the use privated motorized mode, etc.

6.6.8 Decision Making Process

In this period, PTA, the Regulator, should be the sole party to give acknowledgement (within the cap) to the Operator's notification.

PTA	<ul style="list-style-type: none"> - To enforce price cap regulation - To acknowledge fare adjustment (within the cap) notified by the Operator or issue approval, if deemed appropriate, to fare adjustment (beyond the cap) proposed by the Operator
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Figure 6.4: Decision Making Process (Phase 3: Consolidation to PTA)



6.6.9 Timing of Fare Review

Fare reviews should be regular and progressive (ideally yearly) to secure the sustainable development of urban railways and services. In the event of abrupt and steep fare increases, the drop in ridership could be significant. From a public acceptance point of view, small regular variations obviously generate fewer reactions than large increments.

Therefore, Hanoi Metro should envisage a relatively short review period as current inflation rate in Vietnam shows high record. To avoid frequent increase of fare, 2 or 3 yearly fare adjustment would be proposed. Frequency of fare adjustment would be shortened depending on the results of review but not exceeding once a year

6.7 CONCLUSION

- Given the circumstances of urban railway constructions and institutional development in Hanoi, the four stages (development roadmap) are identified, i.e. i) preparatory period, ii) initial arrangement (phase 1), iii) integrated management (phase 2), and iv) new regulatory institutions (phase 3).
- The decision making process for public transport fares naturally depends on public transport's organizational framework. In early years after opening of Line 2A, the process should be based on the existing fare regulation framework.

Mandate	Entity in charge
Highest decision making authority (regarding policy and mechanism)	Council, Committee
Executing resolution of the City Council Committee on Fare policy	HPC
Submitting ticket price options	TRAMOC, HMC, TRANSCERCO

- Once the proposed Public Transport Authority (PTA), the future Regulator overlooking entire public transports, should be the sole party to give acknowledgement (within the price cap) to the Operator's notification.

PTA	<ul style="list-style-type: none"> - To enforce price cap regulation - To acknowledge fare adjustment (within the price cap) notified by the Operator or issue approval, if deemed appropriate, to fare adjustment (beyond the price cap) proposed by the Operator
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- Fare reviews should be regular and progressive (ideally yearly) to secure the sustainable development of urban railways and services and to adjust UR services fare to market conditions. In the event of abrupt (often when the interval between two fare adjustment times is relatively long while the market has many fluctuations during that period) and/or steep fare increases, the drop in ridership could be significant (especially in the initial stage when shifting from private mode to public modes are not implemented yet). From a public acceptance point of view, small regular variations obviously generate fewer reactions than large increments. Therefore, Hanoi UR should envisage a relatively short review period as current inflation rate in Vietnam shows high record. To avoid frequent increase of fare, a yearly fare review would be proposed upon decision of operators. Fare adjustment is a main factor of regulation tools of the Government, in which regulation period should be balanced to ensure effectiveness of overall regulation. Average fare adjustment period (regulation period) in international practices is about 5 yearly time; this study proposes a 3 yearly period for fare adjustment at starting periods. Gradually, the regulation period may be shortened but should not be less than a year/time.
- Finally, fare policy should be attached to the overall goal to develop a comprehensive system of urban transport in Hanoi a modern way, ensuring the efficiency of large (urban railway)

investment projects which have been implementing while ensuring the feasibility of transport development plan for Hanoi. Therefore, in the first stage, implementation step of fare policy should be conducted carefully, tested and evaluated, and adjusted timely. It is necessary to balance between the aim of cost control and the aim of sustainable development, including development of urban railway human resource, receiving technology, mastering operation and maintenance technology, promoting effective management of urban railway operation and maintenance, etc. Concretely, before putting into operation, it is impossible to know actual consumption of fuel, spare parts and even human resource cost. Thus, applying cost-of-service method, a type of planning assignment, in the first 2, 3 years of operation through records and analysis will be able to basically determine consumption norms of urban railway correspondingly. Operation costs, including labor cost and maintenance cost (and other costs) should be associated with development strategies, including human resource development, maintenance development and safety assurance. These strategies, if needed, should be assisted and evaluated by an oversea experience organization/consultant. In addition, preparation of financial plan should be linked to development strategies. For urban railway, a financial plan with different periods should be developed, which is closely associated with maintenance/conversion/replacement cycle of the main vehicles/equipment.

**FORM OF PUBLIC SERVICE FRAMEWORK CONTRACT FOR
PASSENGER TRANSPORT BY URBAN RAILWAY IN HANOI CITY**

OUTLINE OF REFERENCE CONTRACT

**PUBLIC SERVICE CONTRACT FOR PASSENGER TRANSPORT BY
URBAN RAILWAY IN HANOI CITY**

I. Legal basis:

- Civil Laws and Resolution no. 45/2005/QH11 dated 14/6/2005 of National Assembly of Socialist Republic of Vietnam on execution of Civil Law.
- Railway Law
- Capital City Law
- National budget Law
- Decree no. 130/2013/ND-CP dated 16/10/2013 by the Government on producing and supplying public service.
- Decree no. 161/2012/TT-BTC dated 2/10/2012 specified modes of control and payment of the state budget through the State Treasury.
- Decision no. 17/2008/QĐ-UBND dated 29/9/2008 of HPC regarding regulations on functions, responsibilities and organizational structure of Department of Transport.
- Decision no. 6266/QĐ-UBND of HPC to establish Hanoi Metro One Member Limited Liability Company.
- Decision no. 77/2014/QĐ-UBND dated 10/10/2014 of HPC regarding promulgation of rules on selection of contractors for provision of utility services and goods in Hanoi City.

II. Contract parties

Date....month.....year, at:

1. Order (Party A)

Business name: Hanoi Department of Transport (DOT)

Address:

Tax Code:

Telephone:

Fax:

Bank Account:

Representative:

Position:

2. Urban railway operator (Party B)

Business name: Hanoi Railway One Member Liability Limited Company
(hereinafter called Hanoi Metro Company)

Address:

Tax Code:

Telephone:

Fax:

Bank Account:

Representative:

Position:

Two parties reach mutual agreement on signing of Contract of order of public service on supplying of Urban railway passenger transport by Party B in year xx... of Cat Linh – Ha Dong Urban railway line, following the below provisions:

Article 1: General provisions:

1. This contract shows rights and responsibilities between parties in supplying of Urban railway passenger transport on Cat Linh – Ha Dong line.
2. Type of contract: order contract in accordance with adjusted price.
3. Definition: Unless there is another request or agreements between two sides, the following terms will have meanings as below, respectively:

Order party (Party A) means DOT as mentioned in contract parties as well as legal successors of order party.

Supplying party (Party B) means organizations and enterprises supply the service as mentioned in contract parties and legal successors of Supplying party.

“Contract” means a document consisting of basis, provisions, related profiles and documents that parties participate in signing.

Contract implementation duration means the duration to complete ordered products and supply of products, service of urban railway transport as Article 3 [Contract implementation duration] accounted from the contract signing date.

Civil works means urban railway infrastructures including viaducts, approaching line, tunnels, stations, etc.

Force majeure is defined at Article 12. [Force majeure]

Law means the entire law system of SRV.

Urban railway maintenance means all possible works to maintain or recover urban railway infrastructures and equipment till a certain condition that the operation of urban railway system will be safe and quality.

“**OCC**” means Operation Controlling Center;

“**Depot**” means urban railway station which is used for stabling, maintenance, train formation;

“**Handling and Responding Committee**” means an organization established including members in Hanoi Metro Company, to deal with urban railway accidents and incidents;

“**Safety Plan**” means a Plan to set up safety management schemes and enhance urban railway safety standards by stipulating urban railway operation philosophy and methods, based on Railway Law;

“**Urban railway incident**” means event happening in urban railway transport activities which obstacles train operation without causing fatality and assets, vehicles loss;

“**Urban railway accident**” means event when urban railway vehicles crush, derail, train collapse, hit against humans or operating urban railway vehicles, hit against obstacles causing fatality, health loss or assets loss.

III. Contract management contents

Article 2: Operation target:

Depending on the traveling demand of passengers, technical infrastructures condition, urban railway transport capability (Appendix 1 – Operation plan) and economic-social conditions and city’s budget allocation to subsidy urban railway, this Public service Contract shall be ordered with the following targets by HPC:

No.	Target	Value	Unit	Description	Min. requested performance (%)
1	Total operation km on the whole network		Km	Passenger transport distance in contract term. This is basis to calculate contract value	80-95% Calculated by: Total actual operation km / Total planned operation km

2	Number of trains providing services in a month		Trains	Number of trains providing services in contract term.	80-95% (For example: minimum level of Hong Kong case is 98.5%) It is defined by total number of actual operating trains/Total number of planned trains
3	Number of cars providing services on the line		Car	Number of car providing services in during contract term.	95% To be identified: Total number of actual operating cars / total number of planned trains
4	Punctuality	-	minutes	Refers to the time that the train provides service as prescribed operation plan	Less than 2 minutes

Article 3: Contract implementation duration:

- Valid for one (01) year.
- From Jan 1/20xx till Dec. 31/20xx, contract year.

Article 4 Contract value:

1. Unit price for payment:

- To identify contract value, annual or (x) years/time HPC-approved order unit price must be the basis.
- Price, unit price for cost estimation and payment of urban railway public transport service are developed on the basis of technical economic benchmark and estimated benchmark which have been decided by HPC.
- Ordered unit price prescribed in Decision of HPC.

2. Revenue, cost, and subsidy:

On the basis of ordered amount, and benchmarked unit price assigned to Party B, the contract value and necessary subsidies shall be identified.

No.	Description	Unit	Value
1	Benchmarked cost (in accordance with benchmarked unit price by Decision of HPC)	VNĐ	
2	Other actual cost	VNĐ	
3	Total operational cost (estimated) (3) = (1) +(2)	VNĐ	
4	Fare revenue (Estimated)	VNĐ	
5	Subsidy (estimated) (5) = (3) – (4)	VNĐ	

Article 5: Accepting work:

1. Timing of accepting: every month, on the ... day of the next month as latest, Party A shall conduct the accepting works for the supply of public passenger transport service by urban railway in previous in compliance with the provision of laws
2. Party B shall submit report, record of accepting of previous month on the ... day of the next month as latest for comparing:
 - + Company's internal accepting report.
 - + Reports on arisen accidents/incidents, affecting on urban railway service provision

- + Reports on Party B's violations to contract which made by Party A and competent authorities;
 - + Estimated fare revenue;
3. Acceptance contents: Party A shall conduct acceptance in accordance with regulations of HPC with the followings:
- + Total train sets operated/not operated
 - + Total cars operated/not operated
 - + Total journey that Party B performed
 - + Total number of single ticket, monthly ticket.
 - + Acceptance in force majeure when journey is not completed.
4. To accept the works, Party A is entitled to request, and Party B is responsible for creating maximum conditions for representatives of Party A to approach, copy of all books, records, papers and documents of Party B, which relate to accepting contents whenever necessary in opinion of Party A.

Article 6 Advance payment, settlement

The advance payment and settlement will be implemented following regulations of the Government and of HPC.

- 1. Principle:** Following Budget Law and Decrees which prescribe advanced payment, payment for national budget via national treasury and specific regulations of Hanoi City.

2. Advanced Payment:

(a) Advanced payment – 1st time: within 15 days after signing the contract, Party A will pay in advance for Party B with amount of not over 30% of contract's value.

Documents of 1st time advanced payment shall include:

* Decision on approval for ordering Party B to provide Hanoi Urban railway passenger public transport service on Cat Linh – Ha Dong line (copy)

* Annual plan assignment decision approved and estimated by Party A.

* Annual order contract for Urban railway passenger public transport service ordered by HPC (original)

* Request letter for advanced payment prepared by Party B (original)

* Remittance document issued under regulation of accounting document system of the Ministry of Finance.

* Guarantee for advance payment of Party B sending the State Treasury where transactions is made.

* Other related documents (originals)

(b) Advanced payment – 2nd time: within 15 days after the work amount of 3rd month in a year is accepted, Party B shall be paid in advance the next 30% of subsidy value prescribed in contract.

Documents of 2nd time advanced payment shall include:

- * Request letter for advanced payment prepared by Party B (original)
- * Internal accepting report for the first 3 months of Party B on targets as prescribed in Article 2 of this contract (original).

(c) Advanced payment – 3rd time: Within 15 days after the work amount of 6th month in a year is accepted, Party B shall be paid in advance the next 3% of subsidy value prescribed in contract,

Documents of 3rd time advanced payment shall include:

- * Request letter for advanced payment prepared by Party B (original)
- * Internal accepting report for the first 6 months of Party B on targets as prescribed in Article 2 of this contract (original).

3. Payment:

Quarterly, Party B shall prepare documents of payment requests sent to the State treasury, where transaction is made, for control and payment. Advanced payment part shall be started to be returned from the first payment and all will be returned when completed volume reached 80% of the approved cost estimate of the quarter. After settlement is approved and obtained written verification and confirmation by DOF of the same level, Party A shall carry out payment procedures at the state treasury for the remaining expense (if any) based on the settlement data that has been verified and confirmed.

(b) Documents of payment shall include:

- * Decision on approval for ordering Party B to provide Hanoi Urban railway passenger public transport service on Cat Linh – Ha Dong line (copy);
- * Annual plan assignment decision approved and estimated by Party A (copy);
- * Annual order contract for Urban railway passenger public transport service ordered by HPC (original);
- * Request letter for advanced payment prepared by Party B (original).
- * Remittance document issued under regulation of accounting document system of the Ministry of Finance.
 - Work volume completion confirmation table for payment request
 - Invoice
 - Contract liquidation and verification and confirmation record for settlement by DOF (when the remaining expense is paid)
 - Other related documents (original).

4. Settlement

(a) Within 20 days since the expired date of this Contract, two parties shall coordinate to prepare yearly settlement documents on targets as prescribed in Article 2 of this Contract.

(b) After receiving yearly settlement documents which have been approved by Party A and notice on verification and confirmation of Department of Finance, Party A shall pay the remaining following yearly settlement document which has been approved. Duration for DOT to verify and confirm settlement data shall be maximally 15 working days from receiving sufficient settlement documents as prescribed.

Settlement document shall satisfy proper application of criteria and unit price and total amount value specified in the contract. If Party B violates the terms of the contract, and is deducted from the value to be paid, it must be clearly explained the reasons and the value deducted in the settlement.

Documents of yearly settlement shall include:

- * Decision on approval for ordering Party B to provide Hanoi Urban railway passenger public transport service on Cat Linh – Ha Dong line (copy)
- * Annual plan assignment decision approved and estimated by Party A
- * Annual order contract (original)
- * Annual contract liquidation record (Copy with confirmation of Party A);
- * Request letter to Department of Finance for verification and confirmation of settlement data.
- * Settlement report on annual implementation amount and value, and statement of settlement documents, in which, specific contents and calculation method are clearly mentioned.
- * Specific accepting records, documents on work quality and amount implemented monthly, quarterly (copy)
- * Invoices, evidences, payments for actual costs (summary tables, copies of invoices, evidences);
- * Request letter of Party B for settlement;
- * Notice on approval for annual settlement of Department of Finance;
- * Other related documents upon request of Department of Finance for verification and confirmation of settlement data.

(c) Party A shall additionally pay for Party B other actual expenses which have not included in the benchmark table as in order document if it satisfies conditions prescribed in the Contract.

(d) In case that HPC will later have specific regulations on settlement for urban railway public passenger transport service, parties involved in this Contract shall follow such specific regulations.

Article 7: Responsibilities of Party B

Party B must secure conditions in terms of organization, management of personnel, facilities, infrastructures and technical matters for thorough and smooth operation of urban railway, satisfying requirements on service quality, safety and provisions prescribed in the contract. Details are as following:

1. Urban railway infrastructure and facilities:
 - a) Urban railway infrastructure must satisfy sufficient specifications, technical standards, regulations, certificates for quality assurance, and for safety of operation and maintenance of urban railway as Vietnamese regulations;
 - b) Party B must ensure regular or quarterly management and maintenance of infrastructures of urban railway public passenger transport in quality, safe conditions, without affecting the supply of urban railway service in accordance with regulations in Appendix 2 – Safety plan of this Contract;
 - c) Ensure the sufficient arrangement of technical facilities for stable, effective, reliable operation and passenger service at stations, platforms, including but not limited to lifts, escalators, lightening system, ventilation, automatic vending machine, functional departments for the operation at stations and passenger service;
 - d) Arrange methods to assist the disabled, children, pregnant women who use urban railway service at stations and on board, including arrangement of designated pathway, lifts and area for the disabled, children, pregnant women;
2. Urban railway transport vehicles:
 - a) Urban railway vehicles (Rolling stock) must be in compliant to technical standards, regulations, certificates to ensure quality and safety of operation and maintenance of urban railway as Vietnamese regulations;
 - b) Party B must provide and remain sufficient facilities at depot area for the inspection, repair, maintenance and cleaning of rolling stock;
 - c) The maintenance and repair of vehicles shall be conducted as maintenance rules and procedures, to ensure daily technical safety status and the best facilities for passengers before entering the operation, but this cannot interrupt the operation as stipulated in Appendix 2 –Safety plan of this Contract;

- d) To display inside urban railway vehicles including but not limited to the following items: Line number, terminals, station alignment, hotline telephone of Party B and Party A, no-smoking sign, and direction for prioritized persons, train rider rules...

3. Train traction power source:

- a) Party B is responsible for backup and maintaining the train traction power source in stable condition for the entire network, even when there is unexpected incident such as power grid black-out, interrupted provision of power supply, etc.
- b) Party B must apply appropriate and safe methods in construction, installation and using train traction power source and other items;

4. Party B must provide and maintain sufficient facilities at OCC in compliant with safety regulations. to ensure that the OCC is totally controlled by capable staff with necessary profession;

5. Signaling and telecommunication: Party B must provide, install sufficiently and ensure proper operation of signaling and telecommunication system for communicating between OCC and all operating trains, with stations, depot and other necessary areas, sufficiently satisfying technical standards, regulations, quality certificate, safety certificate of authorized organizations as Vietnam's regulations.

6. Lightening and ventilation

- a) Party B must ensure and maintain sufficient and appropriate lighting in areas relating to urban railway system and at working areas, in compliant with standards prescribed in Vietnamese regulations;
- b) Party B must ensure and maintain the sufficient ventilation for relevant areas of urban railway system and at areas which cannot be naturally ventilated, in compliant with standards prescribed in Vietnamese regulations.

7. Requirements of passenger service quality:

- a) In no more than ... days before starting to implement the contract, PARTY B must submit Train Operation Plan to Regulator for evaluation and approval, which will include the following main contents:
- Daily train operation time;
 - Train operation frequency (rush hour and off-rush hour);
 - Total number of daily operating trains;
 - Loading capacity of each railcar, train set;

- b) Party B must ensure the implementation of the Operation Plan as contract and contents evaluated and approved by Party A. Whenever of changes, adjustment schedule must be prepared and this must be timely noticed to passengers and Party A.
- c) Ensure the supply of information about urban railway operation and fare level in timely, sufficient and correct manner to passengers at stations, on vehicles and other relevant areas;
- d) Party B must ensure that passengers can approach to service areas in clean and comfortable conditions;

8. UR staff: arrange operating and service staff to perform their works in compliant with regulations, under appropriate profession degrees or certificates. These people will be annually trained and educated, and ensured with good physical and mental condition for working as Vietnamese regulations.

9. Party B must arrange sufficient staff and reliable vending machines and Automatic gates to maintain the efficiency and safety in issuance and collecting fares.

10. Party B must remain and develop the satisfaction of passengers towards urban railway services by surveying the satisfaction of passengers unscheduled or quarterly; Implement and maintain the system of passenger complaint handling, and complaints of passengers must be compiled and reported to PARTY A annually;

11. Safety management:

- a) PARTY B must ensure compliance with laws, standards, technical regulations of MOT on urban railway system safety management.
- b) PARTY B must fulfill the requirements to be assessed, certified and granted with safety certification of urban railway system by the MOT;
- c) PARTY B must strictly observe and create favorable conditions for inspection and safety check of urban railway system from the authorities under the MOT or interdisciplinary inspection team including MOT and HPC. In case of violation of safety regulations, the company must be handled by the sanctions as prescribed in Vietnamese regulations.
- d) PARTY B must periodically summary and report the situation of ensuring the urban railway safety to PARTY A. In case of serious accidents, it is required to report quickly, devise countermeasures, and coordinate with PARTY A and other agencies to handle.
- e) Party B shall quarterly organize practice of rescue activities for staffs in case of incidents, without affecting train operation.

Article 8: Rights of Party B

- a) To be entitled to notice and request PARTY A to confirm when incidents arise, objective conditions affecting urban railway operation and management and implementation of the contractual contents.
- b) To recommend Party B to change operation plan compatible with actual urban railway public transport demand.
- c) To be entitled to be paid in advance or paid with state subsidies when the competent authority approves.

Article 9: Responsibilities of Party A

- a) To be urban railway management agency of HPC to directly collaborate with Party B in execution of public service contract by urban railway.
- b) To perform state management function of urban railway operation in the city; to take responsibilities for management of service quality and safety, and to advise mechanisms and policies on urban railway management to HPC.
- c) To inspect, supervise and accept urban railway operating activities of Party B in the scope of this contract.
- d) To prepare report and handle with violations to Party A-Party B contract provisions.
- e) To preside over evaluating business plans of Party B such as Operation Plan, Safety Plan and so on as a basis to calculate value of the contract and implement and supervise urban railway public transport plan in the city.
- f) To coordinate with Party B to make recommendation to HPC for adjustment of targets in operation plan, creating favorable conditions for Party B in the course of contract performance.
- g) To coordinate with the functional authorities of HPC and Party B in proposing common policy for Hanoi city's urban railway system including fare structure, type of tickets, and fare level and fare adjustment mechanism in accordance with socio- economic conditions of the city.
- h) To coordinate with the functional authorities of HPC to preside over and organize activities of acceptance, advance payment and settlement by urban railway public transport volume with Party B, ensuring the time and schedule prescribed in the contract.

Article 10: Rights of Party A

- a) To perform regular, periodical and unscheduled inspection and supervision of operational activities of urban railway public transport in accordance with the contents of the contract.
- b) To request Party B to change and improve operating conditions to increase service quality for passengers.
- c) To make reports, records and suggestion on handling with cases of violating the Rules of the State, the Government, and the City regarding urban railway service quality and cases of breaching the contents of the contract.

Article 11: Handling contract violation**1. Requirements of handling contract violation:**

- a) Handling contract violation of Party B occurs only when Party A directly makes minutes of violation to Party B or receives reports and materials on violations from the functioned and authorized units and from passengers.
- b) Handling contract violation of Party B shall be conducted only within the management content of the contract, under the responsibilities which Party B must take in the contract.
- c) Handling contract violation of Party B shall not interrupt urban railway operation and management.
- d) Contract violation by Party B shall not be handled in event of objective reason and force majeure and with timely report within ... days since the date of detecting the violation.

2. Contents of handling contract violations

- a). Handling with violations to operation target in part 3, Article 2 of this Contract:

(1) Number of train sets serving in a month

Party B shall be fined if violating the Contract's provision when occurring one of the following cases:

- ____million VND of fine if the number of train sets serving in a month reaches from 90-95%
- From ____ million VND to less than ____million VND of fine if the number of train sets serving in a month reaches from 85-90%
- From ____ million VND to less than ____million VND of fine if the number of train sets serving in a month reaches from 80-85%
- ____million VND of fine if the number of train sets serving in a month is under 80%.

(2) Punctuality:

Party B shall be fined if breaching the Contract in the following cases:

- ___ million VND of fine per time/01 train set if train delayed 2-3 minutes comparing to Operation plan
- ___ million VND of fine per time/01 train set if train delayed from over 3-5 minutes comparing to Operation plan
- ___ million VND of fine per time/01 train set if train delayed more than 5 minutes comparing to Operation plan

(3) Congestion in rush hour:

Party B shall be fined 2 million VND per time if the actual passenger on board is equal or more than 200% of designated loading capacity of railcar.

b). Handling with violations to Contract's provisions relating to Responsibilities of Party B:

(1) Contract beaching in term of Human resources

- To fine over violations in terms of urban railway human resources in part 8 of Article 7, details are as following:

- i) Fine of __million VND/ time if UR Operation and maintenance is conducted by UR staff who is not under Party B, UR staff of Party B who does not have mandatory professional certificate provided by competent organizations as regulations.
- ii) Fine of ___million VND/ time of Party B lets the following case happen, including yielding at, threaten, to be hostile to, evasion, or assault passengers or inspectors while implementing the works
- iii) Fine of ____VND/time if Party B's staffs do not to wear name plate or prescribed clothes properly while at work
- iv) Fine of __VND/time if Party B lets the following cases happen, including drinking beer, smoking or drug while at work
- v) Fine __VND/time if Party B stops trains at improper location at platform, except for force majeure;
- vi) Without stopping at stations as operation plan, not fulfill the route prescribed in Appendix 1 of this contract hereof except for force majeure, but this must be timely notice location at the latest one day to Party A in terms of time and.

vii) Not to open train doors, screen doors or close doors while passengers have not finished boarding or getting off from trains;

viii) To allow passengers to enter platform without or with improper tickets.

ix) To allow passengers to bring bulky luggage, animals or substances with annoyed or hazardous smell into stations.

(2) Operation vehicles:

To fine over violations to contract provisions on operation vehicles in the following cases:

- Fine of ____ VND/time if putting trains into operation without fulfilling conditions as prescribed at item a, b and d, part 2, Article 7 of this Contract;

- Fine of ____ VND/time if vehicles do not ensure service quality criteria including but not limited to such as dirty floor, existence of broken down parts, not-operated air conditioning system, lighting system, ventilating system (except for sudden failures)

(3) Urban railway infrastructure and facilities

- Fine of ____ VND/time for contract breaching behaviors in terms of infrastructure and facilities of urban railway system if Party B does not sufficiently satisfy conditions as prescribed in item a, d of Part 1, Article 7 of this Contract.

- Fine of ____ VND/time for contract breaching behaviors if Party B does not handle with the following cases as stipulated in item c, part 1 of Article 7:

i) Not-operated lifts, escalators, except for failures or force majeure

ii) not-operated lightening, ventilating system or improper operation, except for sudden failure or force majeure

iii) Not-operated AVM or AGs without timely fixing within 2 working hours

(4) Urban railway safety

- Fine of ____million VND/time if Party B cannot show up sufficiently or properly the UR system Safety certificate issued by MOT and other safety certificates provided by other functional organization as regulations.

- Fine of ____million VND/time for any violations as mentioned in item c, d of part 11, Article 7.

c) Based on level of management target performance under the contract of Party B in comparison with plan and requirement of implementation, if many targets are not achieved 60% compared to plan and requirement of implementation, PARTY A shall request HPC to reduce salary and bonus fund of Board of Directors and management leadership of the Company.

3. Procedures of penal term

a) Record on violations of Part B shall be made by Party A, Party A shall notice Party B after 1 or 2 working days since the timing of violation record made.

b) Party B shall notice Party A about handling with violations and pay the fine to Party A X days in advance of monthly accepting term

Article 12. Force majeure:

- Force majeure are events beyond the two parties' control and prediction including but not limited to war, riot, fire, natural disaster, flood, epidemics, and isolation due to quarantine or appropriate requests of authorized agencies.

- Any party that fails to perform its contractual obligations due to force majeure shall not have to compensate damages or fine.

Article 13. Contract amendment:

1. Principle for contract amendment:

a) Amendment of the contract shall be specified in the contract, a written agreement on the terms of the contract (if any).

b) Adjustment of contract shall be implemented only during valid duration of the contract.

2. Contract performance schedule shall be only amended in the following cases:

a) In case of force majeure, not related to violation or neglect of the Contract's parties.

b) Changes of the scope of work, technology of operation and maintenance of urban railway because of objective requirements influence on performance schedule of the contract.

3. Contract amendment shall be conducted only when permission is granted by people's committees at all level in the following cases:

a) Where the Government, City adjusts or amends socio-technical benchmark, unit price that directly influence on the contract value and is allowed to amend by Hanoi People's Committee (from the effective date of that policies).

b) Where the Government changes mechanism and policy of wages, material prices that directly influence on the contract value.

c) Where volume or number arises reasonably (increase or decrease) or due to force majeure as prescribed by law.

Article 14: Contract dispute resolutions

a) In event of dispute arising between PARTY A and Party B in contract performance, the two parties shall resolve such dispute through formal discussion and negotiation.

b) If the dispute is not resolved in ... days since the date of dispute's occur, through formal discussion and negotiation, both parties shall agree to resolve the dispute by commercial arbitration to be selected by two Parties, or authorized Court under provisions of Vietnamese laws.

Article 15. Contract termination

Party A shall terminate the contract in the following cases:

- a) Party B is dissolved or bankrupted
- b) If HPC issues sudden and reasonable requests in written form.
- c) If MOT or other functional organizations requests to HPC in case that Party B seriously violates regulations on Urban railway system safety and the system cannot be continued with operation.

Article 16. Utilization of materials and information relating to this Contract

1. Except for cases prescribed in Part 2 of this Article, if there is not permission in written form of Party A, Party B is prohibited to disclosure the contents of this contract as well as information related to contract's implementation provided by Party A to any third party. In addition, Party B shall not use any information or documents mentioned in part 1 of this Article into other purposes than implementation of this Contract.

2. Party B shall not be responsible for information security in the following cases:

- Information has been publicized before sending to Party B;
- Information provided by Party A is normal information, which has been publicized by Party A;
- Information that Party B searches for and developed from legal sources, without any binds under responsibilities of information security;
- Information that authorized organizations request to provide. In this case, Party B shall be responsible for noticing Party A as soon as possible about information provided to authorized organizations

Article 17. Implementation validity

This contract is valid since date of signing and applicable from 1/1/20XX to 31/12/20XX.

Article 18. General commitments

Two parties are responsible for executing contents in agreed provisions of this Contract.

During the execution, should any matter occur, the two parties need to inform each other in timely manner to review and modify the contract in order to provision of the best UR service.

Any change (if any) shall be discussed specifically between two parties and agreed in written form before implementing and resulting in appendix of this Contract.

This contract is made into (x) originals with equal legal validity. Party A keeps (x/2) originals and Party B keeps (x/2) originals./.

Party A
Hanoi Department of Transport

Party B
Hanoi Urban railway One member Limited Liability Company

**Appendix 1: Urban Railway Operation Plan
Cat Linh – Ha Dong (Operation plan 2017)**

Appendix 1-1: Operation time on the line:

Open from 5:00am to 23:00pm: 18 hours/day, the remaining time for maintenance

Appendix 1-2: Stations and stopping time at the stations

Station	Stopping time (second)	Distance between stations
Cat Linh Station	35	0
La Thanh Station	60	931
Thai Ha Station	30	902.5
Lang Station	30	1075
National University Station	30	1249
Ring 3 Station	30	1009
Thanh Xuan 3 Station	25	1480
Ha Dong Bus Terminal Station	25	1122
Ha Dong Station	25	1323
La Khe Station	25	1110
Van Khe Station	25	1428
Yen Nghia Station	40	1032
Total	375	

Appendix 1-3: Daily operation plan and headway

Time (hour)	Number of trains	Headway (minutes/train)
5:00-6:00	8	7.5
6:00-7:00	10	6
7:00-8:00	15	4
8:00-9:00	15	4
9:00-10:00	10	6
10:00-11:00	10	6
11:00-12:00	10	6
12:00-13:00	10	6
13:00-14:00	10	6
14:00-15:00	10	6
15:00-16:00	10	6
16:00-17:00	15	4
17:00-18:00	15	4
18:00-19:00	10	6
19:00-20:00	10	6
20:00-21:00	8	7.5
21:00-22:00	8	7.5
22:00-23:00	6	10
Total	190 (trains)	

APPENDIX 2: SAFETY PLAN

PART 1: GENERAL PROVISIONS

Chapter 1: Objectives

Article 1: Objectives

1. The regulations aims to establish a Safety Management System and improve urban railway Safety standards by prescribing policies and methods of urban railway operation.
2. Safety of railway transportation will be ensured by following the Regulations, related regulations and rules are developed by departments of the Company, and in compliant with Vietnam Railway Law, other related laws and regulations, standards, technical regulations which are stipulated by MOT.

Chapter 2: Basic policies to ensure safety of railway transportation

Article 2: Basic safety policies

1. President and board members shall seek to build systems and regulations to operate urban railways with safety-first mind, the establishment of management policies to ensure safety in every aspect such as railway facilities, vehicles, and employees.
2. President, board members and all the employees shall observe the following rules:
 - (1) Ensuring safety is the most critical in railway transportation.
 - (2) Observing laws and regulations is the basis of safety
 - (3) Serious and strict work attitude is essential for safety.
 - (4) In case of accidents, incidents occurred, or if there is risk of occurring accidents, incidents, it is necessary to prompt implement appropriate countermeasures, putting the most priority in lifesaving.
 - (5) Safety information is circulated sufficiently, quickly and correctively.
 - (6) Always be highly aware of safety and completion of works
3. Measures to maintain and improve safety for UR facilities, RS and other issues which have been developed based on policies in clause 1 of Article 2 will be reviewed from time to time based upon the implementation to ensure transport safety.

Chapter 3: Systems to implement and manage measures to ensure safety in urban railway transportation

Section 1: Organizational structures to ensure safety in urban railway transportation:

Article 3: Responsibilities of Board members, General Director, Deputy General Director:

1. Board members will take final responsibility to ensure safety in urban railway transportation.
2. Board members shall set up a management system and establish measures to implement the tasks to ensure safety in urban railway transportation.
3. In formulating business plans relating to facilities, operation, personnel, investment, budget and others, General Director, Deputy General Director of the Company shall request managers and aforesaid managerial personnel in Article 4 to implement assessment over safety and feasibility.
4. Board members shall need to understand UR operation business and its management and implement improvements if necessary.
5. Board members shall respect comments and opinions of general safety managers.
6. To prepare for accidents, incidents cases, or risks of accidents, incidents, disasters as well as cases possibly causing difficulties to transportation safety, it is necessary to define the establishment of a Special Reacting Committee, and deciding on personnel in charge, reacting measures and other necessary items in compliant with scope, contents and notice to all employees.

Article 4: Organization structure

1. The organization structure relating to safety in urban railway transportation is shown as “safety management system (appendix 1)”, in which responsibilities and authorities of each in-charge person and each manager are as follows:
 - (1) General safety manager: control tasks to ensure UR transport safety.
 - (2) Operation safety manager: control operation-related matters under supervision of general safety managers.
 - (3) Train crew manager: responsible for qualification and performance of train crew or drivers in Depot under supervision of the operation safety manager or RS manager.

- (4) Manager of Business, PR department: responsible for general works at stations, under instruction of general safety manager
 - (5) Manager of Electricity, signaling, telecommunication department: responsible for works relating to electricity, signaling, telecommunication equipment, under instruction of general safety manager.
 - (6) Manager of civil works department: Responsible for works relating to civil works and architectures under instruction of general safety manager.
 - (7) Manager of station equipment, track department: Responsible for works relating to station equipment, track under instruction of general safety manager.
 - (8) Manager of Rolling stock department: responsible for works relating to RS under the instruction of general safety manager.
 - (9) Manager of Safety – quality department: responsible for works relating to measures to ensure safety and prevent accidents, incidents, under instruction of general safety manager.
 - (10) Manager of Finance – accounting department: responsible for works relating to finance, which are necessary for ensuring UR transport safety under instruction of general safety manager
 - (11) Manager of organization, human resources department: responsible for works relating to personnel management and training, in order to ensure transport safety, under instruction of general safety manager.
 - (12) Manager of Planning, project department: responsible for works relating to necessary business plan to ensure UR transport safety under instruction of general safety manager.
2. Nomination and dismissal of the above-mentioned managers and managerial personnel must be noticed to Board members and all employees, often updating, clarifying about transport safety related responsibilities and institutions.
 3. Managerial personnel and managers listed in clause 1 of Article 4 shall conduct works and manage the safety appropriately by close communications and sharing of necessary information about operation plan, facilities and rolling stock.
 4. In case that managerial personnel and managers in clause 1 of Article 4 cannot execute their works due to accidents or other reasons, authorized persons and representatives of managers shall take over the tasks.

Article 5: Nomination and dismissal of general safety manager

1. General safety manager shall be nominated from those who met the requirements set by governmental regulations and have sufficient knowledge and experience of safety management. Usually, general director of urban railway company will take over this position.
2. General safety manager will be dismissed in the following cases:
 - (1) In case he or she does not meet the requirements any more due to transfer to a different position.
 - (2) In case that government regulator requests on dismissal
 - (3) In case they cannot continue the works due to illness, injuries or any other uncontrollable reasons.
 - (4) In case that there is possibility that general safety manager breaks any rules and it might damage urban railway transport safety if the managers stay at the position.

Article 6: Nomination and dismissal of UR operation manager

1. Operation safety manager will be nominated among those who meet requirements of government regulations. Usually, manager of integrated train operation department will take over this position.
2. Based upon clause 2 in Article 5, regulations on dismissal cases of operation safety manager will be applied.

Section 2: Responsibilities of general safety manager of the company:

Article 7: Responsibilities of general safety manager

General safety manager has following responsibilities relating to urban railway transport safety:

- (1) Ensure safety of operation, equipment, rolling stock and appropriateness between departments, as well as comprehensively managing departments and monitoring transport works implementation, putting top priority on lifesaving.
- (2) Make sure all employees fully observe related laws and regulations and aware of safety-first policy.
- (3) Check the implementation and management of transportation, safety management system, and take improving actions if necessary.
- (4) Join important decision-making processes to ensure transport safety, express opinions necessary to ensure safety to board members, Deputy General Directors and related managers.

- (5) Gather necessary information regarding accidents and disasters and provide it to the operation safety managers, and other related managers or give them necessary instructions.

Article 8: Responsibilities of operation safety manager:

1. In order to ensure safety, operation safety manager is responsible for the tasks relating to train operation, including developing and revising operation plan, using staffs on-board and RS, training for train crew, train operation management, collecting information about train operation.
2. Operation safety manager will nominate train crew manager from staff who manage train crew members and report to general safety manager.
3. Operation safety manager must coordinate with managers of other departments to confirm safety and feasibility in developing train operation plan and other related plans by considering conditions relating to personnel and facilities of operation, and RS.
4. Operation safety manager shall probably manage the training of operation related personnel.
5. Operation safety manager will closely communicate and coordinate with general safety manager to ensure safe train operation.
6. Operation safety manager shall share necessary information relating to operation to general safety manager and other related managers to ensure safety for train operation.

Article 9: Responsibilities of train crew manager

1. Train crew manager is assigned by operation safety manager and under instruction of operation safety manager, he/she will have following responsibilities:
 - (1) Relating to management, maintenance of qualification of train crew.
 - (2) Relating to periodical confirmation about education of qualification of train crew members and report to operation safety manager
2. Train crew manager assigned by RS department manager will be under instruction of manager of RS department and will have following responsibilities:
 - (1) Relating to management and maintenance of qualification of drivers in depot
 - (2) Relating to periodic confirmation on education of qualification of drivers in depot and report to manager of RS department.

Article 10: Responsibilities of manager of business, PR department

1. Manager of business, PR department is responsible as following, in order to manage station works, aiming at ensuring transport safety.
 - (1) Relating to operation at station
 - (2) Relating to provision of necessary information such as weather forecast, so that train can safely be operated
 - (3) Relating to management and maintenance of qualification of station staffs
2. When considering on preparation of transport plan and other related ones, Business, PR manager shall affirm safety and feasibility by considering overallly the situation of station staffs, equipment and facilities at station.
3. Business, PR manager properly manages the training and education for station staffs.
4. Clause 5, 6 of Article 8 are also applicable for business, PR manager.

Article 11: Responsibilities of electricity, signaling and telecommunication manager:

1. Electricity, signaling and telecommunication manager takes following responsibilities to manage and maintain electricity, signaling and telecommunication equipment, in order to ensure transport safety:
 - (1) Relating to development and changes in management system as well as management plan of maintenance and improvement of electricity, signaling and telecommunication equipment.
 - (2) Relating to the ensuring of compatibility between UR facilities, RS with operation.
 - (3) Relating to safety in maintenance and improvement of electricity, signaling and telecommunication facilities.
 - (4) Relating to sharing of necessary information for safe train operation such as weather and status of electricity, signaling and telecommunication equipment.
 - (5) Relating to maintenance of qualification of staffs to maintain, improve electricity, signaling and telecommunication equipment.
2. While reviewing maintenance plan, manager of electricity, signaling and telecommunication department shall need to confirm on safety and feasibility by overallly considering conditions of related personnel and status of electricity, signaling and telecommunication equipment.

3. Manager of electricity and signaling, telecommunication department shall properly manage the training for personnel relating to electricity, signaling and telecommunication equipment.
4. Clause 5, 6 of article 8 are also applicable to manager of electricity, signaling and telecommunication department.

Article 12: Responsibilities of manager of station equipment, track department:

1. Manager of station equipment, track department is responsible as following, to manage and maintain station equipment, track, ensuring transport safety:
 - (1) Relating to establishment, changes of management system as well as management plan of maintenance, improvement of station equipment and track.
 - (2) Relating to ensuring of compatibility between UR facilities, RS with operation.
 - (3) Relating to safety in maintenance and improvement of station equipment and track.
 - (4) Relating to sharing necessary information for safe operation such as weather forecast and status of station equipment, track.
 - (5) Relating to managing qualification of staffs in maintaining, improving station equipment and track.
2. While reviewing maintenance plan, manager of station equipment, track shall confirm safety and feasibility by overally considering conditions of personnel relating to station equipment, track and status of station equipment, track.
3. Manager of station equipment, track department shall properly manage the training and education for station equipment, track staffs.
Clause 5, 6 of Article 8 are applicable for manager of station equipment, track department.

Article 13: Responsibilities of Civil works manager

1. Manager of civil works department has following responsibilities to manage and maintain civil works, in oder to ensure transport safety:
 - (1) Relating to establishment, changes in management system as well as management plan of maintenance and improvement of civil works.
 - (2) Relating to ensuring compatibility between civil works, RS with operation.
 - (3) Relating to ensuring safety in maintenance, improvement of civil works

- (4) Relating to sharing of necessary information for safe train operation such as weather forecast and status of civil works.
- (5) Relating to management of qualification of staffs to maintain, improve UR civil works.
2. While reviewing management plan of maintenance, manager of civil works department must confirm the safety and feasibility by considering conditions of civil works' maintenance staffs and status of civil works.
3. Manager of civil works department shall properly manage the training and education for civil works staffs.
4. Clause 5, 6 of Article 8 are also applicable for manager of civil works department.

Article 14: Responsibilities of manager of RS department

1. Manager of RS department takes following responsibilities to manage the maintenance of RS, in order to ensure transport safety:
 - (1) Relating to establishment, changes of management system, as well as management plan of maintenance and improvement RS.
 - (2) Relating to ensuring compatibility between UR facilities, RS with operation.
 - (3) Relating to coordination between RS turning plan and operation plan.
 - (4) Relating to management of qualification of personnel to maintain, improve RS.
2. Manager of RS department shall nominate train crew manager from staff who are at management positions of drivers in depot, and report to general safety manager.
3. While developing usage plan of RS, manager of RS department must confirm the safety and feasibility by overallly considering about RS staffs and status of equipment.
4. Manager of RS department shall properly manage the training and education for RS related staffs.
5. Clause 5, 6 of Article 8 are also applicable for member of RS department.

Article 15: Responsibilities of Manager of Safety-Quality department

Manager of Safety – quality department shall have responsibilities of confirming the implementation and measures of management to ensure transport safety by implementing internal audit, promotion of measures to improve safety such as those to avoid recurrence.

Article 16: Responsibilities of Manager of Finance – accounting department:
Manager of Finance – accounting department shall overallly consider about the safety and other contents, developing estimation plan and other necessary ones.

Article 17: Responsibilities of Manager of organization, human resources department:

Normally, Department of organization, human resources shall overallly consider about improvement of safety, establishing HR plan, training plan which are necessary to ensure transport safety and others necessary.

Article 18: Responsibilities of manager of project, planning department
By considering overallly about safety and implementation of necessary adjustments to develop and implement business plans and other necessary ones, manager of planning, project department shall manage progress of those above works.

Chapter 4: Tasks and management of tasks to ensure urban railway safety:

Article 19: Report of work

1. Manager of safety – quality department often receive reports from operation safety manager and managers of other related departments regarding useful information to prevent accident's recurrence, unsafe activities, and those affecting transport safety, as well as reporting for acknowledgement of general safety manager.
2. Manager of safety – quality department shall try to share information from report received at clause 1 of this article to related departments.
3. All staff to share necessary information to ensure train operation safety.

Article 20: Measures to prevent accidents, incidents

1. General safety manager shall instruct to manager of safety – quality department for analyzing and adjustments of useful information in order to prevent recurrence of accidents, disasters, ensuring transport safety, discussing on necessary measures to prevent accidents, incidents.
2. General safety manager shall receive report as mentioned in clause 1 of Article 20, setting up necessary measures. As well as, based on viewpoint of improving awareness of safety and prevention of risks of accidents, incidents, general safety manager shall notice to related departments about

contents necessary to be announced to participants, in order to ensure information sharing among staff.

Article 21: Report of accidents, incidents and solutions

1. All staff shall understand about Special reacting committee, in-charge personnel, solutions, reacting activities, other necessary activities when accident, incident happens; in case of accidents, disasters, it is necessary to implement solutions, reacting.
2. Operation safety manager and managers of other related departments shall implement flexible and appropriate measures which may be beyond their authority if necessary.
3. If anyone is noticed of the accidents, incidents or disasters, he/she shall swiftly report with a designated method.
4. Operation safety manager and managers of other related departments shall report about accidents, incidents, disasters swiftly to government agencies as regulations.
5. Specific reacting contents are mentioned in “Regulations on reacting when accidents, incidents occur”, “Operation rules” and other related regulations.

Article 22: Confirmation of tasks

1. General safety manager, operation safety manager and managers of departments shall continuously finding out potential risks by visiting the site to confirm the implementation of tasks regarding transport safety in the company and the application of safety management system, as well as working out clear and correct measures for those needed improvements.
2. Manager of safety-quality department shall prepare annual internal auditor, asking for approval of general safety manager, and based on that plan, to inspect activities stipulated in this regulations towards related departments.
3. Manager of safety – quality department shall request related departments to improve via request of improvements if improvement needed items are found while internal auditing.
4. Manager of related departments after receiving request for improvements will need to promptly set up necessary solutions for improvements, and report to manager of safety – quality department for acceptance of report of improvements.
5. General safety manager shall receive report of internal auditing from manager of safety – quality department and develop appropriate handling measures for items which are in need of improvement.

Article 23: Training and education about transport safety

General safety manager shall request related departments to frequently prepare training, education plans for staffs, and organize the training, in order to ensure transport safety, as well as, requesting evaluation on training process, developing appropriate measures if necessary.

Article 24: Building up regulations/rules on safety

1. In addition to this provision, the operation safety manager and other related department managers shall develop the necessary safety regulations regarding maintenance of urban railway rolling stock and equipment, train operation, and review them continuously.
2. All staff shall be informed of the provision described in the clause 1 of this article in order to ensure train operation safety.

Article 25: Management of regulations, documents and records

1. This regulation, other safety regulations, documents on urban railway facilities and rolling stock structures and specifications, and other materials shall be properly managed and stored in regarding divisions.
2. The general safety manager's opinions and minutes of the meetings to decide safety policies shall be properly stored in accordance with regulations of the information management system of the company.
3. Rules relating to operation safety assurance and necessary documents shall be properly stored and managed by the chiefs of responsible unit in accordance with regulations of the information management system of the company.

PART 2: MANAGEMENT OF TRAIN OPERATION

Chapter 1: Management of train operation

Article 26: Operation management system

To prescribe Regulations on The system for operation management and instruction and command system

Article 27: Operation plan

1. When developing concrete operation plans, the operation safety manager shall confirm the safety and feasibility of the plans based upon specific train performance curves, taking into consideration following factors.
 - (1) Travel time between stations
 - (2) Loading and unloading of passengers at stations
 - (3) Restraints by passing and signaling facilities

- (4) Restraints regarding on-board crews and vehicle
- (5) Other matters necessary for smooth train operation
2. The train performance curves shall be developed, in consideration of vehicle performance including acceleration and deceleration, maximum speeds, and curving performance, track conditions including curves and slopes, and drivers' skills.
3. The operation safety manager shall check the development and changes of the operation plans.
4. The operation safety manager in cooperation with the department managers of rolling stock, electricity, station equipment, track, and civil works shall prepare documents regarding vehicle performance, track conditions, and speed limits at curves which are necessary to develop operation plans,

Article 28: Work shift of on-board crews

The operation safety managers shall develop work shift plans for on-board crews in consideration of appropriately balancing work hours and on-board hours based upon relevant regulations

Article 29: Management of qualifications of on-board crews

1. The train crew manager shall confirm regularly whether on-board crews fulfill qualifications according to the operation safety manager's instructions.
2. In case the train crew manager finds out that any of the crews do not meet the qualifications physically or mentally, or in terms of the knowledge and skills, he or she shall take actions such as suspension from work or on-board retraining, and shall report the situation to the operation safety manager.
3. In case the operation safety manager receives a report on questionable qualifications and performances of any crews, he or she shall swiftly make a decision on necessary measures such as suspension/re-education based upon comments of the crew training manager.
4. In case any of the crews who have been suspended from work are expected to improve their knowledge and skills by training, the train crew manager shall develop an education program, confirm the results after the re-education, and decide whether they can get back to work or not, based upon the discussion with the operation safety manager.

Article 30: Report on qualifications of on-board crews and drivers in Depot

Regarding qualifications of on-board crews and drivers in Depot, the operation safety manager shall compile reports from the train crew manager and rolling stock department manager to make report and send it to the management agency in accordance with the regulation on the following matters:

- (1) The driver's license No. and the results of medical checks and aptitude tests
- (2) Numbers of driving errors and the performance in the training and re-education program

Article 31: Training, management and maintaining of qualifications of operation related staff

1. The operation safety manager and other department manager shall understand and manage the competence, knowledge, and skills of train operation staff with appropriate methods and procedures designated in the "Operation Rules".
2. The persons who are responsible to supervise operation related staff shall base on "Operation Rules" to regularly check necessary matters regarding operation related staff's competence before or during their work hours and give them necessary instructions.
3. The persons who are responsible to supervise operation related staff shall record the competence of operation related staff under their supervision and confirm its changes over time.

Article 32: Train operation system

1. The operation safety manager shall designate responsible persons, command and control systems, and control methods regarding the following matters and specific train operation management in the operation rules:
 - (1) Understand the state of operation in time of confusion and disruption of operation
 - (2) Unexpected changes of operation schedules
 - (3) Important safety-related instructions such as change of operation, etc. in order to ensure safety among trains
 - (4) Gathering and sharing the information on abnormal weather
 - (5) Communication of approval to start maintenance, improvement and other works which may affect train operation and information related to restart operation after their completion

2. The operation engaging person shall understand information of state of operation, track conditions, and abnormal weather, etc., and, in case those conditions may affect safe train operation, he or she shall give to priority to take quick and appropriate actions
3. When operation is suspended due to incidents, accidents or disaster, the OCC manager shall give the restart command after confirming the safety of the site.
4. In case an operation schedule has to be changed due to incidents, accidents, disaster, the OCC manager's command shall be complied, contact and confirm with related persons in accordance with the operation rules to make sure that instructions are transmitted.
5. In case operation safety might be disrupted due to abnormal weather, the operation safety manager shall take proper actions such as suspension of operation.
6. The operation safety manager shall record and store the information on the state of operation, communications of regarding persons, and proper actions for accurate operation.

Article 33: Measures taken in case of incident, accident, disaster, etc.

1. In case of emergency such as incidents, accidents and disasters, the operation engaging person shall take quick and proper actions in order to rescue passengers and minimize the damage in accordance with Regulations on reacting when accidents, incidents occur.
2. In case of incident, accident, disaster, the emergency personnel or other people need to enter track area in order to conduct rescue and first-aid activities, the OCC manager shall take necessary actions including suspension of operation to ensure those people's safety.

Chapter 2: Management of urban railway facilities

Article 34: Management system of urban railway facilities

1. To prescribe regulations of management system of urban railway facilities
2. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall develop regulations regarding improvement and maintenance of railway facilities and report them to the general safety manager. The case of changes shall be applied similarly.

3. When maintenance and improvement work of urban railway facilities is carried out, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall develop maintenance plans appropriate to the necessity for improving safety and reliability and consistency between rolling stock and the future operation schedule, and report the plans to the general safety manager.
4. For implement and check of completion of urban railway facility maintenance and improvement, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall closely communicate with the related divisions and make proper plans in compliance with railway facility standards and maintenance rule to avoid affecting guarantee of operation safety.
5. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall summarize inspection plan and inspection results of urban railway facilities, prepare maintenance plan and improvement plan and report the plans to the general safety manager.
6. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall designate methods and procedures of inspection, maintenance and improvement work of urban railway facilities in accordance with the urban railway facilities standards and rules make sure that all the related employees completely understand them.
7. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall share information to the related person in order to carry out daily inspection based on maintenance rules and maintain urban railway facilities in safe condition for use.

Article 35: Ensuring safety in maintenance and improvement of urban railway facilities

1. Regarding maintenance and improvement of urban railway facilities, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall stand on the viewpoint of securing safe train operation and preventing accidents to confirm the details of the work item from stage of maintenance and improvement plan.

2. The workers (including contractor) who are involved in the urban railway facility maintenance and improvement work shall exchange information in with related people on the details, methods, and sequence of maintenance and improvement work.
3. The workers (including contractor) who are involved in maintenance and improvement work of urban railway facility before, during, and after the work, shall confirm the train operation status, properly deal with errors of urban railway facilities, confirm the safety after completion of the work based on regulations of departments.
4. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall make sure that all the maintenance and improvement workers (including contractor) thoroughly understand the rules and necessary manuals to carry out works safely.
5. When maintenance and improvement work of urban railway facilities is carried out within track areas, the maintenance and improvement workers (including contractor) shall have close communications with the OCC manager and conduct confirmation and necessary report.
6. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall provide urban railway facility maintenance and improvement workers (including contractor) with necessary information on train operation status to ensure safety of trains and workers.
7. The managers of electricity, signaling telecommunication department, civil work department, station equipment, track department shall gather accident information, including incidents and accidents happened on other sites as much as possible and make sure that maintenance and improvement workers (including contractor) thoroughly understand them.
8. In case of being concerned about problems which may affect train operation, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall promptly notify the OCC manager and other related persons.

Article 36: Management of qualifications of urban railway facility maintenance and improvement workers:

1. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall prepare

training plans, implement necessary training in compliance with training regulations, manuals and standards of the departments and simultaneously manage capacity, knowledge and skills of the worker related to urban railway facility maintenance and improvement.

2. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall regularly check the qualifications of the workers related to urban railway facility maintenance and improvement.
3. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall record the qualifications of the workers related to urban railway facility maintenance and improvement work and confirm the changes.
4. Management of qualifications of operation-related staff among workers related to urban railway facility maintenance and improvement shall comply with Article 31.

Article 37: Outsourcing of urban railway facility maintenance and improvement work

1. When urban railway maintenance and improvement work is outsourced, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall examine experience, scale, skill and performance records of the candidate companies, designate the scope of work to be outsourced and methods to select the companies among the qualified companies.
2. In order to let the outsourced company that undertake maintenance and improvement work (hereafter called Contractor) perform maintenance and improvement work properly, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall choose from the contractor a person that takes responsibility of supervision.
3. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall clearly designate instructions, reports, procedures (including communication mechanism in case of emergency) necessary to maintenance and improvement work with the responsible person.
4. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall provide

necessary information to maintenance and improvement work and instructions if necessary to the contractor through the responsible person.

5. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall request the responsible person of the contractor to carry out education, training and examine competence in accordance with Article 36 in order to help workers of the contractor have sufficient knowledge and skill necessary to carry out maintenance and improvement work and promptly report the results.
6. In case of incidents, accidents, etc. or risk of happening incidents, accidents, etc. due to operation performed by the contractor, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall request the responsible person of the contractor promptly report and give necessary instructions.
7. The managers of electricity, signaling telecommunication department, civil work department, station equipment, track department shall conduct inspections of operation performed by the contractor, if any problems which may affect train operation, give instructions to solve them.

Chapter 3: Rolling stock management:

Article 38: Rolling stock management system

1. To prescribe regulations on the system related to rolling stock management.
2. The manager of the rolling stock department shall develop rules and regulations regarding manufacturing, maintenance and improvement of rolling stock and report to the general safety manager. The same shall be applied to cases of change.
3. When rolling stock is manufactured, maintained and improved, the manager of the rolling stock department shall develop maintenance plans appropriate to the necessity for improving safety and reliability and consistency between urban railway facilities and the future operation schedule, and report the plans to the general safety manager.
4. Regarding execution of manufacturing and improving rolling stocks, the manager of the rolling stock department shall stipulate inspection method and procedure during manufacture and at completion and make sure that the related people understand sufficiently.

5. The manager of the rolling stock department shall summarize inspection plans and inspection results of rolling stocks, develop rolling stock maintenance plans, and report to the general safety manager.
6. The manager of the rolling stock department shall designate methods and procedures of inspection and maintenance in compliance with regulations of Vietnam, codes and standards on environmental guarantee, noise, maintenance rules for rolling stock etc., and share these contents with the related staff.
7. The manager of the rolling stock department shall share information to the related person in order to carry out daily inspection based on maintenance rules and maintain rolling stock in safe condition for use.

Article 39: Rolling stock operation plan

The manager of the rolling stock department shall make rolling stock operation plan, ensuring operation safety taking rolling stock structure and functions into consideration, track structure and operation safety protection equipment and rolling stock inspection plan which is required in train operation.

Article 40: Management of qualifications of rolling maintenance workers

1. The manager of the rolling stock department prepare training plans, implement necessary training in compliance with training regulations, manuals and standards and simultaneously manage capacity, knowledge and skills of the rolling stock maintenance worker.
2. The manager of the rolling stock shall regularly check the qualifications of the rolling stock maintenance workers.
3. The manager of the rolling stock department shall record the qualifications of the rolling stock maintenance workers and manage to confirm the changes.
4. Management of qualification of train drivers in depot shall be in compliance with Article 29 “Management of qualifications of on-board crews”. In this case, it is possible to change “On-board crews” to be “train drivers in depot”, and change “Operation safety manager” to be “The manager of the rolling stock department”.

5. Management of qualifications of operation-related workers among rolling stock workers shall comply with Article 31.

Article 41: Outsourcing of rolling stock maintenance

1. When rolling stock maintenance work is outsourced, the manager of the rolling stock department shall examine experience, scale, skill and performance records of the candidate companies, designate the scope of work to be outsourced and methods to select the companies among the qualified companies.
2. In order to let the outsourced company that undertake rolling stock management work (hereafter called Contractor) perform maintenance work properly, the manager of the rolling stock department shall choose from the contractor a person that takes responsibility of supervision.
3. The manager of the rolling stock department shall clearly designate instructions, reports, procedures (including communication mechanism in case of emergency) necessary to maintenance work with the responsible person.
4. The manager of the rolling stock department shall provide necessary information to maintenance work and give instructions if necessary to the contractor through the responsible person.
5. The manager of the rolling stock department shall request the responsible person of the contractor to carry out education, training and examine competence in accordance with Article 40 in order to help workers of the contractor have sufficient knowledge and skill necessary to carry out maintenance work and promptly report the results.
6. In case of incidents, accidents, etc. or risk of happening incidents, accidents, etc. due to operation performed by the contractor, the manager of the rolling stock department shall request the responsible person of the contractor promptly report and give necessary instructions.
7. The manager of the rolling stock department shall conduct inspections of operation performed by the contractor, if any problems which may affect safe operation of rolling stock, give instructions to solve them.

PART 3: IMPLEMENTATION

Article 42: Responsibility of implementation

Right after this regulation takes effect, Safety and Quality Department shall be responsible to individuals, units and departments related to let individuals, units and departments be responsible for specific assignment and make detail form, and implement of this regulation.

Article 43: Building up and adjustment of safety management regulation:

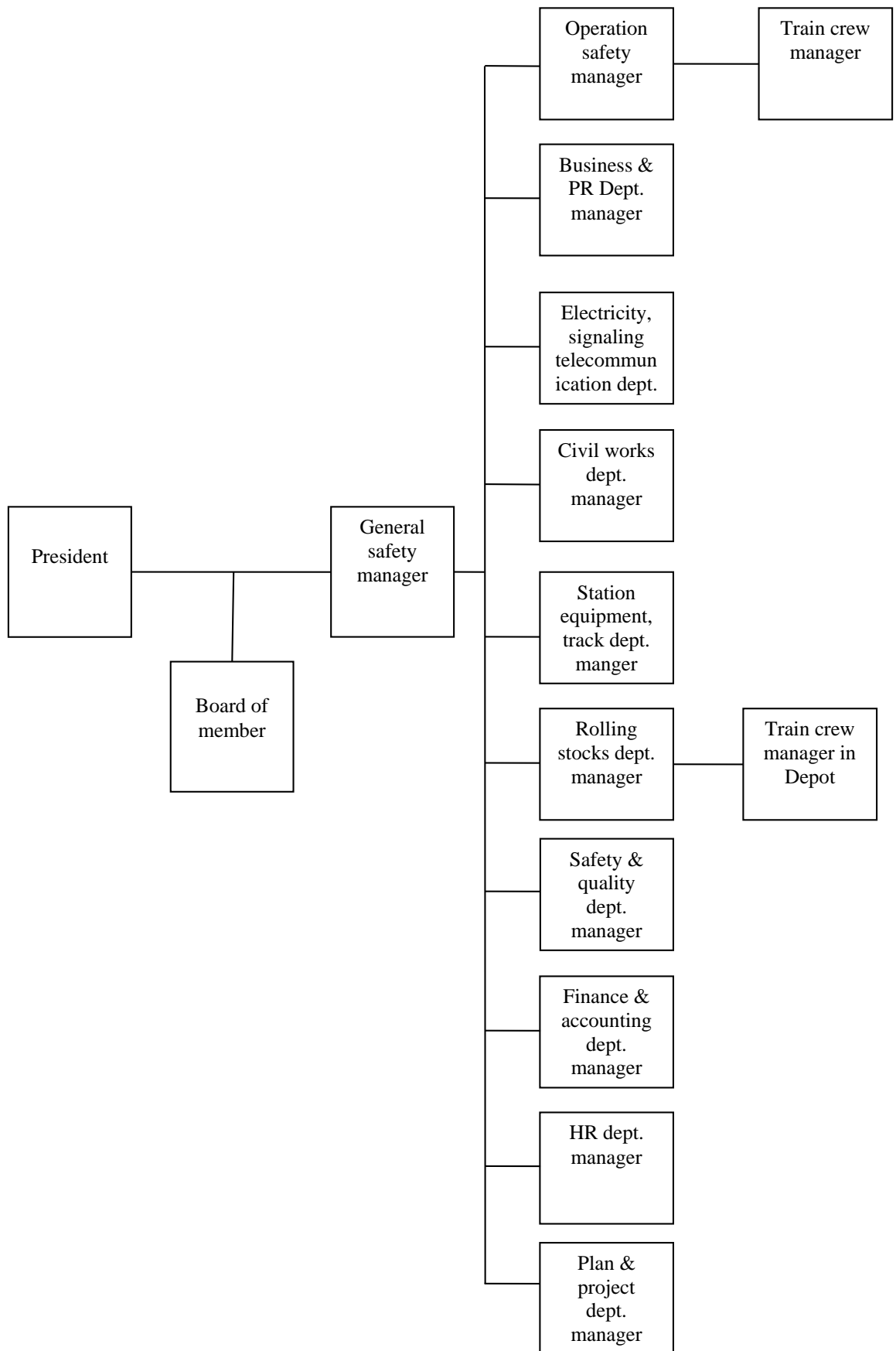
In addition to this safety management regulation and other related regulations, Safety and Quality Department shall be responsible to build up and adjust necessary regulation related to safety management to ensure operation safety. Annually, the general safety manager shall summarize and evaluate results and announce performance of safety in a year. The general safety manager of the company shall review and adjust the contents in this regulation if necessary in order to enhance safety degree in operation but ensure properly comply with legal regulations and performance capacity of the company.

Article 44: Implementation effect

Regulation on Safety management including 02 parts ... article, comes into effect from to ... all individuals, units and departments of the company. During the implementation, if any contents need to be adjusted, changed or added to be suitable with the practical activities, the relevant individuals, units, departments shall be responsible for comments to the leader of the company to promptly issue necessary supplement and modifications.

(Attachment 1)

SAFETY MANAGEMENT MECHANISM CHART OF HMC



General regulations on handling with urban railway accidents and incidents

CHAPTER 1: GENERAL PROVISIONS

Article 1: Objective:

The promulgation of general regulations on handling with urban railway accidents and incidents, aiming at dealing with urban railway accidents and incidents, contributing important part into the guarantee of transport safety in Hanoi City.

Article 2: Scope of application:

This stipulates principles and responsibilities of organizations, individuals, the procedures, contents, the handling, analysis, statistics system, reports on accidents, and incidents of urban railway.

Article 3: Subjects of application:

This regulation is applicable to organizations and individuals who relate to urban railway activities in Hanoi City.

Article 4: Interpretation of terms:

Terms in this regulation are understood as the following:

1. Urban railway accident is the fact that urban railway vehicles collide, derail, collapse, collide to humans or other transport vehicles and vice versa, or UR operating vehicles collide to obstacles, causing men loss or damaging to human health, or to properties.
2. Urban railway incidents refer to problems occurring during the urban railway transport causing obstacles to train operation, but yet urban railway accidents happened.
3. Influent persons in urban railway accidents refer to those whose health is damaged; normal life is affected due to direct impacts by urban railway accidents.
4. The death in urban railway accident refers to those who are dead at accident site, or injured in the accident and die at hospital, at home or on the way to hospital; injured and die 24 hours after accidents happen.
5. Urban railway operation controlling center (OCC): is a department under Hanoi Metro Company, which is responsible for train operation in all areas under the authority of HMC.

Article 5: Legal basis:

1. Railway Law, June 14, 2005;
2. Decree no. 14/2015/NĐ-CP dated February 13, 2015 by the Government which

- stipulate in details for several articles of Railway Law;
3. Decree no. 107/2012/NĐ-CP dated December 20, 2012 by the Government stipulating functions, responsibilities, authority and organization structure of MOT;
 4. Decision no. 17/2008/QĐ-UBND dated September 29, 2008 by HPC stipulating functions, responsibilities, authority and organization structure of DOT of Hanoi City.

Article 6: Principles of handling with urban railway accidents:

1. The handling of urban railway accidents must be implemented in safe, quick and timely manner.
2. When there is urban railway accident, organizations and individuals participating in railway operation must be responsible for coordination and handling.
3. Implement prompt rescue for suffered persons, protect the site and properties of the State, enterprise and suffered persons.
4. Notice; report timely about the accident to related organizations and individuals.
5. All organizations and individuals of responsibilities shall need to promptly come to the site to handle whenever information on urban railway accident is noticed to them; are not allowed to obstacle the recovery and operation of urban railway after the occurrence of accident.
6. Chairperson of Railway accident handling council (hereinafter called Chairperson of Council) or those who chair the handling of accident are authorized to mobilize all available resources to serve the rescue activities for urban railway accidents.
7. Arrange to resume urban railway operation activities as soon as possible without troubling to inspections and handlings by functional organizations.

Article 7: Principles of handing with urban railway incidents:

1. All urban railway incidents must be recorded.
2. When there is urban railway incident, the preparation of a record shall be made by OCC.
3. General Director of Hanoi Metro Company shall specify regulations on the handling of urban railway incidents.

CHAPTER 2: CLASSIFICATION OF URBAN RAILWAY ACCIDENTS AND INCIDENTS, AND RESPONSIBILITIES OF CONCERNED PARTIES

Article 8: Classification of urban railway accidents:

1. Reason-based:

- Subjective reason based accidents refer to those occur due to violations to the laws and related regulations on urban railway by organizations or individuals under Hanoi Metro Company.
 - Objective reason based accidents refer to those occur due to irresistible reasons (natural calamities and enemy-inflicted destruction) or others apart from subjective reasons of Hanoi Metro Company.
2. Accident-based
- Operation accidents refer to those occurring when trains collide, derail, and collapse, collide to obstacles causing loss to human life, health or damages of prosperities of organizations and individuals.
 - Other accidents refer to those relating to man, which occur when trains collide or run over men, men who jump down onto the rail or fall down from the train, through earth, stones or other things onto trains, which cause loss of properties, human life and health.
3. Damage-based
- Less serious accidents refers to those causing property loss valued from ____ VND to less than ____ million VND;
 - Serious accidents refer to those in which there are one to two injured or loss of properties valued from ____ VND to less than _____ VND;
 - Very serious accidents refer to those in which there is one death or from three - four injured or more, or causing loss to properties valued from ____ VND to under _____ VND;
 - Extremely serious accidents refer to those in which there are two and more deaths or five or more injured, or causing loss to properties valued from ____ VND to less than _____ VND;

Article 9: Responsibilities of Hanoi Metro Company:

1. Responsibilities of drivers or safety supporting staff when there are urban railway accidents:
 - a) Arrange first-aid to victims; protect properties of the Government, enterprise, victims in accordance with stipulations in Article 13 of this Regulation.
 - b) Arrange the protection for accident site in compliant with stipulations in Article 13 of this Regulation.
 - c) Notice and report about the accident to concerned organizations and individuals as prescribed in Article 14 of this Regulation.
 - d) Responsibilities of dispatchers when there is urban railway accident:
 - e) Prepare record, report about the accident in compliant with format prescribed in **Appendix 1** enclosed in this Regulation or early prepare the Dossier of the accident (if the accident happens within the responsible zone) or receive Dossier made by driver, safety supporting staff (if the accident

- happens in depot-to-depot section) and transfer to authorized State organizations in accordance with stipulations in Chapter 3 of this Regulation.
- f) Dispatchers (safety supporting staff) refer to those who chair the handling of early consequences of the accident when Chairperson of the accident council or someone who chairs the handling of accident has not come to accident site.
2. Hanoi Metro Company is responsible for chairing and coordinating with PCs of places where the accidents happen and DOT of Hanoi City to arrange handling activities for urban railway accidents, arrange rescue works on urban railway.
 3. When urban railway accident occurs, General Director of Hanoi Metro Company, upon reasons, scale of losses, shall decide on the establishment of Council of accident handling or assignment of someone for chairing the handling of accident.;

Article 10: Responsibilities of members in Council of accident handling or chairperson for accident handling (under Hanoi Metro Company):

1. Chairpers
on of Council or accident handling chairperson are those who have highest authority and responsibilities in dealing with accident at site, have the right to mobilize site resources to rescue victims; make necessary decisions, coordinating with local authorities to handle accidents in accordance with regulations and shall instruct to complete the following works:
 - a) Arrange to rescue victims, protect the site and properties;
 - b) Participate in inspection, preparation of site inspection report upon request by police;
 - c) Coordinate with concerned local organizations and authorities to complete legal procedures for the death (if any);
 - d) Prepare rescue plan and allocate personnel to transfer passengers, freights, rescue to cars, fixing bridges, tracks and other vehicles which are damaged, in order to soon resume train operation, ensuring full safety during rescue period;
 - e) Compile all records and dossiers of the accident, define workload, in-need personnel of departments who join in rescue activities;
 - f) Prepare comprehensive report, propose commendation and reward to achievements and penalize organizations, individuals who join in the handling of accident; propose solutions to competent authorities to resume the operation of urban railway and deal with any related arisen problems.
2. All members of the Council must fully execute their assigned tasks and well complete assigned jobs. All other organizations and individuals joining the accident handling shall be under the instruction and must observe every

decision by Council's Chairperson or Chairperson for accident handling.

Article 11. Responsibilities of Hanoi DOT:

When there is information about urban railway accident, Hanoi DOT must timely dispatch staff to join in the inspection and handling of the accident upon request by competent authorities, as well as supervising, collecting materials for analysis , defining reasons and handling with violations.

Article 12. Responsibilities of all level PCs where the train runs through

When there is urban railway accident, PCs of all level where there is accident are responsible for coordinating with the police, railway enterprises to help victims, protect properties of the Government, enterprises and victims. In case that the death's personal information is not available or there is less possibility for bury, PC at the site is responsible for the bury.

CHAPTER 3: PROCEDURES OF HANDLING WITH URBAN RAILWAY ACCIDENTS

Article 13: Arrange first aid to victims and protect accident site:

1. Arrange first aid to victims:

Drivers or safety supporting staff shall promptly arrange first aid to victims in the depot-to-depot section, station staff are responsible for providing first aid to victims at stations, allocate those who can look after and protect victims' properties.

2. Arrange protection at accident site:

Drivers, safety supporting staff are responsible for arranging protection at accident site in compliant with current regulations when there is accident in depot-to-depot section; station staff are responsible for arrange protection for accident site if the accident happens in station area.

Article 14: Procedures of noticing about urban railway accident:

1. Drivers or safety supporting staff shall promptly report to dispatchers.

2. Dispatchers shall promptly report to adjacent stations, departments and leaders of Hanoi Metro Company.

3. Hanoi Metro Company shall promptly report to the following organizations:

a) Police which is closest to the accident site;

b) PCs closet to the accident site;

c) Hanoi DOT;

d) Concerned organizations.

4. Hanoi DOT shall promptly report to MOT, HPC if there is extremely serious accident.

Article 15: information method:

When urban railway accident happens, related subjects stated in Article 14 of this rules shall promptly find all methods such as communication means or direct notification about the accident.

Article 16: Content of information:

1. Contents of the initial information about the accident must be timely, accurate and include some main contents as follows:
 - a) Location of accident (km, pavilions, wards, districts ...)
 - b) Time of the accident;
 - c) Number of dead, wounded;
 - d) Preliminary status of the scene, accident vehicles, affected infrastructure;
 - e) Other important information relating to the accident provided by informers.
2. In addition to the initial notification as prescribed at clause 1 of this Article, the dispatcher shall make accident reports in accordance with the form provided in Appendix 1 to this Rule and submitted with the initial record of the accident to the competence authorities upon request;

Article 17: Handling of accident information:

All organizations and individuals when receiving information about the accident or request for coordination and assistance in information notification shall find all ways and means to implement as requested and feedback to the requester (if possible), at the same time, implement immediately work, professional methods as prescribed if accident is under their responsibilities. If the accident is out of their responsibility, they shall continue informing of the accident to the organizations and individuals who are responsible and shall closely coordinate and support at the request of such responsible organizations and individuals.

Article18: Preparation of initial record:

1. Initial accident records shall be prepared by public security agency. In the case the public security agency is not present yet, train driver shall, in addition to first aid for the victims and notification of accidents, make initial records. Initial record made by train driver shall be handed over to the dispatcher of that line.
2. Initial record shall include:
 - a) Statement of accident (the contents of the accident statement is made according to Form 1 in Appendix 2 of this Rule);
 - b) Testimony as Form 2 of Appendix 2 of this Rule or report by victims (if the victim is still able to say and write);
 - c) Report of the involved urban railway staff;
 - d) Delivery-receipt document of victims, assets and related documents.

3. Initial record shall be made in 03 sets and sent to relevant authorities as follows:
 - a) 01 set to public security of the province, district where urban railway accident happens within 12 hours since occurrence of accident;
 - b) 01 set to the regulator – DOT;
 - c) 01 set to relevant division of Hanoi Railway One Member LLC

Article 19: Consequence settlement and recovery of traffic in case of dead toll:

In case of dead toll in urban railway accident, Hanoi Railway One Member LLC shall be responsible to look after and protect the victim and coordinate with public security, local authorities to perform burial procedure for the victim.

Article 20: Traffic recovery in case of asking for rescue:

1. In case of urban railway incidents, traffic accidents, or other unusual circumstances that cause the train stop and those who are present at the scene are unable to resolve to ensure safety for train to continue running, Hanoi Railway One Member LLC shall ask for rescue. Where necessary there should be involved by functional forces of the city, such as the Steering Committee for prevention of accidents, disasters, troubleshooting, firefighting police of the city etc.
2. The General Director of Hanoi Railway One Member LLC shall stipulate specifically organization of rescue and recovery of traffic on urban railway.

CHAPTER 3: ANALYSIS, REPORTING, STATISTICS OF URBAN RAILWAY INCIDENTS, ACCIDENTS

Article 21: Analysis of urban railway incidents, accidents:

1. Urban rail incidents, accidents shall be analyzed the cause, studied the countermeasure for occurrence of incidents and accidents and applied with such countermeasures.
2. The General Director of Hanoi Railway One Member LLC shall be responsible to organize analysis of urban railway incidents and accidents, study on countermeasures to accidents, incidents and application of these countermeasures.
3. If necessary, Hanoi People's Committee will decide to establish a Council of urban railway incidents and accidents including representative of Hanoi Railway One Member LLC, representative of Hanoi Department of Transport, representative of concerned agencies and units and experts in the field of transport safety of urban railway.

Article 22: Statistics of urban railway incidents, accidents:

1. All urban railway accidents, incidents shall be recorded as a basis for analysis, conclusion of cause, summary of general safety situation in urban railway activity and advice for leaders at all levels in ensuring traffic order and safety of

urban railway.

2. Hanoi Railway One Member LLC shall be responsible to keep initial record, statistics, reports, and summary of accident, incidents situation.

3. Monthly, quarterly, every 6 months, every 9 months and even year, Hanoi Railway One Member LLC to summarize situation of urban railway accident, incidents as prescribed and report to Hanoi Department of Transport. Hanoi Department of Transport shall summarize and analyze report on incidents, accidents in the area and report Hanoi People's Committee, Ministry of Transport and relevant agencies.

CHAPTER 4: IMPLEMENTATION

Article 27: Enforcement:

This Rule shall take effect from day ___ month ___ year ___

Article 28: Implementation:

1. Hanoi Railway One Member shall take responsibility to popularize and guide subordinate units, organizations and individuals engaged in urban railway transportation to implementation this rule.

2. Hanoi Department of Transport shall chair and coordinate with relevant agencies to inspect and examine implementation of this regulation.

APPENDIX

(Enclose with general rules on handling urban railway incidents, accidents in Hanoi City)

Appendix 1

(URBAN RAILWAY ACCIDENT REPORT)

1. Full name and position of the reporter, unit:
2. The incident happens: ___ o'clock, day ___ month ___ year;
3. Weather situation when incidents or accidents happens:
4. Place, scene of the incident or accident:
5. Train number, motored car number, composition of the train, loading capacity:
6. Names and titles of the involved people: train drivers, safety support staff, train dispatcher, train operation staff in the station etc.
7. Overview of the situation, cause of the incident or accident:
8. The measure has been applied, settled:
9. Preliminary assessment of material damages:
10. Human loss:
 - a) Full name, age, male/female, occupation, address, identity card (or passport) ... of the victim;
 - b) Ticket/number of the victims, departure station, and arrival station, number of affected passenger cars.
 - c) Injury condition of the victim
 - d, Property and luggage of the victim
 - e) Relative of the victim
 - f) Solution method of the responsible person
 - g) Name and position of the person in charge of looking after victim's body
11. Preliminary conclusion about person to take responsibility
12. Date of the report. Report of persons in charge and other participated persons.

Appendix 2

Form 2: ACCIDENT STATEMENT

1. Name of the accident:
2. Time and location of the accident (km, segment, commune / ward, district, city)
3. Starting time of making statement
4. Participants (full name, position and unit) arrived at the scene of the accident, conducted a review of the scene, recorded the results.
5. Overview situation (train number, car motored number, number of cars, full name of the concerned person, weather condition, plan, train operation instruction, and contents of the matter when accident happened, scene diagram)
6. Exhibits, traces and measurements, relocation of the equipment of motored car, car, track, turnout and other equipment, etc.
7. Traces involving humans, the position has been displace, shifted etc.
8. Preliminary statistics of damages (motored car, car, track, turnout, traffic jam hours, number of delayed trains, number of transshipped or cancelled trains, the number of dead, wounded ...)
9. Preliminary conclusion (he cause and responsibility):
The statement completed at ___ hour, minute, date__month__year ___ re-read for members to hear, admit, and both sign on.

FORM 2. MINUTES OF TESTIMONY

Today, on ___ month ___ year__, at ___ o'clock, including those involved in testimony (full name, title), sit at ___ (place) to write testimony: age, native, ID number, permanent residence, current residence, occupation, company, position.

Contents of the testimony:

This testimony was read to Mr./Ms..... who admit and both sign on

COMPREHENSIVE ALTERNATIVE OF LINE 2A TRANSFER

Contents of the report include

1. Outline of Line 2A Project
2. Approach to implementing Line 2A transfer
3. Outline of Line 2A transferring contents; Civil works
4. Master Plan of Line 2A transfer
5. Policy of Line 2A transfer
6. Organization alternative for receiving Line 2A
7. Action Plan
8. Proposal

I. OUTLINE OF LINE 2A PROJECT

1. General information of Line 2A

The project was approved by Decision 3136/QD-BGTVT dated Oct 15, 2008, the main features:

- (1) Route: The starting of Cat Linh (connected to Line 3), the end of the New Ha Dong bus station, total length of 13.05km. 12 stations on the route; platforms length: 80m. Land acquired permanently: 49.57ha.
- (2) Main technical standards: GB 50157-2003
Code of practice for design; track gauge 1,435mm, the maximum speed 80km/h, average (minimum) speed 35km/h.
- (3) Project: level 1
- (4) Axle load: 14t
- (5) Maximum frequency: 2min
- (6) Maximum transport capacity: 28,500 pass/ hour/ direction
- (7) Depot: 19.63ha
- (8) Total investment cost: 552mil. USD

2. Implementation progress

According to RPMU of VNRA, the cumulative progress to Apr, 2013 main items as follows:

Civil works:

No.	Main items	Accomplishment (%)
1	Bored pile	72.70
2	Pillar body	56.91
3	Pillar head	54.87
4	Piles to improve soft soil of 5.6ha in Depot	100

Procurement, supply of equipment: EPC contractor is conducting the bidding procedures for procurement of train sets in China.

The training of human resources is the decision unit recruitment/enrollment

3. Plan (Line 2A project implementation)

The overall plan was updated on March, 2013 as follows:

No.	Item	start	completion
1	Civil works	2011/08/01	2014/11/30
1.1	Station construction	2013/02/01	2014/11/30
1.2	Construction of pillars and girder erection	2011/08/01	2014/07/20
1.3	Depot construction	2012/09/01	2014/11/30
2	Manufacture of girders	2013/02/01	2014/01/31
3	Track works	2014/03/01	2014/09/30
4	Completing the construction, equipment installation	2013/03/31	2014/11/30
5	Manufacture of rolling stocks	2013/03/01	2014/11/30
6	Training and technology transfer	2013/06/01	2014/12/14
7	Combination running test for the entire line	2014/12/16	2015/02/28
8	Unloading commissioning	2015/03/01	2015/05/30
9	Completion of Line 2A project	2015/05/31	

II. APPROACH TO IMPLEMENTING LINE 2A TRANSFER

4. The objective of the Line 2A transfer

The Line 2A transfer meets objective requirements and subjective requirements.

-Objective requirement: HPC manages unitarily the urban railway of Hanoi city, and simultaneously mobilize institutional resources to organize, manage, operate and support operation; in order to enhance the feasibility and efficient operation.

-Subjective requirement: Railway Law, the directions of the central government agencies

The objective of the transfer is in harmony meet the above requirements; synchronize planning and implementation process for the Line 2A project program, the plan involved Hanoi (TA project), ensuring the transfer of the overall project was completed Line 2A from MOT to HPC, building and

hosting databases to help verify proper responsibilities of stakeholders before and after the transferring.

5. Approach to transfer

The transferring/receiving Line 2A is large extent and complicated. There is no experience in Vietnam. Receiving agency - Hanoi City is in the process of capacity building (for the operating company and the relevant agencies) in order to ensure promptly enough management capacity, safe and efficient operation of Line 2A. Therefore, the approach to implement transfer of Line 2A is proposed as follows:

- Fully identifying scale, content, schedule and requirements for transfer.
- Analyzing the object/requirement for transfer: Transfer of ownership/responsibility and technology transfer.
- Combining the process of capacity building for operating company (and the relevant agencies of Hanoi) and the receiving Line 2A; simultaneously implementing.
- Actively cooperating with VNRA/RPMU in order to propose appropriate mechanisms applied.

The steps include:

No.	Main items
I	Transfer policy
II	Preparation works assignment
1	Planning, organization for overall transfer
2	Mechanism, Policies applicable to transfer
3	Component plans for implementation of transfer
III	Implementation of transfer

III. Outline of Line 2A transferring contents; Civil works

6. Line 2A transferring contents

At the orientation of transferring characteristics of the project and construction works, transferring contents are defined as follows:

No.	Contents	Notes
1	Personnel	Includes profile, labor contracts, the necessary qualifications/licenses, training results; career path
2	Civil works	Including land, landmark, safety corridor, the scope of protection, monitoring network, etc.

3	Equipment	Rolling stock, equipment, signal communication system, electrical system, etc. (including design, completion documents, spare parts for replacement, etc.)
4	Assets	Financial responsibility and the right to use and exploitation.
5	Technologies	Including Operating procedures, maintenance procedures, maintenance manuals, monitoring processes, and technology transfer.
6	Management systems	Management system for materials documents, information, human resources, safety, quality, finance, etc.
7	Agreements	Agreement in the project implementation process between the investor and the third party.
8	Contracts	Contracts that occurred during the implementation of the project
9	Responsibilities and obligations	The responsibilities and obligations of the investor incurred after the project implementation process with 3rd party and among contractors, suppliers, consultants, etc. with investors.
10	Mechanism, Policies (to apply)	
11	Others	

7. Line 2A transferring contents – the case of civil works

Depending on the size, characteristics, organizational plan and implement the project, the related content delivery needs of a building will be different; below lists the typical contents can be applied to service 2A:

- (1) Construction works
- (2) The survey documents (all of kinds)
- (3) The design tasks (basic design, technical design and construction design)
- (4) Framework of Standards
- (5) Basic design (and design adjustments and supplements)
- (6) Feasibility Study
- (7) Environmental impact assessment
- (8) Environmental management plan

- (9) Quality planning
- (10) EPC contract documents, the subcontract documents
- (11) Technical design (and design adjustments and supplements)
- (12) Construction design
- (13) The invitation documents for bidding (if any)
- (14) The bidding documents (if any)
- (15) The contract documents (if any)
- (16) The monitoring/ records documents
- (17) Quality management documents in the construction stage
- (18) Record documents of experiments and testing
- (19) The completion drawings
- (20) Uncompleted work items and related documents
- (21) The settlement documents
- (22) Maintenance plan
- (23) Maintenance manual
- (24) The warranty conditions
- (25) The conditions for technology transfer
- (26) Monitoring plan (operational stage works)
- (27) Environmental plan (operational stage works)
- (28) Fire protection plan (operational stage works)
- (29) Rescue of incidents plan (operational stage works)
- (30) Monitoring network, monitoring device (operational stage works)
- (31) Monitoring manual (operational stage works)
- (32) Reserve supply (operational stage works)
- (33) The relevant insurance contracts (before and after completion of construction)
- (34) Equipment and tools for operating/ maintenance
- (35) Outsourcing contract for maintenance (if any)
- (36) Safety certification for strength of construction
- (37) Safety certificates of fire and explosion prevention, environments
- (38) The scope of protection of
- (39) Construction boundary
- (40) The landmarks system
- (41) The relevant agreement
- (42) Legal documents related

IV. MASTER PLAN OF LINE 2A TRANSFER

8. Purpose of development of the Master plan of Line 2A transfer:

- (1) Review the overall conditions of the Line 2A transfer
- (2) It is a tool for discussing Line 2A transfer between MOT, HPC and the relevant competent agencies.
- (3) It is a basis for developing component plans.
- (4) Orientation to TA Project implementation, including implementation, the related research.
- (5) It is a basis for coordinating activities between the Line 2A implementation plan and TA implementation process.
- (6) It is a basis for mobilizing the necessary resources for Line 2A transfer.

9. Table of Contents of master plan of Line 2A transfer

For the purpose of the master plan as presented above, the list of contents of the plan is proposed as follows:

- Summary
- Definitions
 1. Overview
 2. Approach for Line 2A transfer
 3. Implementation methods of Line 2A transfer
 4. Comprehensive plan for implementation of transfer
 5. Component plans
 6. Adjustment between TA project and progress of Line 2A
 7. Organizing of implementation
 8. Coordinating mechanism between MOT/VNRA and HPC/MRB
 9. Plan of necessary resources
 10. Guarantee measures
- Attached documents
- Reference documents

10. Table contents of transferring plan for Line 2A civil works

According to the proposed plan transfer of the master plan, the transferring plan for civil works will be developed on the basis of contents as follows:

- I. Introduction
 1. Background
 2. Definition of terms
 3. Outline of the construction (Line 2A)
- II. Basis of transfer
 4. Objective of the civil works transfer

5. Related regulations
6. Implementation organization, results and progress of the Line 2A
7. Outline of the comprehensive plan for transfer
- III. Approach to the implementation of transfer
 8. Transfer principles
 9. Transfer items, contents and requirements of each item
 10. Detailed list of transfer items, documents, requirements
 11. Issues to be clarified
 12. Analysis of transfer items
- IV. Transferring plan
 13. Transfer of structural/architectural works
 14. Transfer of the land, the scope of protection, the land use right
 15. Transfer of operation/maintenance technology
 16. Transfer of responsibilities and obligations
 17. A mechanism for receiving the uncompleted works
 18. The role and responsibilities of departments under the HPC
- V. Necessary resources for the transfer
- VI. Specific mechanism to be applied
- VII. Transfer implementation schedule
 19. Analysis of milestones
 20. Detail schedule for each stage
 21. Explanation of schedule
 22. Transfer schedule management
- VIII. Guaranty measures
 23. Related items and works
 24. Interface management in transferring
 25. Measures to ensure schedule
 26. Measures against quality assurance
 27. Measures to ensure safety
 28. Risk management methods
 29. Coordination mechanisms
- IX. The completion of transfer and the management after transfer
 30. The process for transferring
 31. Process for Completion of transfer
 32. Management of received civil works after transfer
 33. Demarcation of responsibilities after transfer
 34. Mechanism to resolve matters arising
- X. Implementing organization
 35. Update on transferring implementation organization of MOT
 36. Comprehensive transferring implementation organization of HPC

37. Transferring implementation organization of MRB

38. Coordination between stakeholders

- Attached documents
- Reference documents

V. POLICY OF LINE 2A TRANSFER

The policy for transfer of Line 2A will establish the basic principles for orienting concerned parties to implement the transfer, including:

- 1) Planning of transfer;
- 2) Mobilizing resources for transfer
- 3) Organizing the implementation of transfer
- 4) Coordinating schemes
- 5) Studying on applying mechanism
- 6) Dealing with matters arising
- 7) Defining transferring roadmap

Analyzing the content of Policy for transfer

No.	Contents	Signification
1	Line 2A transfer is a process, from the surveying, collecting information, planning, preparing, and studying mechanisms/policies applicable to the organizing, the implementing and the finalizing of the transfer of Line 2A from MOT to HPC.	Determining the basic steps of transfer
2	Line 2A transfer consists of the transfer of all assets; workers and mechanisms and policies applicable to workers; plans, processes, procedures and operation and maintenance technology of Line 2A; documents, possession rights raised up in the performance of Line 2A investment construction project; and the institution of responsibilities and obligations between MOT, HPC and the third party (As applicable) upon the completion of Line 2A transfer form MOT to HPC.	Determining the scope of transfer
3	MOT and HPC are responsible for immediately starting up Line 2A transfer; relevant ministries and branches are responsible for monitoring and supporting Line 2A transfer.	The urgency of implementation of the transfer; requiring coordination of relevant parties

4	MOT and HPC are responsible for jointly studying mechanisms and policies applicable for Line 2A transfer; submitting to the Government for decision of contents beyond the competence of MOT or HPC.	Basis for studying applicable specific mechanism
5	MOT and HPC are responsible for cooperating for adjustment of plans and activities of Line 2A into relevant common programs, plans of HPC; ensuring the long-term effectiveness of Line 2A transfer, mitigating conflicts which may raise up from Line 2A transfer.	Basis for giving comments to Line 2A
6	Right upon the approval of the Government on Line 2A transfer policy, at the soonest and during the implementation of Line 2A transfer mission, MOT and HPC are responsible for supplying to each other all necessary information and documents for the purpose of preparation and implementation of Line 2A transfer.	Basis for requesting and exchanging of information
7	Line 2A transfer from MOT to HPC is considered completed as Line 2A commissioning performed by MOT and HPC with the support of MOT can initiate the safe and reliable operation upon Line 2A. Concurrently, all responsibilities which may occur upon Line 2A transfer will have been agreed between MOT and HPC. Contents that could not be agreed between MOT and HPC shall be submitted to the Government for consideration and decision.	Basic requirement for finalization of the transfer; Principle of dealing with disagreements

VI. Organization alternative for receiving Line 2A

11. General organization (HPC side)

- (1) Receiver: HPC
- (2) Permanent agency: MRB
- (3) Advising agency: JCC
- (4) Coordinating agency: HPC's departments, City's security, HPC's cabinet, People's committees of related districts (Ha Dong, Dong Da, Thanh Xuan); other concerned organizations
- (5) Directly using and managing body: Hanoi Metro Company

12. Classification and division into stages for implementation of receiving

12.1. Feature of Line 2A transfer

The Line 2A transfer has common and specific features as follows:

12.1.1. Common feature of Line 2A transfer

Transfer of assets and property rights, the right to use (between MOT and HPC).

12.1.2. Specific features of Line 2A transfer

- (1) There are several levels of implementation: One party is MOT, VNRA (and other departments) and RPMU, another party is HPC, MRB (and the relevant Departments) and Hanoi urban railway company (HMC: expected to be established).
- (2) The process of transferring Line 2A is incorporated into technology transfer activities.
- (3) The formation of institutions, capacity building for management and use of assets to be transferred is incorporated into transfer process.
- (4) Recruitment/training of a large number of personnel is incorporated into transfer process.
- (5) The Scale and value of transfer is large.
- (6) The high safety requirements.
- (7) The resources and organization scale to operate are large.

12.2. Classification of transfer, overall implementation method

According to the feature of the transfer task as described above, the transferred content is divided into two main fields:

12.2.1. Transferring/Receiving of technology:

MRB will directly perform management tasks of urban railway as regulator. HMC will directly perform management, operation and maintenance for Hanoi urban railway (including Line 2A). Therefore, MRB is in charge of receiving for this field, HMC is in charge of operation and maintenance.

12.2.2. Transfer of general rights, responsibility for assets, organizations:

This task will classify into each field, and assign each department/agency to perform a task. However, MRB will be the principal unit for implementation. HMC, as operation and maintenance agencies, will be engaged in the specific transfer process.

12.3. Division into stages for implementation

The purpose of division of implementation stages is to meet the objectives of the transfer in accordance with the feature of Line 2A transfer; to meet the overall schedule of transfer as well as comprehensive requirements and adequacy with specific and general from preliminary/principle stage to official stage. In it,

Transferring/Receiving of technology: it means that technical transfer. It

should be carried out early in accordance with the process of Line 2A project implementation and to the completion of the basic investment construction project of Line 2A. Referred to as Stage 1 – Technical transfer

Transfer of general rights, responsibility for assets, organizations: it will be implemented directly by each department and agency. This stage will develop the full necessary documents when each transfer is completed. The completion of this stage (Stage 2 – Transfer at working level) is the important base to implement a procedure of official transfer.

Official transfer (Stage 3 - Official Transfer): The procedure of official transfer will be the base for operational company to perform concrete activities on the object to be transferred. In this case, HMC will carry out organized activities, commissioning, preparing for the official commercial operation. The official transfer will be done through the ceremony between MOT and HPC. It will be carried out after the completion of Stage 1 and 2.

Completion of the transfer (Stage 4 – Finalization of transfer): It is particularly important task to put Line 2A into commencement of commercial operation as public transportation, and the Line 2A transfer is large-scale, more specific. So, it is not possible to apply the principle of "Receiving will be carried out after full implementation of Line 2A overall project has been finished". Receiving in the stage 1, stage 2 just meet the basic requirements, particularly the safety of the operation, and can be accepted as completed. The problems existing will be transferred to Stage 4.

13. The overall plan for the organization to receive Line 2A

13.1. STAGE 1. Technical Transfer:

1. Presided agency

MRB

2. Receiving agencies

MRB, HMC

3. Purpose

To get technical documents and records early, in order to understand the project, access to technology, in collaboration between the implementing organizations of Line 2A with TA project.

4. Method

(1) Updating, exchanging of the plan regularly and timely between HPC/MRB and MOT/VNRA

(2) Planning to exchange the documents on the basis of each party's plan.

(3) To make comments for the plan and the related documents.

5. Execution period

(1) Start: Under implementation of TA project

(2) Finish: After MOT/VNRA accomplished successfully the commissioning and the procedures of internal acceptance, has received the relevant certification (safety, fire protection, environment, etc.) (After about 7 days).

6. Results:

(1) The documents of transferring records

(2) The agreement between VNRA and MRB or between MOT and HPC

(3) The mechanism to apply to the project and/or the transfer

13.2. Stage 2. Transfer at working level

1. Implementation agencies

Department of Finance, Department of Planning and Architecture, Department of Environment & Resources, the relevant District People's Committee, MRB, HMC

2. Invited agency

General affairs office of HPC

3. Purpose

To receive each item; assets, financial obligations, civil works, safety corridors for operation, landmarks, and so on.

4. Principles

The overall handover of the each principal content between competent agencies

5. Method

(1) Consideration on the completed documents

(2) Carry out early, depending on the results of the project implementation

6. Results

(1) The documents for each item transfer, attached documents

(2) The agreement on the problems existing

7. Execution period

(1) Start: When finished with the main contents of each relevant legal documents; scheduled after one month from the completion of construction works

(2) Finish: After MOT/VNRA accomplished successfully the commissioning and the procedures of internal acceptance, has received the relevant certification (safety, fire protection, environment, etc.) (After about 14 days).

13.3. Stage 3. Official Transfer

1. Presided Agency

MOT - HPC

2. Invited agencies

Government Office, Ministry of Finance, Ministry of Planning and Investment

3. Purpose:

Official transfer of Line 2A from MOT to HPC is the basis for MRB, HMC to implement preparatory activities, commissioning in order to put Line 2A into commercial operation.

4. Principles

When the handover of the contents is basically approved, completed (Stage 2 has been completed), the integrated documents of transfer is reported to HPC

5. Method:

(1) The completion of transfer activities at working level, and compiling the integrated document of transfer

(2) The integrated document of transfer describes the process and results of transfer; commitments of each agency, the problems existing

6. Ceremony

Official transfer ceremony – Conclusion of the records of handover

7. Execution period

For seven days after completion of the Stage 2 – transfer at working level

8. The attached documents

(1) The records of handover

(2) The integrated documents of transfer

9. Results

Report to the Prime Minister by attaching the records of handover (between HPC and MOT)

13.4. Stage 4. Finalization of transfer

1. The principal unit for implementation:

MRB

2. Agencies for operation and maintenance

HMC

3. The coordination agencies

(1) Department of Finance, Department of Planning and Investment, Department of Home Affairs, Department of Planning and Architecture, Department of Environment & Resources, Public Security, the relevant District.

(2) General affairs office of HPC

4. Purpose

To finalize the remaining content; unifying plan of measures to resolve existing disagreement.

5. Principles

Exhaustively resolving for the point of complaining, existing problems

6. Method

Organize the activities for each problem, identify the feature of problem and determine the settlement plan; authority decisions; applying mechanism if necessary.

7. Results

- (1) The records of the completion for confirmation of the transferring contents.
- (2) The agreement on plan of measures to resolve existing disagreement
- (3) The consent and approval of the competent authority: Government, Ministry, HPC (depending on the problem).
- (4) The integrated records of the completion of Line 2A transfer between MRB and VNRA

8. Execution period

- (1) Start: After the official transfer
- (2) Finish: 6 months or less from the date of official transfer

VII. Action Plan

To ensure the preparation required for the transfer, in accordance with plan implementation schedule Line 2A project, proposed action plan as a basis for cooperation between the parties as follows:

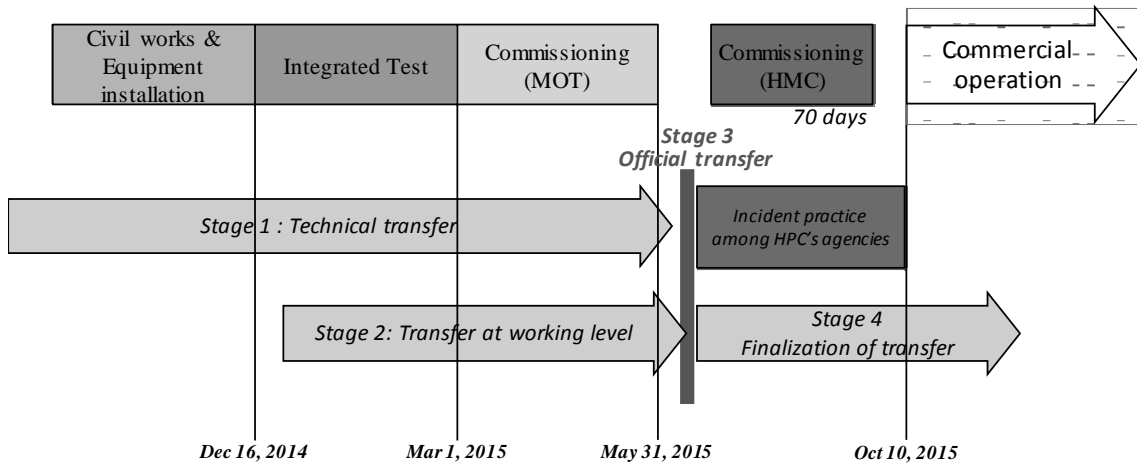
- Comprehensive plan for Line 2A transfer: Sep, 2013
- Component plan: Dec, 2013
- Alternative for transfer implementation: Feb, 2014
- Proposal of mechanisms applicable for the transfer: Apr. 2014

VIII. Proposal

On the basis of content analysis, report on, through the proposed master plan for Line 2A transfer, including:

- (1) Transfer policy
- (2) The process of implementation
- (3) Organization alternative for implementing
- (4) Action Plan

Process chart of Line 2A transfer



BAN QUẢN LÝ ĐƯỜNG SẮT ĐÔ THỊ HÀ NỘI
HANOI METROPOLITAN RAILWAY MANAGEMENT BOARD-MRB

DỰ ÁN TĂNG CƯỜNG NĂNG LỰC CƠ QUAN QUẢN LÝ ĐSĐT
VÀ THÀNH LẬP CÔNG TY VẬN HÀNH BẢO DƯỠNG ĐSĐT HÀ NỘI
TA PROJECT TO STRENGTHEN THE CAPACITY OF REGULATOR AND TO ESTABLISH OPERATION AND
MAINTENANCE COMPANY OF METROPOLITAN RAILWAY LINES IN HANOI CITY

CHUYỂN GIAO DỰ ÁN TUYẾN 2A – LINE 2A PROJECT TRANSFER

KẾ HOẠCH TỔNG THỂ CHUYỂN GIAO DỰ ÁN TUYẾN 2A
MASTER PLAN FOR LINE 2A PROJECT TRANSFER

(Dự thảo – Draft)

MÃ SỐ/CODE: OM-DOC 001 - 001

Hà Nội, 2/2014

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BỘ GIAO THÔNG VẬN TẢI
MINISTRY OF TRANSPORTATION

UBND THÀNH PHỐ HÀ NỘI
HANOI PEOPLE'S COMMITTEE

CHUYỂN GIAO DỰ ÁN TUYẾN 2A
LINE 2A PROJECT TRANSFER

KẾ HOẠCH TỔNG THỂ CHUYỂN GIAO DỰ ÁN TUYẾN 2A
MASTER PLAN FOR LINE 2A PROJECT TRANSFER

Hà Nội,/2014

Acronyms and Abbreviations

AFC	Automatic Fare Collection systems
ĐSDT	Urban railway
Dự án HTKT	TA project to strengthen the capacity of regulator and to establish operation and maintenance company of metropolitan railway lines in Hanoi city
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
MRB	Hanoi Metropolitan Railway management Board
OCC	Operation Control Center
O&M	Operation and Maintenance
RPMU	Railway Project Management Unit (VNRA)
SCADA	Supervisory Control And Data Acquisition
SIG	Signal Communication system
TA Team	Japanese experts team to implement TA project
VNRA	Vietnam Railway Administration

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Introduction

On Hanoi urban railway project (construction investment), Line 2A (Cat Linh – Ha dong) was studied in 2004; in this period, Line 2A (Cat Linh – Ha dong) was located on Hanoi city and the province of Ha Tay. Therefore, MOT shall be management agency in accordance with the Law on railways; approval on Project plan (dated Oct. 15, 2008).

On May 29, 2008, The National Assembly issued the resolution to adjust the administrative boundaries of Hanoi city and some concerned provinces, the geographical area of Line 2A became completely in Hanoi city; so, Line 2A would need to be transferred to HPC in accordance with the Law on railways.

On the other hand, Line 2A project is the first urban railway project in Vietnam and will be put into the first operation. Therefore, it is necessary to prepare the conditions to be able to operate Line 2A; including the Human resources training, construction management systems to operate and exploit, preparation of institution and capacity for Line 2A management. These contents, according to the research results of the consulting and the relevant authorities in the country, should be done firstly through the establishment of company to manage, operate, exploit.

So, on Feb. 20, 2010, Deputy Prime Minister Nguyễn Sinh Hùng has directed the agency assigned the project management (MOT or HPC) to establish operating company or to handover to a business functions company at least one year before the end of the construction project phase (Official letter No. 968/VPCP-KTTH); On Mar. 29, 2013, Minister Đinh La Thăng proposed that HPC immediately would establish the company for operation and maintenance of urban railway Cát Linh – Hà Đông in order to meet the requirement of the project schedule for the recruiting organizations and training; agreed to the transfer of project contents (Meeting conclusion notice No. 182/TB-BGTVT); Meeting conclusion notice No. 463/TB-VPCP dated Dec. 30, 2013, Deputy Prime Minister Hoàng Trung Hải has instructed and requested HPC to urgently complete dossier, submit competent authority's reviews, approve the establishment of company in accordance with regulations.

Under the guidance of the Government and the requirements of MOT, HPC urgently complete these procedure to submit the documents of the establishment of urban railway company in Hanoi to Government, and HPC also directed concerned agencies to coordinate with the agencies of MOT in order to prepare recruitment and enrollment for the first training phase of Human resources to be sent to China.

Actually, the mission of Line 2A project transfer has huge scope and complexity; including the transfer of all assets; workers and mechanisms and policies applicable to workers; urban railway system of Line 2A project; plans, procedures and operation and maintenance technology of Line 2A; documents, ownership, possession, assets right, right of use, responsibility raised up in the performance of Line 2A project; the institution of responsibilities and obligations between MOT, HPC and the third party (if any) after completion of Line 2A project transfer.

The mission of transfer should be considered comprehensively based on the transfer policy; sufficient preparation to consider the legal basis, planning of roadmap, determining issues to be managed, the principles and conditions for transfer, the resources and the alternative for transfer implementation. So, from March/2013, MRB has started to draft the Master plan for Line 2A project transfer with support project of Japanese experts. This plan should be coordinated closely between the construction agency under MOT and HPC; finally, the Master plan for Line 2A project transfer should be adopted to MOT and HPC, as the basis for coordinating and directing of the implementation../.

Chapter I. General Description

1. Policy for Line 2A Project Transfer

*Purpose:*The policy for Line 2A project transfer will establish the basic principles for orienting concerned parties to implement the transfer, including:

- (1) Determining scope, objectives, priorities, important constraints of the transfer;
- (2) Overall planning of the transfer;
- (3) Determining basis for mobilizing transferring resources;
- (4) Developing alternative to implement the transfer;
- (5) Developing coordination scheme;
- (6) Study on application mechanism;
- (7) Handling on arisen issues.
- (8) Determining transferring roadmap

Table 1: CONTENTS OF TRANSFER POLICY

No.	Contents	Meaning
1	The mission of Line 2A project transfer is a process, from the surveying, collecting information, planning, preparing, studying mechanisms/policies applicable to the organizing, the implementing and the finalizing of Line 2A project transfer from MOT to HPC.	Determining the basic steps of transfer
2	The mission of Line 2A project transfer consists of the transfer of all assets; workers and mechanisms and policies applicable to workers; urban railway system of Line 2A project; plans, procedures, operation and maintenance technology of Line 2A; documents, ownership, possession, assets right, right of use, responsibility raised up in the performance of Line 2A project; and the institution of responsibilities and obligations between MOT, HPC and the third party (if any) after the completion of Line 2A project transfer form MOT to HPC.	Determining the scope of transfer
3	MOT and HPC are responsible for immediately starting up Line 2A project transfer; relevant ministries and branches are responsible for monitoring and supporting transfer of Line 2A project.	The urgency of implementation of the transfer; requiring coordination of relevant parties
4	MOT and HPC are responsible for jointly studying mechanisms and policies applicable for Line 2A transfer; submitting to the Government for decision of contents beyond the competence of MOT or HPC.	Basis for studying applicable specific mechanism
5	MOT and HPC are responsible for cooperating for adjustment of plans and activities of Line 2A project into relevant common programs, plans of HPC; ensuring the long-term effectiveness of Line 2A project transfer, mitigating conflicts which may arise from Line 2A project transfer.	Basis for synchronizing with the process of Line 2A project to build institutional urban

No.	Contents	Meaning
		railway system in Hanoi
6	Immediately after the Policy for Line 2A project transfer was approved by the Government, at the soonest and during the implementation of Line 2A project transfer, MOT and HPC are responsible for supplying to each other all necessary informations and documents for the purpose of preparation and implementation of Line 2A project transfer.	Basis for requesting and exchanging of information
7	The mission of Line 2A project transfer from MOT to HPC is considered completed when Line 2A project commissioning performed by MOT, issued the necessary certificates for completing the urban railway construction investment project, and HPC with the support of MOT can commence the safe and reliable operation of Line 2A. Concurrently, all responsibilities which may occur upon Line 2A project transfer will have been agreed between MOT and HPC. Contents that could not be agreed between MOT and HPC shall be submitted to the Government for consideration and decision.	Basic requirement for finalization of the transfer; Principle of dealing with disagreements

2. Objectives of the Master Plan for Line 2A transfer

2.1. Objectives of the Master plan for Line 2A transfer

The Master plan for Line 2A transfer provides an instruction for overview of the agency under MOT and HPC organization, detail plan, implementation of Line 2A project transfer from MOT to HPC; simultaneously it is an important basis for MOT and HPC to assume prime responsibility, coordinate and direct the Line 2A project transfer from MOT to HPC.

2.2. Objective of the Document

- (1) To comprehensively review conditions of the Line 2A.
- (2) To make a tool for discussion between MOT and HPC and between different stakeholders of the Line 2A transfer.
- (3) To make basis for carrying out component plans
- (4) To instruct the implementation of the TA project, including organization for implementation, relevant studies.
- (5) To make basis for coordinating activities and plans under Line 2A project with the progress of the TA project.
- (6) To make basis for mobilizing necessary resources for Line 2A project transfer.

3. Methodology for Planning

3.1. Principles of Planning

- (1) The planning needs to balance the points of view of both MOT as transferring party and HPC as receiving party.
- (2) Transfer object is adequately assessed
- (3) Context of the transfer is adequately assessed
- (4) Proposals in accordance with the capacity of principal stakeholders.

- (5) Differences and risks which may arise from the transfer are soon figured out and mitigated.
- (6) Provision of adequate basis and guidelines for establishing component plans.
- (7) To figure out and follow applicable regulations

3.2. Planning Requirements

- (1) Timely updates of progress and condition of Line 2A project;
- (2) To promote discussions and initiatives between MOT and HPC;
- (3) In accordance with the actual conditions, satisfy feasibility.

3.3. Planning Approach

3.3.1. Requirements of planning

- (1) To request the transfer of project;
- (2) Characteristics of urban railway project;
- (3) The legal system of urban railway in Vietnam should be perfected;
- (4) Institutional urban railway system in Hanoi under construction;
- (5) The characteristics of project.

3.3.2. Basic steps to be carried out

- (1) Comprehensive assessment on the transfer object
- (2) Legal status
- (3) Stakeholders
- (4) Assumptions, reference
- (5) Challenges; recommendation of alternatives for implementation
- (6) Responsibilities of stakeholders
- (7) Applicable strategy
- (8) Organization for implementation
- (9) Steps to be carried out
- (10) Necessary resources for the transfer
- (11) Coordination requirements are presented for each stage
- (12) Milestones
- (13) Principles for schedule adjustment

4. Scope of users

The agencies and organizations under the MOT, HPC are responsible for coordinating, implementing this plan, contractors, consultants and other units related to Line 2A project which are responsible for complying with the requirements and objectives of this Plan.

This document is subject to review, comparing the importance of the ministries and government offices in the evaluation process, advising the government on Line 2A project transferring tasks.

Chapter II. Contents of the Master Plan for Line 2A Project Transfer

5. General Introduction

5.1. General introduction of Line 2A project context

5.1.1. General information

Line 2A project was approved following Decision 3136/QĐ-BGTVT dated 15/10/2008, with main features as following:

- (1) Line: First departure is from Cat Linh (connected with Line 3), ending at new Ha Dong bus station, total length: 13.05km, 12 stations on the line, platform length: 80m, permanent land acquired: 49.57ha.
- (2) Main technical standards: Design standards GB 50157-2003; track gauge 1435mm, maximum velocity: 80km/h; average velocity (minimum): 35km/h.
- (3) Civil works Level I
- (4) Axle load 14t
- (5) Maximum headway: 2minutes
- (6) Maximum transport capacity: 28,500 passengers/hour/direction
- (7) Depot 19.63ha
- (8) Total investment : 552 mil. USD
- (9) Implementation method: EPC
- (10) Project owner: VNRA
- (11) Governing body: MOT

5.1.2. Schedule plan

Master plan updated in Feb, 2014 are mentioned as following:

No.	Items	Implementation		Duration (month)
		Start	Finish	
1	Official operation commencement	20/12/2015		
2	Commissioning	20/09/2015	19/12/2015	3
3	Inter-system adjustment	07/07/2015	19/09/2015	2.5
4	Equipment installation, decoration	20/09/2014	20/06/2015	6.1
5	Track installation	01/07/2014	20/04/2015	9.8
6	Superstructures of section, stations	14/04/2014	19/08/2015	16.4
7	Transport, launching box beam of main line	01/03/2014	15/02/2015	11.5
8	Beam casting yard construction	20/07/2013	30/11/2013	4.4
9	Handling with soft soil foundation at Depot	01/12/2012	31/12/2014	25.3

No.	Items	Implementation		Duration (month)
		Start	Finish	
10	Dong Da lake viaduct – initial stage	01/03/2010	30/09/2010	7.1
11	Construction at Nhue river	01/08/2012	31/05/2014	22.3
12	Entering/exit approach sections	01/03/2014	31/12/2014	10
13	Construction of stations	11/04/2013	19/08/2015	28.7
14	Construction of substructures at section's viaducts	01/04/2010	21/12/2014	57.5
15	Infrastructure construction at Depot	16/02/2014	30/04/2015	14.6
16	Construction of side-road of National way 6	01/01/2014	30/04/2014	4
17	Rolling stock related works	01/03/2013	30/09/2015	19
18	Training	01/01/2014	08/08/2015	19
18.1	Recruitment	01/01/2014	25/03/2014	3
18.2	Training at China	01/04/2014	20/06/2015	15
18.3	Training at Vietnam	01/06/2015	08/08/2015	14

5.1.3. *Outputs of Line 2A project*

Till early Feb, 2014, Line 2A project has gained the following main results:

1. Land acquisition: on-going, basically satisfy construction schedule;
2. Design: EPC contractor submitted all technical designs and cost estimate
3. Equipment procurements: Contractor is preparing to report to Project owner about bidding results to select manufacturer of rolling stock.
4. Civil works: Completing more than 70% of part till the pier cap, starting the casting of girder, the handling of soft soil foundation in Depot on-going.
5. Training and preparation of O&M personnel: EPC contractor amended the training plan, training cost estimate and submitted to Project owner since Jan 22, 2014

5.2. *Legal Basis for Proceeding with the Line 2A project Transfer*

The legal basis: The direction and opinions of the Government, the Ministry, HPC and the implementation results of the subordinate units related to Line 2A project transfer or the relevant contents of Line 2A project transfer.

List of the legal basis is presented in *Appendix 1*.

5.3. *Features of Transferring for urban railway projects*

The transfer of urban railway project has basic features as follows:

- (1) The scope of transfer is huge;
- (2) Transfer including complicated operation and maintenance technology;
- (3) Transfer including important transfer contents in terms of finance, authorities and responsibilities;
- (4) Requiring on verification of safety and operation capacity, maintenance of project items, the railway system of the project, personnel, management system and other resources;
- (5) Need to be tested more complicated, long time;
- (6) Need to be evaluated about safety by experienced and authorized organizations;
- (7) Difficult to identify on the project performance in comparison with design of the project (Feasibility Study);
- (8) Many parties join in the transfer;
- (9) Many issues, responsibilities may occur after transfer;
- (10) Need to prepare much on financial conditions, management system, social conditions, to be able to operate and maintain after transfer.

5.4. Common challenges of the Line 2A Project Transfer

Line 2A project transfer has following basic challenges:

- (1) Objects of transfer are complicated: long line, big amount, complex scope of transfer including elements of railway system, elements in terms of human being and elements of organizations.
- (2) Construction contractors and the acceptance of any urban railway projects domestically have not been satisfactory, need to gradually receive and adjust foreign experiences in compliance with the real context in Vietnam.
- (3) Personnel capability and administration system have not been developed sufficiently to accept and operate urban railway project.
- (4) Changes on implementation progress of the project.
- (5) Policy and mechanism for coordination between MOT and HPC on the transfer of this project have not been determined comprehensively.

5.5. Preparations for Transferring

5.5.1. Preparations of HPC

** Several initial preparation:*

- (1) TA Project to strengthen the capacity of regulator and to establish operation and maintenance company for urban railway lines in Hanoi city has provided important basis for the receiving of Line 2A:
 - Strengthen the capacity of regulator for urban railway in Hanoi city
 - Establish Hanoi Metro Company
 - Clarify the transfer conditions of Line 2A
- (2) DOHA coordinates in the establishment of Hanoi Metro Company, recruit and train for personnel of Line 2A

** Several outstanding issues:*

- (1) The establishment of Hanoi Metro Company is not paid much attention yet;
- (2) The policy for Line 2A project transfer is not clear yet;
- (3) Alternative to receive Line 2A is not confirmed yet.

5.5.2. *Preparations of MOT*

** Several initial preparation:*

- (1) Ministry's leaders have had meetings to steer the transfer, in terms of personnel.
- (2) VNRA - project owner, RPMU of VNRA still coordinate in transfer works, preparing contents of transfer in terms of Human resources.
- (3) Dept. of Organization, Dept. of Legal Affairs, Dept. of Transport participate into the transfer of Human resources.

** Several outstanding issues:*

- (1) The policy for Line 2A project transfer is not clear yet;
- (2) Alternative of transfer implementation is not approved yet.

6. Master Approach of Line 2A Project Transferring

6.1. Objectives, Scope and Contents of Line 2A project Transfer

The Line 2A project transfer must satisfy the following common and specific objectives:

6.1.1. Common Goal of Line 2A project Transfer

Satisfy requirements in Railway Law no. 35/2005/QH11 dated 14/6/2005 and direction of the Government, Ministries relating to Line 2A transfer from MOT to HPC; developing sufficient basis for HPC to get consensus on the management of Line 2A in terms of operation and maintenance in safety, self-controlling, unified manner, which can also satisfy all initial investment targets of the project as well as common strategies, plans of Hanoi City.

6.1.2. Specific Objectives of Line 2A project Transfer

- Line 2A project must be transferred (in terms of assets, personnel, technology and related contents) timely, to ensure timely commencement of operation, and shall continue to manage and operate effectively.

- Enhance effective implementation responsibilities of related parties before and after the transfer.

- Define sufficient and correct objects of transferring, including responsibilities of concerned parties, ensuring the transfer of the entire Line 2A project which has been constructed, taken over and certified as conformity and settled completely from MOT to HPC, construction works database to help to properly identify responsibilities of related parties before and after the transfer.

- HPC will manage all urban railway lines in Hanoi City, unifying the management institution and mobilizing resources to organize, manage, operate and support the operation, increasing the feasibility and operation effectiveness.

- Minimize damages and inadequates that may arise from the transfer.

6.1.3. Scope of Line 2A project Transfer

Line 2A transfer includes the transfer of the entire assets, laborers, policies applicable for the laborers; urban railway system of Line 2A; plans, procedures and technology to operate and maintain Line 2A; documents, ownership, possession, assets right, right of use, responsibilities formed during the implementation to complete Line 2A construction project, the demarcation of

responsibilities and obligations between MOT, HPC and a third party (if any) after completion of Line 2A transfer from MOT to HPC.

6.1.4. Line 2A project transfer Contents

According to the transfer policy, Line 2A transfer shall be conducted early to satisfy objectives of the transfer, the contents of the transfer are developed based on the scope of transfer, which can be separated into large parts as following:

- (1) Unifying the programs, plans to implement Line 2A project, with programs, plans relating to Hanoi City. Results include Agreements and contents, outputs conducted as agreements.
- (2) Transfer of Line 2A project works: results include As-built dossiers of the works (find reference details in **Appendix 2**);
- (3) Transfer of Technology: management system, procedures, plans, manuals for operation and maintenance of Line 2A;
- (4) Transfer of personnel for urban railway: personnel to be trained, certified, have suitable knowledge and skills for operating Line 2A;
- (5) Transfer of Finance: Dossier of project settlement; criteria, indices, financial calculation.
- (6) Transfer of exploitation, business of Line 2A: documents, data relating to exploitation and business of Line 2A;
- (7) Transfer of rights : land use right, design and design developing right, right to use and update for software, warranty right and insurance right.
- (8) Transfer of responsibilities: responsibilities for transferred personnel, responsibilities for a third party relating to management, operation of Line 2A, responsibilities for loan repayment.

** The contents of the transfer shall be clarified and developed in details in component transfer plans and during the implementation of the transfer.*

6.2. Principles of the Line 2A Project Transfer

6.2.1. To mitigate negative impacts on the progress of Line 2A project

To mitigate negative impacts on the progress of Line 2A project, the following principles should be followed:

- (1) MOT shall be proactively in implementing Line 2A project, HPC shall approach the implementation process of this project, contributing opinions early, on the basis of current regulation and commonly international practices or international standards which are permitted for application.
- (2) The development of component plans, or ganization alternative, implementation methods for Line 2A transfer shall be made, updated with the progress and results of implementation of Line 2A project.

6.2.2. To mitigate differences and losses as may arise after the transfer of Line 2A project

To mitigate any inaquadates or damages may arise after Line 2A transfer from MOT to HPC, the following principles shall be followed:

- (1) Exchange information, discussing and contributing opinions to enhance the unification between MOT and HPC on the progress and plan to implement Line 2A project, with related programs, plans of Hanoi City;

- (2) Conduct inspections, evaluations properly on the implementation progress, commissioning for Line 2A project;
- (3) Prepare sufficient and systematic transfer documents, as a basis for monitoring, testing, preventing and recovering issues;
- (4) Develop and implement plans, methods to compensate on any shortages, handling with problems in the implementation of Line 2A project to ensure general requirements.

6.2.3. *To optimize resources to be mobilized for the transferring*

To optimize resources to be mobilized for the transfer, the following principles shall be followed:

- (1) Evaluate, select options to transfer Line 2A within a overall program to develop the urban railway system in Hanoi city;
- (2) Define policies, prepare sufficient and updated plans for transfer;
- (3) Unify the implementation of Line 2A project with related programs, plans in Hanoi City;
- (4) Allocate related activities of the Line 2A transfer to suit the updated progress plan of Line 2A project;
- (5) Coordinate to develop foundations of personnel, institutional - administrative systems before implementing specific transfer;
- (6) Develop alternatives to organize proper implementation on the basis of task assignment to the appropriate agencies, correct use of objects, optimizing the capability of specialized agencies;
- (7) Mobilize relevant components of urban railway programs, plans in Vietnam;
- (8) Study and apply international standards, practices relating to construction and operation of urban railway.

6.2.4. *To mitigate disagreements as may arise in and after the transferring*

To mitigate disagreements as may arise in and after the transferring, the following principles shall be followed:

- (1) Comply with the transfer policy.
- (2) Conduct early and intensive discussions between relative parties from transfer policy to alternatives, plans, mechanism of Line 2A transfer and challenges that may arise.
- (3) Treat the making of dossiers of progress and defining the current status as target, without any stress on whether they are correct/ incorrect.
- (4) Treat long-term targets, overall effectiveness as criteria for implementation and coordination.
- (5) MOT and HPC to early develop alternative to implement the transfer, including assigning tasks and mobilizing sufficient personnel and resources for the implementation of the transfer.
- (6) Develop effective coordinating mechanism.
- (7) Mobilizing domestic and foreign expert participation by contributing opinions.

6.2.5. *To mitigate differences and losses as may be incurred by the Third Party (For example: labores, passengers)*

This can be satisfied by following below principles:

- (1) Implement requirements as regulation at the same time with focus points (labor law, social insurance law, health insurance law).

- (2) Learn international experience, practices which relate to the responsibility of urban railway transport service provision.
- (3) Consent and develop the mechanism, resources to execute responsibilities relating to the third party.

6.2.6. *The Transfer is feasible*

The feasibility of the transfer plan shall be satisfied by following below principles:

- (1) Defining suitable objectives, requirements with the transfer (on the basis of proper evaluation of current situation, progress, plan to implement Line 2A project, properly evaluate the capability, viewpoints, demand of related parties);
- (2) Considering that the alternative of implementing the transfer as the foundation;
- (3) Implementing overall plans, proper solutions for problems, challenges of the transfer;
- (4) Intensively participating and getting consensus by concerned parties, especially MOT and HPC, on the making of plans. Satisfying the demand of unifying guidance from the Government level to Ministries, and HPC, and the flexibility in the implementation of different levels; complying with legal regulations, which are in accordance with international practices and international standards which are applicable.

6.3. ***Bases and Reference Materials***

Bases: including legal related regulation, need to consider, implement and refer to during the implementation of the project, and during the transfer.

Documents to refer to: include standards applied worldwide.

Find details of bases and reference documents in ***Appendix 3***.

6.4. ***Master approach for the Transferring***

6.4.1. *Features of the Receiver and the Transferor*

- (1) *Receiving agency:* Hanoi City has currently been developing the capacity (for urban railway operator and regulator and other related agencies) to be able to manage and operate Line 2A safely and efficiently.
- (2) *Transferring agency:* MOT is both specialized ministry of transport and managing agency of Line 2A project. Experience and investment capacity to build and put urban railway into operation is in the process of establishment and completion.

6.4.2. *Master Approach for the Transferring*

- (1) Determine sufficient scale, content, progress and transfer requirements.
- (2) Classify objects/ transfer request: Transfer of ownership/ responsibility and technical transfer of civil works, technology, equipment, personnel.
- (3) Combine and integrate the process of building up capacity of the operator (and the relevant agencies of Hanoi) with the receiving of Line 2A.
- (4) MOT and HPC assigns the subordinate units, especially VNRA, MRB, Hanoi Metro Company (when established) to proactively coordinate, study alternatives, plans, appropriate mechanisms and policies before and during the implementation process of Line 2A transfer.

6.4.3. Steps to be carried out

No.	MAIN WORK ITEMS
I	TRANSFERRING GUIDELINE/ POLICY
II	TRANSFERRING PREPARATION
1	OVER ALL TRANSFER PLAN AND IMPLEMENTATION.
2	DETAIL PLAN OF TRANSFER IMPLEMENTATION
3	MECHANISMS AND POLICIES APPLIED TO TRANSFER (able to submit, approve many items, many times)
III	TRANSFERRING IMPLEMENTATION

7. Specific Transferring Approach

7.1. *Meaning and requirements of the transferring approach*

The transferring approach of Line 2A provides orientation of component transfer plan to meet the best purpose of the transfer as shown below:

- (1.) Fully assess the scope, contents of transfer or related to the transfer process, the matters that may arise after the transfer.
- (2.) Verify the quality, responsibility for quality (Project implementation).
- (3.) Determine the required adjustment/ harmony between the two parties (MOT and HPC) during the transfer implementation.
- (4.) Complete condition for transfer stages.
- (5.) Effective utilization of resources for transfer; promote efficiency of Line 2A project.

Accordingly, contents of transfer need to be analyzed, categorized and solutions for appropriate implementation:

7.2. *To group the transfer mission into transfer arrays*

To groupe the transfer mission into transfer array needs to mobilize capable professionals and experts in each appropriate field; ensuring thorough implementation, working full transfer. The transfer arrays, including:

- (1) Human resources
- (2) Civil works
- (3) Equipment
- (4) Operation
- (5) Finace
- (6) Exploitation, business of urban railway
- (7) Overall management (safety – quality, materials, general affair)

Each transfer array will be divided into smaller transfer arrays to facilitate the implementation.

7.3. *To group the transfer mission into stages*

As transfer volume is huge, the transfer aspects will be different implementation schedule, there will be sometimes that work are conducted at the same time. Therefore, it is necessary to

divide into stages to ensure early implementation of transferring, well prepared for official transfer agreement, building up the basis for timely putting Line 2A into operation promptly after completion of construction, acceptance, and commissioning. Accordingly, transferring activities are divided into three main stages, Stage 1: Conducting transfer according to the arrays; Stage 2: Preparing overall transfer agreement; and Stage 3: Completing transfer.

7.3.1. Responsibilities in/after the transferring of transfer array

Exchange of information, opinion during project implementation process (related transfer array), including thoroughly awareness of the project implementation process, gathering all comments and assessments of the Project's concerned stakeholders.

Performing transfer array is a temporary transfer form. Both parties (the agencies assigned by MOT and HPC to be in charge of related array) sign the Minutes of transfer completion, confirming the operation of transfer array within the framework of Line 2A project implementation which has been done, related necessary documents for project implementation already transferred to HPC, the outstanding issues and actions need to be completed by MOT in a specific time, the mechanism to determine the responsibilities for the pending and arising problems.

The Minutes of transfer completion may be prepared after MOT finishes the procedure of acceptance with the contractors in charge of related transfer array.

- Time for signing the Minutes of transfer completion:

HPC is responsible for organizing, mobilizing manpower and resources necessary to carry out the transfer activities related to the transfer array, including the receipt of project documents and information, contribution of comments on the process of implementation, acceptance of the results of the project related to the transfer array. Contribution comments are executed on the basis of Vietnam regulations, applicable international standards and international common practice, satisfying the defined targets.

MOT is responsible for managing the project implementation, organizing, mobilizing manpower and resources necessary to implement transfer activities related to transfer array (providing timely HPC of project documents, results of the project implementation, project implementation program and plan, receiving opinions of HPC, organizing the meeting to clarify and define the way to handle the given requests).

- After the time for signing the Minutes of transfer completion:

HPC is responsible for keeping the received documents, and participating in the preservation of assets, vehicles, equipment, works on the site; preparing conditions for ready management and operation of the transferred arrays immediately after reaching the transfer agreement.

MOT is responsible for organizing and preserving the assets, vehicles, equipment, construction on the site; ready for conducting transfer procedure for HPC.

Transfer procedure shall be carried out by officially signing to the Minutes of transfer array completion made before signing the transfer agreement.

After the completion of the transfer procedure, HPC is responsible for managing transferred contents, including assets, vehicles, equipment, construction on the site; MOT is responsible for the role of Project management agency, the Employer of project implementation and the other agreements indicated in the Minutes of transfer array completion.

7.3.2. *Responsibilities before/afeter the Transfer agreement*

The time for execution of the Transfer agreement: Completing basically the contents and requirements of the transfer (including the transfer procedure of all transfer arrays), only some less important contents are unfinished and/or several issues is not yet to be clarified/agreed; the Transfer agreement shall be signed by the representatives of MOT and HPC, the Minutes of transfer array completion is considered a part of the Transfer agreement.

After completion of the Transfer agreement:

- HPC is responsible for management and operation of all transferred contents including, assets, vehicles, equipment, construction on the site, human resources being transfered; and takes other responsibilities stated in the Transfer Agreement.

- MOT is responsible for the role of Project management agency, the Employer of project implementation dealing with matters and/or implementing unfinished contents within the defined period and undertaking other responsibilities stated in the Transfer agreement.

7.3.3. *Responsibilities before/afeter the Minutes of Transfer finalization*

Transfer finalization: Issues and/or outstandings specified in the Transfer agreement are settled, implementing and unifying responsibility mechanism. The representatives of the both parties sign the Minutes of Transfer finalization.

* *For each transfer array, it is possible to divide into various stages depending on the characteristics of each transfer arrays:*

+ *For Construction and Equipments:*

- (1.) Design stage; bidding invitation (if any);
- (2.) Construcion stage
- (3.) Acceptance and commissioning stage
- (4.) Completion stage (preparation of facility completion documents)
- (5.) Warranty period
- (6.) After the warranty period

+ *Human resources*

- (1.) Recruitment stage
- (2.) Traning stage
- (3.) Rehearsal stage
- (4.) Atger the transfer stage

* *Specific detail responsibility agreement shall be developed in the componet transfer plan.*

7.4. ***To integrate transfer contents and requirements into component transfer plans***

Transfer activity is based on the preparation of component transfer plan. The required contents of such component plan have a relationship with implementation of Line 2A project and operation of Line 2A in future. Therefore, there will be the same requirements among the component transfer plans, but in various levels. It is necessary to unify planning and implementation coordination when performance is carried out.

From the Master plan for transfer, component transfer plans shall be developed, including:

- (1) Human resources transfer plan

- (2) Civil works transfer plan
- (3) Equipment transfer plan
- (4) Operation transfer plan
- (5) Financial transfer plan
- (6) Urban railway exploitation, business transfer plan
- (7) General management transfer plan (safety – quality, materials, general affair)

Table 2: Analysis of the scope of transfer

Transfer plan	Pers o nnel	Organ i zation	Techno logy, Manag e ment	Fin a nce	Safety , Qua lity	Commi s sioning	Materials , spares	Respo n sibility	Implem entatio n mecha nism
Human Resources	C1	C2	C1	C3	C3	C2	C3	C1	C1
Civil works	C3	C3	C1	C2	C1	C2	C3	C2	C3
Equip ment	C2	C3	C1	C2	C1	C1	C3	C2	C3
Operatio n	C2	C2	C1	C3	C3	C1		C1	C2
Finance	C3	C3	C2	C1	C3	C2	C2	C1	C2
Urban railway exploita tion, business	C3	C3	C1	C2	C3	C2	C3	C3	C3
General manage ment (safety - quality, materials general affair)	C2	C2	C1	C3	C2	C2	C2	C3	C3

Note: C3, C2, C1 indicates increasing level of the importance.

Following are descriptions of the relations between component plans and characteristics to be considered in transfer:

7.4.1. Human resources Transfer Plan

- (1) Personnel: Related to job position, capacity, social responsibilities (wages, social insurance, job guarantee, work safety, etc.), training for Line 2A.
- (2) Organization: Organization model for site operation unit, implementation of different activities;

- (3) Technology and management: Technological transfer for Human resources; management system, procedure, manuals, databases, facilities for general human resources management.
- (4) Finance: Costs of training, management, staff before and after transfer.
- (5) Safety, quality: quality of staff training.
- (6) Commissioning: Human resources plays major role in commissioning.
- (7) Material, spare parts: Vehicles, equipment, conditions prepared for human resource management.
- (8) Responsibility: Urban railway human resource transfer related remarkably to responsibilities for the employees before and after transfer.
- (9) Implementation mechanism: the mechanism for transferring urban railway human resource, including mechanisms apply to employees is very important, on one hand, it ensures smoothness of the project implementation and transfer, on the other hand, ensures efficient use of labor, promotes operational efficiency of the company in the operation phase.

7.4.2. *Civil Works Transfer Plan*

- (1) Personnel: Capacity of operation and management personnel.
- (2) Qualified personnel (number, knowledge, skills) to plan, organize, manage, and carry out operation and management of civil works of Line 2A.
- (3) Organization: Organizational model for operation and maintenance of civil works of Line 2A.
- (4) Technology and management: management system, procedures, manuals, databases, material facilities, civil work operation and maintenance plan.
- (5) Finance: Investment and construction costs, civil work operation and maintenance costs; durable period of civil works.
- (6) Safety and quality: civil work records; plans, operation and maintenance alternatives to ensure safety.
- (7) Commissioning: Commissioning of Line 2A satisfies design requirements and safety in the aspect of civil works.
- (8) Material and spare parts: Including materials, and spare parts, vehicles and equipment are prepared for civil work maintenance.
- (9) Responsibilities: Civil work transfer, basically based on results to be obtained. Management and operation responsibilities of civil work will be transferred, including right of using and operating the spaces of urban railway civil works. Responsibilities related to the quality of civil works will be further defined in the operation process based on applicable standards and regulations.
- (10) Implementation mechanism: Several mechanisms need to be studied, applied to promote the transfer and build up the basis for determining responsibility after transfer.

7.4.3. *Equipment Transfer Plan*

- (1) Personnel: Qualified personnel (number, knowledge, skills) to plan, organize, manage, and carry out equipment operation and maintenance of Line 2A (including urban railway systems, station facility and equipment and other equipment invested in Line 2A project).
- (2) Organization: Organizational model for operation and maintenance of equipment.
- (3) Technology and management: management systems, procedures, manuals, databases, facilities, (various) equipment operation and maintenance plan.

- (4) Finance: Investment and purchasing costs, equipment operation and maintenance costs, durable period of equipment.
- (5) Safety and quality: Equipment records; plans, operation alternatives, maintenance to ensure safety.
- (6) Commissioning: Commissioning of Line 2A satisfies design requirements and safety in the aspect of equipment.
- (7) Material and spare parts: Including materials, and spare parts, vehicles and equipment are prepared for equipment maintenance.
- (8) Responsibilities: equipment transfer, basically based on results to be obtained. Responsibilities related to the quality of equipment will be further defined in the operation process based on applicable standards and regulations. The records of handing-over equipment are an important content of equipment handover.
- (9) Implementation mechanism: Several mechanisms need to be studied, applied to promote the transfer and build up the basis for determining responsibility after transfer, creating the basis for equipment operation management.

7.4.4. *Operation Transfer Plan*

- (1) Personnel: Qualified personnel (number, knowledge, skills) to plan, organize, manage, and carry out safe operation of Line 2A.
- (2) Organization: Organizational model for personnel to ensure safe operation and self-control.
- (3) Technology and management: management system, procedures, manuals, databases, facilities, operation plan of Line 2A, safety plan and other related documents to ensure reliable and safe operation.
- (4) Finance: Financial plan in operation.
- (5) Safety and quality: Procedures, manuals, operation plans to ensure safety and quality
- (6) Commissioning: Determining the capacity and suitability of project implementation results in general; training results, organization models, management processes in particular; plans, results, commissioning records.
- (7) Material and spare parts: Including materials, and spare parts, vehicles and equipment are prepared for operation.
- (8) Responsibilities: Operation transfer is the most important and complex content of transfer. It relates to other transfer items, including civil works, equipment and human resource. Determination of responsibilities is based on the identification and uniform of standards to be applied; method for preparation of documents, plans, control process, based on controlling and minimizing risks. The handover basically follows the principles of "existing status handover", specific responsibility shall be determined depending on situations on the basis of prepared transfer documents and relevant regulations.
- (9) Implementation mechanism: Regulations on urban railway operation in Vietnam are currently not sufficient. Therefore, it is necessary to propose some implementation mechanisms to meet transfer requirements and initial operation preparation.

7.4.5. *Financial Transfer Plan*

- (1) Personnel: Qualified personnel (number, knowledge, skills) to plan, organize, manage financial activities of Line 2A.
- (2) Organization: Organizational model for management of costs, revenues, accounting profession for line operation;

- (3) Technology and management: management systems, procedures, manuals, databases, facilities, financial plan and accounting profession for Line 2A.
- (4) Finance: Cost of project implementation, project operation costs (of the operation and maintenance of buildings, equipment, personnel costs, sales costs, management costs and other costs).
- (5) Safety and quality: costs for safety and quality assurance.
- (6) Commissioning: Commissioning costs.
- (7) Materials and spare parts: cost of materials, spare parts, vehicles and reserved equipment.
- (8) Responsibilities: Determination of financial responsibility is an important content of transfer including accuracy of the financial evaluation, basis for determining responsibility after transfer.
- (9) Implementation mechanism: Financial transfer shall include financial responsibilities for project implementation costs and responsibilities for personnel before and after the transfer and other financial responsibilities. Currently, financial policy applies to the on-going urban railway project is being completed, therefore, for the transfer, several financing mechanisms will need to be clarified to facilitate the transfer process also as the launch process of Line 2A by the Company.

7.4.6. Urban railway Exploitation, Business Transfer Plan

- (1) Personnel: Qualified Personnel (number, knowledge, skills) to plan, organize, manage, and carry out operation and maintenance of Line 2A.
- (2) Organization: Organization model for urban railway business operation of Line 2A (station, on train, in office, including types of urban railway business operation).
- (3) Technology and management: management systems, procedures, manuals, databases, facilities, exploitation and business plan.
- (4) Finance: costs for operation preparation; financial plan for business plans.
- (5) Safety and quality: procedures, databases, safety and quality guarantee plan in operation of Line 2A.
- (6) Commissioning: Plan and preparation (related to exploitation and business activities of Line 2A) for commissioning of Line 2A.
- (7) Material and spare parts: Including materials, and spare parts, vehicles and equipment are prepared for business operation of Line 2A.
- (8) Responsibilities: responsibilities arisen in the preparation stage for operating Line 2A.
- (9) Implementation mechanism: Related to the preparation activities, business prior to the official transfer of Line 2A and urban railway business, the type of condition, several implementation mechanisms may need to be studied to ensure overall benefits of the Line 2A project.

7.4.7. Overall Management of Line 2A project Transfer Plan (Safety-quality, Materials, General Affairs)

- (1) Personnel: qualified personnel to manage and carry out activities to ensure safety and quality regarding management of material and general affairs for Line 2A.
- (2) Organization: Organization model for management and execution of safety, materials and general affairs for Line 2A.
- (3) Technology and management: management system, procedures, manuals, databases, facilities, plan of management and execution of safety, materials and general affairs for Line 2A.

- (4) Finance: Costs for preparing and satisfying requirements of management and execution of safety, materials and general affairs for Line 2A.
- (5) Safety and quality: procedures, manuals, database, safety and quality assurance plan in general; safety and quality assurance in material and administrative activities.
- (6) Commissioning: Plan and preparation (regarding safety, materials and general affairs) for commissioning of Line 2A.
- (7) Material and spare parts: preparation of materials and spare parts for safety management, general affair management for operation of Line 2A in the initial stage.
- (8) Responsibilities: Basically, handover shall be applied in principle of existing status handover; the parties shall unify safety requirements/standards in commissioning and operation as a basis to coordinate activities of commissioning, acceptance and determination of responsibility after transfer.
- (9) Implementation mechanism: some mechanisms may need to be studied and applied to promote transfer of safety, materials and general affair; prepare conditions for operation and determine responsibility after transfer (regarding safety, materials and general affairs of Line 2A).

7.5. *List of Checking Items for Transfer*

Line 2A project transfer is mainly conducted based on consideration and transfer of project documents which are gathered systematically and comprehensively, reflecting the project implementation process (including conditions for implementation of the project, instructions of authority level, the coordination with the stakeholders) to meet the requirements of a urban railway project and regulations on quality management, cost management, safety management, environmental management, liability management, human resource management (project implementation); preparation for exploitation of projects, including the processes, operation and maintenance plan, human resources, safety and business (for project operation).

The list of checking items includes overall items, activities and requirements of the transfer objects analyzed, evaluated and classified appropriately as the basis for the development of the transfer plan; the list of checking items will be verified and certified among the concerned parties as an important part of the transfer.

The list of cheking items is the overall components transfer plan and the detailed checking items is prepared in the component transfer plan, including checking contents, methods and requirements.

Following are general basic requirements:

7.5.1. *Quality Determination*

Verification of quality in transfer activities is to provide database for the following purposes:

- (1.) Promptly repair damage; appropriate solution for detection of the noncompliance.
- (2.) Operation of the project.
- (3.) Identify the responsibilities of the parties before/after transfer.

Verification of quality in compliance with Vietnam regulations, applicable standards and common international practice, is carried out by clarifying and uniforming standards and requirements for quality management, plans and implementation steps.

Discuss on steps, the requirements in urban railway project management will be carried out during transfer of Line 2A project implementation in order to obtain early understanding and consensus on the implementation of the project, well prepared for checking for official transfer procedure.

The verification of the quality, transfer of quality projects are integrated into the transfer component plans.

7.5.2. *Safety Determination*

“Safety requirement” is the most important issue of “Quality” requirement. To ensure safety of the project in the commissioning phase is a particularly important requirement. Therefore, the parties will have to consider in close collaboration, especially safety work.

Safety verification shall be on the basis of safety guarantee for the systems, including consideration of the safety of each sub-system, works, work items, facilities, equipment, etc. Consideration methods, safety assessment for the system will be based on the regulations of Vietnam, international practices, including standards EN 50126.

Safety verification result is a basis for preparation and implementation of operation and maintenance plan and planning and operating activities applied to Line 2A.

The stakeholders can hire qualified consultants to support the safety verification.

Safety verification and transfer of Line 2A project shall be done through the component transfer plans combined and connected in safety transfer plan (as described in the safety, materials, general affair transfer plan).

The contents of safety transfer will be built comprehensively on the safety and quality transfer plan and will be planned and implemented plans in other component plans at the same time.

7.5.3. *Line 2A project Commissioning*

Entire line commissioning is the most important stage in implementation of Line 2A Project, including provision of initial results:

- (1.) All items of the project, the related technical documents;
- (2.) Operation and maintenance documents
- (3.) Trained human resources
- (4.) Defined organizational model
- (5.) Commissioning plan and the operation plan, initial operation stage
- (6.) Facilities, equipment, materials, fuel, spare parts for commissioning and initial operation stage.

Commissioning results provide information and important database, including:

- (1.) Compliance with design: compatibility of the design task.
- (2.) Suitability of construction compared to the design;
- (3.) Safety
- (4.) Integrated system and performance.
- (5.) Personal capacity
- (6.) Organizational capacity
- (7.) Compatibility of the application process on operation of Line 2A.
- (8.) Compatibility of the applicable plan on operation of Line 2A.
- (9.) Responsibilities of the parties related to the project implementation
- (10.) Related issues.

Therefore, commissioning stage is both opportunity and an important basis for assessing and making decisions on transfer. Both parties need to agree on the coordination level and manner in commissioning, including the following main contents:

- (1.) Commissioning plan;
- (2.) Monitoring plan, commissioning documentation;
- (3.) Personnel coordination and control method;
- (4.) Involvement of the third party;
- (5.) Method of solving the problem;
- (6.) Method of evaluation and certification, not verifying each item.

The transfer contents of commissioning shall be built on the overall transfer plan; at the same time, shall be planned and implemented specifically in other component plans.

7.5.4. Acceptance, Certification of Compliance

Acceptance and certification of compliance are important activities during the implementation and management of the project; and important basis to certify quality, safety and reliability of the project. As a result, concerned parties should discuss and negotiate on the acceptance and certification of compliance.

HPC needs to receive and update information during the implementation of Line 2A, including the following main documents.

- (1.) Plan of project implementation: including procedures of project implementation, results of implementation, plan of operation progress, alternatives of implementation;
- (2.) Applicable standards (for each project item, each period)
- (3.) Component plans: plans to design/ construct each item, monitoring plans, quality plans, safety plans, etc.
- (4.) Procedures, plans to accept, the method to accept the works.
- (5.) Participation of a third party;
- (6.) Procedures of documents making;
- (7.) Report on issues;
- (8.) Documents of acceptance, certifying the conformity.

On the basis of receiving and approaching early to above information, HPC shall timely provide necessary guidances during the implementation of the project, participating into the acceptance progress, preparation of important basis to be ready for getting consensus on the Transfer agreement.

The transfer contents in terms of acceptance, certification of conformity shall be built on the overall quality transfer plan; at the same time, shall be planned and implemented specifically in other component plans.

7.5.5. Warranty after the Ttransfer agreement

After the Transfer agreement, HPC shall play the role of Project owner of the Project to execute right and work out requirements for contractors under contracts signed with MOT or with subordinate organizations of MOT during the implementation of the project.

MOT is responsible for assisting, participating in evaluation and acceptance for works under the warranty liability of contractors. Any responsibility arisen during the implementation of the project defined even after the agreement shall belong to parties ever taking part in the project in accordance with regulations and related agreements (or contracts).

7.6. Resources for transferring

The transfer shall mobilize a huge amount of human resources and other resources, the basic principles for mobilizing resources are identified as following:

- (1.) Personnel of mobilizing organizations shall be under the management and responsibilities of their respective monitoring organizations; including wages, social costs, servicing costs, other related costs.
- (2.) Any activities following regulations or customs in Vietnam which belong to the project (Construction Investment) shall be taken into account of project implementation costs by MOT.
- (3.) Costs for printing, copy of Project's documents to provide to HPC shall be mobilized, accounted in the project implementation costs by MOT.
- (4.) Costs to hire consultants to check, supervise and evaluate the progress and results of the project implementation following requirements of HPC shall be under HPC's responsibilities (not including activities of above Item 2).

** Plans of resources and allocation of responsibilities for transfer implementation shall be clarified at component transfer plans.*

7.7. Coordination in organization and planning of both Parties

The transfer shall request close coordination between two parties. Pursuant to discussion about objects of transfer and methodology of the transfer, two parties shall develop alternatives to organize, as well as plans to implement the transfer. All alternatives of organization and plans of implementation of two parties shall need to be unified and harmonized to optimize the transferring resources, enhancing the effectiveness of the transfer.

- Alternative of organization: developing counterpart structures between two parties.

- Implementation plan: jointly developing on the basis of implementation plan of Line 2A, to be developed by each part/transfer array, ensuring the feasibility and efficiency (Through the development and implementation of component transfer plans).

8. Component Transfer Plans

8.1. Urban Railway Human resources Transfer

8.1.1. Overview of Line 2A project regarding Human resources

(1) Training demand

Based on Training schedule V13 of the Contractor (Jan. 22, 2014) in the meeting on Feb. 14, 2014 in MOT, number of trainees is 643 staff, including:

- Staff to be trained in China: 194 people, from Apr. 1, 2014 to Jun 20, 2015
- Staff to be trained in Vietnam: 449 people, from Jun 1, 2015 to Aug 8, 2015.

(2) Coordination between VNRA and MRB

On Nov. 14, 2013, VNRA, MRB and Consultants jointed the meeting and unified the organization models:

- Organization model of Hanoi Metro Company's Headquarter (in accordance with the results already submitted to HPC):
- Organization model of Site Operation Units (Line 2A).

8.1.2. Scope of Human resources transfer

The scope of Human resources transfer includes transferring of the trained staff, staffing usage and development plan of Line 2A project; Human resources management system; related programs and projects; facilities for Human resources management and development of Line 2A project.

8.1.3. Human resources transfer principles

HPC (through the subordinate agencies) shall coordinate with MOT (including subordinate departments) to select, train and evaluate the human resources to be trained and developed in the Line 2A project; supply and mobilize human resource and facilities for implementation of Human resources development for Line 2A.

Organization model of site operation units is compatible with management model of Hanoi Metro Company instructed by HPC, agreed between VNRA and MRB (Minutes of Meeting on Nov. 14, 2013), Human resources training for Line 2A shall be oriented in order to meet the long term effectiveness of the Project.

Simultaneously, both sides shall closely work together to unify the staff recruitment options of the site operation units, ensure that the personnel to be recruited and trained shall be utilized in the long term. The rights of the personnel shall be considered and satisfied properly.

Line 2A recruitment and training mechanism and policy shall be unified for long term benefits of Line 2A project and suitable with the common orientation of HPC on urban railway Human resources development.

Human resources and urban railway Human resources management and development contents received by HPC shall be made and developed to be suitable with urban railway system development strategy and plan, and conditions of HPC.

8.1.4. Master schedule, milestones of Human resources transfer

Human resources transfer is considered to be started when the Master plan for Line 2A transfer is approved. Main contents and time-limit are as follows:

No.	Transfer contents	Purpose	Requirement	Time-limit
1	Human resources training plan	Make overall Human resources plan for Line 2A. As the basis for coordination between MOT and HPC	Training plan is approved; documents are updated.	Suitable with the overall schedule of Line 2A project
2	Organization model of the site operation unit	Integrate Line 2A project with Hanoi urban railway system program; As an important basis for Human resources training plan of Line 2A	Match with general organization modal of Hanoi Metro Company	Already agree with the model; coordinate with setting up training plan.
3	Labor usage mechanism and policies	Consist with urban railway labour usage and development policies before and after transfer process	Clarify requirements after transfer	Before recruiting staff for the Project

No.	Transfer contents	Purpose	Requirement	Time-limit
4	The results of training, evaluation of Human resources	The basis for using of Human resources who have been trained, and developing Line 2A operation Human resources plan in next stage.	Staff certified by MOT to complete training program; certified accordingly.	Sign the Minutes of completion of Human resources transfer.
5	Information, and agreement with training agencies	The basis for HPC to continue reviewing and coordinating in the next stage.	Satisfy the benefits of Line 2A project.	Sign the Minutes of completion of Human resources transfer.
6	The program, curriculum, training materials	One of the bases to confirm the capacity of the trained personnel. Continue using for Human resources development process of the next stage.		Right after MOT (VNRA) is available.
7	Agencies for training and developing urban railway Human resources	Continue serving for training and developing Human resources for Hanoi urban railway system	Provide the existing condition with operation documents and alternative.	Sign the Minutes of completion of Human resources transfer.
8	Staffing plan of Line 2A	Long-term Human resources development for Line 2A	Human resources evaluation and plan of Line 2A	Before overall Human resources transfer of Line 2A.
9	Overall Human resources transfer – Minutes of completion of Human resources transfer	Complete the above transfer procedures.	Basically complete transfer of the contents. Certify responsibilities and accountability mechanisms after transfer.	At least one week Before official transfer of Line 2A.

8.1.5. Outline of Human resources transfer plan

(I) OUTLINE

- (1) General introduction on Line 2A Project regarding urban railway Human resources
- (2) Human resources plan of Line 2A
- (3) Definitions and terms
- (4) Purpose of Human resources transfer
- (5) Scope of Human resources transfer

- (6) Related regulation
(General regulations necessary to refer in urban railway Human resources transfer)
 - (7) Basic requirements of the Human resources transfer
 - (8) Preparation of HPC, role of the TA Project
 - (9) Major issues, priorities of MOT - HPC
 - (10) Legal basis for transfer
 - (11) Issues to be settled
- (II) TRANSFER PLAN FOR HUMAN RESOURCES**
- (1) Check List for Human resources transfer
(Items of Human resources transfer; related documents to be considered and agreed in the transferring)
 - (2) Approach
 - 1) *Transfer contents*
 - i. Recruitment/enrollment stage
 - ii. China training stage
 - iii. Vietnam training stage
 - iv. Commissioning stage
 - v. Overall transfer
 - 2) *Requirements – Coordination mechanism*
 - i. Quality assurance
 - ii. Safety assurance
 - iii. Responsibility determination
 - (3) Schedule, steps to be carried out
 - (4) Alternatives, implementation methods
 - (5) Mechanisms to be studied
 - (6) Adjustment activities between TA project and progress of Line 2A project
 - (7) Necessary resources Plan for transferring
- (III) ORGANIZATION FOR IMPLEMENTATION**
- (1) Organization alternative for implementation
 - (2) Coordination between MOT/VNRA-HPC/MRB

8.2. Civil works transfer

8.2.1. Scope of Civil works transfer

Transfer is carried out for the whole of civil works, railway protection area and railway right of way under the Line 2A project; completion documents of civil works, planning documents; documents of land use right; process, plan and documents of facilities for operation and maintenance of the Line 2A project.

8.2.2. Civil works transfer principles

Overall and existing transfer is carried out for Civil works includes transferring of management, operation and maintenance of civil works.

Sufficient database is determined (regarding Civil works to be transferred) for preparation of operation plan and operation of Line 2A.

It is required to comply with Vietnam’s regulation, applicable standard and international practices on management of construction investment project, including quality management, cost management and safety management.

Review and preparation of civil works documents shall be referred, satisfying overall purpose of Line 2A project to be safe urban railway operation and designed capacity achievement.

8.2.3. *Master Schedule, Milestone of Civil works transfer*

Civil works transfer is considered to be started when the Master plan for Line 2A transfer is approved. Following are the milestones of the transfer:

No.	Transfer contents	Purpose	Requirement	Schedule
1	Project preparation stage	General approach to the Project	Legal documents related to the investment guidelines, investment preparation stage, feasibility study, standard framework, basic design, the contract documents etc.	After reaching common consensus on the Master plan for transfer
2	Design stage	Approach to the design documents	Design documents; including planning, contract documents, survey documents, technical design, construction design, and agreements etc.	Provision of documents according to schedule. Depending on type of documents and packages
3	Construction and acceptance stage	Work items completion Records	Plans, inspection methods, quality control of construction works, completion drawings, etc.	Compliance with the schedule of package and work items.
4	Works completion stage	Receipt of total materials of the project’s civil works	Commissioning plan; Commissioning documents; certificates of quality compliance, safety certification system etc.	When documents are available.

8.2.4. *Outline of Civil works transfer Plan*

(I) **OUTLINE**

- (1) Overview of Line 2A project related to construction
- (2) Schedule of Line 2A project
- (3) Definitions and terms
- (4) Purpose of Civil works transfer
 - To meet the policy and purpose of Line 2A transfer.
 - To provide HPC/the concerned department with the database to make timely maintenance and repair plan for the works of Line 2A before and during operation; minimize risks and increase operation effectiveness.

- To provide basis for inspection, analysis and determining responsibility for the quality of works, incidents and accidents during operation and maintenance of Line 2A by HPC (the concerned departments).
 - To provide basis for improvement of work items under the Line 2A project or new construction of Line 2A or connection with Line 2A.
 - To transfer responsibility, management right, ownership, and operation of civil works, land planning, the extent of protection area and right of way of urban railway for Line 2A.
- (5) Scope of Civil work transfer
- (6) Related regulations

The Employer, *defined in the Law on Construction*, shall be responsible for receiving the maintenance processes designed by contractors and contractor to provide equipment installed in the works; appraise and approve such processes before the acceptance for putting the work into use, unless otherwise provided by law (Decree No. 114/2010).

(Article 80, Law on Construction 16, 2003)

[1]The acceptance of construction works must comply with the following regulations:

a/ Regulations on management of construction works quality;

b/ Acceptance shall be done for each work, each part, each stage and each work item and acceptance for putting works into use. Particularly for hidden parts of works, the acceptance and construction completion drawings must be made before the next jobs are carried out;

c/ Acceptance shall be done only when the accepting objects are completed and the dossiers as prescribed are completed;

d/ Works shall be put into acceptance for use only when they satisfy the design requirements, ensure the quality and achieve the prescribed standards.

[2]The construction works transfer must comply with the following regulations:

a/ Satisfying the requirements on principles, contents and order for handing over completed construction works for being put into use according to the provisions of construction legislation;

b/ Ensuring safety in the exploitation when the works are put into use.

[3]The construction contractors shall have to finish the construction, clear the construction sites, make construction completion drawings and prepare documents for the acceptance and handover of the works.

[4]The construction investors shall have to organize the acceptance and reception of works. Persons taking part in the acceptance and handover of works shall bear personal responsibility for products certified by them during construction and handover of the works.

(Article 81, Law on Construction 16, 2003).

[1] The construction contractors shall have to make payment dossiers, finalization of work volumes have been already performed. The construction investors shall have to make payment to the contractors according to the acceptance volumes.

[2] Persons responsible for payment and/or settlement shall be held responsible by law for their jobs and shall have to make compensations for damage incurred due to their late or improper payment and settlement.

- (7) Basic requirements of Civil work transfer
- (8) Preparation of HPC and role of TA Project
- (9) Important issues and priorities of MOT/ HPC
- (10) Legal basic for Civil works transfer
(Instructions of the competent agencies related to Civil works transfer)
- (11) Issues necessary to be clarified

(II) TRANSFER PLAN FOR CIVIL WORKS

- (1) Check List for Civil works transfer
(Items of Civil works transfer; related documents to be considered and agreed in the transferring)
- (2) Approach
 - 1) *Transfer contents*
 - i. Civil works
 - ii. Operation and maintenance technology of Civil works
 - iii. Plan, space, right of use and operation
 - 2) *Requirements – Coordination mechanism*
 - i. Quality assurance
 - ii. Safety assurance
 - iii. Responsibility determination
- (3) Schedule, steps to be carried out
- (4) Alternatives, implementation methods
- (5) Mechanisms to be studied
- (6) Necessary resources Plan for transferring

(III) ORGANIZATION FOR IMPLEMENTATION

- (1) Organization Alternative for Implementation
- (2) Coordination between MoT/VNRA-HPC/MRB

8.3. Equipment Transfer

8.3.1. Scope of Equipment Transfer

Transfer is carried out for all vehicles, equipment, and urban railway systems of Line 2A Project includes documents relating to the design, testing, commissioning, operation, and maintenance, etc; copyrights, warranty right, the right to be updated, right to manufacture, right to be adjusted, related trade privileges, supplies and spare parts, and documents of facilities for operation and maintenance.

8.3.2. *Equipment Transferring Principles*

Overall and existing transfer is carried out for equipment includes transferring of management and operation of the equipment.

Sufficient database is determined (regarding equipment to be transferred) for preparation of operation plan and operation of Line 2A.

It is required to comply with Vietnam’s regulation, applicable standard and international practices on management of construction investment project, including quality management, cost management and safety management etc.

Review and preparation of equipment documents shall be referred, satisfying overall purpose of Line 2A project to be safe urban railway operation and designed capacity achievement

8.3.3. *Master Schedule, Milestones for Equipment transfer*

Equipment transfer is considered to be started when the Master plan for Line 2A transfer is approved. Following are the milestones of the transfer:

No.	Transfer contents	Purpose	Requirement	Scheduled
1	Project preparation stage	General approach for the Project	Investment scale, standard framework, basic design.	After reaching common consensus on the Master plan for transfer
2	Design stage	Approach to the design documents	Contract documents, design documents;	Provision of documents based on schedule. Depending on type of documents, packages and equipment items.
3	Manufacturing, instration and acceptance stage	Equipment documents	Acceptance test plan, acceptance test documents on operation and maintenance, completion drawing etc.	Compliance with the schedule of package and equipment items.
4	Project completion stage	Receive total equipment materials of the Project	Commissioning plan; Commissioning documents; certificates of quality compliance, safety certification system safety etc.	When documents are available.

8.3.4. *Outline of Equipment Transfer Plan*

(I) **OUTLINE**

- (1) Overview of Line 2A project related to equipment

- (2) Schedule of Line 2A project
- (3) Definitions and terms
- (4) Purpose of equipment transfer
 - To meet the policy and purpose of Line 2A transfer.
 - To provide HPC/ the concerned departments with the database to make timely maintenance and repair plan for the equipment of Line 2A before and during operation; minimize risks and increase operation effectiveness.
 - To provide basis for inspection, analysis and determining responsibility for equipment quality, incidents and accidents during operation and maintenance of Line 2A by HPC (the concerned departments).
 - To provide basis for improvement of equipment items under the Line 2A project or new investment in the equipment category of Line 2A or connection with Line 2A.
 - To transfer responsibilities, management right, ownership, operation of equipment; including copyrights, warranty right, right to be updated, right to manufacture, right to be adjusted, related trade privileges, supplies and spare parts.
- (5) Scope of equipment transfer
- (6) Related regulations
- (7) Basic requirements of Equipment transfer
- (8) Preparation of HPC and role of TA Project
- (9) Important issues and priorities of MOT/HPC
- (10) Legal basis for Equipment transfer
(Instructions of the competent agencies related to Equipment transfer)
- (11) Issues necessary to be clarified

(II) PLAN ON EQUIPMENT TRANSFER

- (1) Check List for Equipment transfer
(Items of equipment transfer; related documents to be considered and agreed in the transferring)
- (2) Approach
 - 1) *Transfer contents*
 - iv. Rolling stock
 - v. Signal Telecommunication
 - vi. Track system
 - vii. Power supply
 - viii. Station facility; AFC system

* Operation and maintenance technology, including facilities and equipment for operation and maintenance; spare parts system;
 - 2) *Requirement – coordination mechanism*
 - i. Quality assurance
 - ii. Safety assurance
 - iii. Responsibility determination
- (3) Schedule, steps to be carried out

- (4) Alternatives, implementation methods
- (5) Mechanisms to be studied
- (6) Necessary resources Plan for transferring

(III) ORGANIZATION FOR IMPLEMENTATION

- (1) Organization Alternative for Implementation
- (2) Coordination between MoT/VNRA-HPC/MRB

8.4. Operation Transfer

8.5. Financial Transfer

8.6. Urban railway Exploitation, Business Transfer

8.7. Overall Management of Line 2A project Transfer (Safety-Quality, Materials, General Affairs)

9. Ensurance Alternatives

9.1. Adjustment between the TA project and the Progress of Line 2A Project

9.1.1. Purposes of the Adjustment between the TA project and the Progress of Line 2A Project

- (1) To satisfy conditions on reception capacity of Line 2A;
- (2) To ensure the feasibility and quality of Line 2A transfer;
- (3) To meet long-term effectiveness of Line 2A (after transfer);
- (4) To utilize effectively of transfer resources;
- (5) To adjust objectives, to amend implementation progress reasonably.

9.1.2. Principles of Adjustment between the TA project and the Progress of Line 2A Project

- (1) Results and plan of progress of Line 2A as basis to make plan of transfer progress, plan of progress of developing Hanoi Metro Company's capacity;
- (2) Organization model and management system of Hanoi Metro Company as basis to receive Line 2A, including Line 2A construction implementation plan, transfer plan.
- (3) The reception and operation of Line 2A are initial objective, and is an important basis to evaluate results of TA project implementation.

9.1.3. Methods of Adjustment between the TA project and the Progress of Line 2A Project

(1) Adjustment of TA project

- Adjustment of milestones: Milestone of Company establishment, milestone of capacity development for the Company (satisfying requirements of Line 2A transfer and plan to implement Line 2A project);
- Adjustment of scope of tasks, approaching methods: via early promotion of several contents receiving from Line 2A project;

(2) Adjustment of plan to implement Line 2A project

- Adjust the progress and duration of implementation for several tasks in Line 2A project, to comply with results and milestones of TA project implementation;

- Adjust methods and contents to implement several tasks of Line 2A project, to comply with plan and results of implementing TA project: company organization model, company management system, governmental regulations about urban railway, etc.

9.2. Initial proposals, List of Tentative Mechanisms

9.2.1. Initial Proposals

- (1) MOT/VNRA shall early develop the organization alternative and mobilize personnel for implementing the transfer;
- (2) Hanoi Metro Company are permitted to operate (urban railway is not operated yet) before receiving Line 2A and shall be certified as satisfying conditions for providing urban railway business.

9.2.2. Tentative Mechanisms to be Proposed

- (1) Position and conditions of the Company before operating Line 2A;
- (2) Recruit/enroll, manage personnel by the Company before operating Line 2A;
- (3) Pay salary for personnel working in Line 2A, to satisfy an objective of attracting and encouraging skilful and well-educated personnel in operation and maintenance of urban railway;
- (4) License to drivers, Operation control center dispatchers, information/signaling staff at stations during trial and official operation of Line 2A;
- (5) Clarifying investment cost of Line 2A, defining responsibilities, scope and methods of repayment for Line 2A;
- (6) Conditions for Hanoi metro company to put Line 2A into operation;
- (7) Hire consultants, experts for supporting the transfer;
- (8) Hire consultants, experts for supporting the Line 2A operation at initial stage;
- (9) Invest and develop IT system for Hanoi Metro Company
- (10) Resources to develop quality management system for the company
- (11) Fare policy in initial stage of operating Line 2A
- (12) Method of task assignment for the Company during initial operation of Line 2A

9.3. Responsibilities of Relevant Organizations

- (1) MOT:
 - Chair the Transferring of Line 2A project;
 - Provide advices on conditions of alternatives to put Line 2A into operation;
 - Project management cost, transfer cost are under budget of MOT, VNRA, Dept. of Organization, Dept of Finance, Dept of Planning and Investment, Ministry Office, Administrations, Departments and Insitutions under MOT;
 - Chair the handling of arisen problems after transferring, which relate to Line 2A project.
- (2) HPC:
 - Chair the Receiving of Line 2A project.
 - Repayment of government loan for equipment procurement;
 - Organize and mobilize resources to operate Line 2A after receiving.
 - Chair the handling of arisen problems after transferring, which relate to Line 2a project and operation and management of Line 2A after transferring.
- (3) MOF:
 - Consult, evaluate (for the Government) financial scheme applicable for the transfer, Master plan for transfer.

- Evaluate on financial transfer of Line 2A, representing the Government sign re-lending agreement with HPC.
- Chair and manage repayment (loan for Line 2A project) as regulations.
- (4) MPI: Consult and evaluate (for the Government) about related central budget plan, other relevant mechanism.
- (5) Government office: Coordinate with Ministries, HPC, advising the Government for approval, for comments on the transfer contents and financial mechanism.

9.4. Resources Mobilization Schedule

9.4.1. For MOT side

- 1) Personnel: VNRA, Dept of Organization, Ministry Office
- 2) Finance: Line 2A project, Ministry's budget to implement transfer plan
- 3) Facilities: existing facilities, equipment shall be mobilized from relevant organizations.

9.4.2. For HPC side

- 1) Personnel: HPC Office, DOHA, HAPI, DOF, DONRE, DOT and MRB, personnel additionally mobilized for Hanoi Metro Company;
- 2) Finance: TA project, consultants, on-going projects, city's budget to implement transfer plan
- 3) Facilities: existing facilities, equipment shall be mobilized from relevant organizations.

10. ORGANIZATION ALTERNATIVE FOR LINE 2A PROJECT TRANSFER

10.1. Organization Alternative from HPC

10.1.1. General Organization Alternative

- (1) Receiving party: HPC
- (2) Standing agency: MRB
- (3) General consultation: JCC
- (4) Coordinated agencies: HAPI, DOHA, DOF, DOT, HAUPA, DONRE, City Public Security, HPC Office; the concerned People's Committee of District (Ha Dong, Dong Da, Thanh Xuan); and relevant authorities.
- (5) Management and operation company: Hanoi Metro Company.

10.1.2. Principles of Organization

- (1) *Master plan for transfer:*
 - Hanoi Metro Company (to be established) shall be the agency to receive directly;
 - MRB is the standing agency to appraise and advise. Some departments shall coordinate to appraise and advise.
- (2) *Component transfer plan, transfer arrays:*
 - Depending on the component transfer plans, transfer arrays, HPC shall assign departments to perform their roles of advisory and appraisal bodies.
 - Directly receiving agency (receiving implementation) shall be responsible for proposing and directly implementing component transfer plans.

- Standing Agency: MRB shall be responsible for coordinating, checking, monitoring, reporting the results and important contents to HPC.
- Appraisal and advising agency shall assign staff to participate in the transfer process; appraisal results of transfer, and advising to HPC on decisions under HPC authority.

Figure1: Implementation of transfer segment

Establishment of company	
▼	
Human resources transfer MRB is direct and standing agency; DOHA advises and appraises	Human resources transfer The Company is direct agency, MRB is standing agency; DOHA advises and appraises
Civil works transfer MRB is direct and standing agency; DONRE and DOF advises and appraises	Civil works transfer The Company is direct agency, MRB is standing agency; DONRE and DOF advise and appraise
Equipment transfer MRB is direct and standing agency; DOF advises and appraises	Equipment transfer The Company is direct agency, MRB is standing agency and DOF advises and appraises
Operation transfer MRB is direct and standing agency	Operation transfer The Company is direct agency; MRB is standing agency, advises and appraises
Urban railway exploitation, business transfer MRB is direct and standing agency	Urban railway exploitation, business transfer The Company is direct agency; MRB is standing agency, advises and appraises
Safety-quality, materials and general affair transfer MRB is direct and standing agency	Safety-quality, materials and general affair transfer The Company is direct agency; MRB is standing agency, advises and appraises
▲	
June 2014	

10.1.3. Procedures of Transferring

No.	Transfer sequence	Signed by	Remarks
1	Initial the Minutes of transfer (transfer arrays)	Direct agencies	(MOT position, HPC not yet signs)
2	Transfer procedure (sign the Minutes of transfer)	MOT, HPC	Direct agencies already signs; Standing agency and appraisal agency sign together.
3	Transfer agreement	MOT, HPC	After completion of transfer procedure (of transfer arrays)
4	Minutes of transfer finalization	MOT, HPC	Matters and/or outstanding issues defined in Transfer agreement already solved and implemented or united of responsibility mechanism.

10.2. Organization Alternative from HPC

10.3. Coordination Mechanism between MOT/VNRA and HPC/MRB

10.3.1. Coordination between MOT and HPC

MOT and HPC shall conduct coordination as follows:

- (1) Agreement of the Master plan for transfer.
- (2) Report to the Government on transfer policy
- (3) Coordinate in management and instruction of implement of the Master plan for transfer;
- (4) Instruct to prepare and approval of program of Line 2A Project transfer
- (5) Approve and instruct implementation of the component transfer plans;
- (6) Along the instruct, study and propose mechanisms applied to transfer
- (7) Along the instruct, study proposals of the subordinate units in charge of the mission of transfer implementation.
- (8) Sign the Minutes of transfer completion to confirm completion of each transfer array.
- (9) Sign the Transfer agreement
- (10) Sign the Minutes of transfer finalization

10.3.2. Coordination between VNRA and MRB/Hanoi Metro Company

VNRA and MRB/Hanoi Metro Company shall coordinate as follows:

- (1) Coordinate to implement the Master plan for transfer
- (2) Study and propose implementation mechanisms
- (3) Propose solutions for difficulties.
- (4) Provide solutions and measures of risk management
- (5) Advise integrally programs and plans of implementation for Line 2A project with the related programs and plans of HPC
- (6) Regularly and directly coordinate transfer plans and activities
- (7) Advise solutions to complete transfer procedure

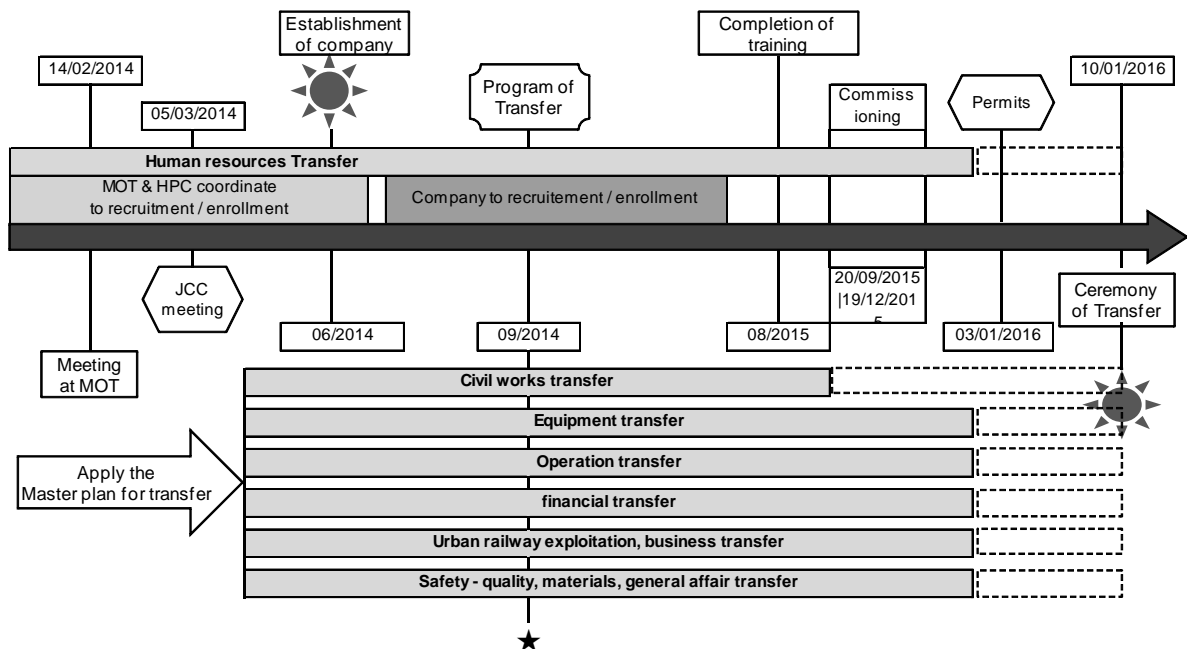
11. ACTION PLAN FOR LINE 2A PROJECT TRANSFER

11.1. Master schedule for the Transfer

Master schedule for the transfer should match the overall plan of Line 2A project. Some of proposed milestones are as following:

- (1) Minutes on the completion of civil works transfer: After 2 weeks since accepting the civil works
- (2) Minutes on completion of transferring personnel, equipment, operation, finance, safety-quality, materials, general affairs: 1 week after commissioning.
- (3) Transfer agreement: after commissioning and receiving certification of conformity in terms of quality, certificate on system safety and other certificates as required, for the investment and construction of urban railway projects; 1 week after the completion of final activities (among activities indicated in this report).
- (4) Minutes on completion of transferring: 6 months after signing the Transfer agreement.

Figure 2 : ROADMAP OF TRANSFER



* Plan of detail schedules shall be prepared for each component transfer plans.

11.2. Line 2A project Transfer Program

To study and prepare sufficiently resources and plan of activities for the Line 2A transfer, it is necessary to develop Proposal/Program on the Line 2A project transfer. Proposed outline of this Program is as following:

- (1) Necessity and meaning of Line 2A project transfer
- (2) Scope and contents of the transfer
- (3) Alternatives for implementation
- (4) Plan of implementation
- (5) Resources of implementation

The Program on Line 2A project transfer should be approved by HPC and MOT (under authorities of each party) as basis for implementation of each party, and basis for coordination.

11.3. Action Plan

- | | |
|---|---------------------|
| (1) Master plan for Line 2A project transfer | March/2014 |
| (2) Plan of personnel transfer | April - June/2014 |
| (3) Other component transfer plans | May - August/2014 |
| (4) Program of Line 2A transfer | September/2014 |
| (5) Proposal of transferring mechanism | June/2014-June/2015 |
| (6) Pursuing comments of Ministries on the Program of Company establishment | March-April/2014 |
| (7) Asking for approval of PM | April-May/2014 |
| (8) HPC to make decision on the establishment of company | June/2014 |
| (9) Developing Hanoi metro company | June/2014-June/2015 |

11.4. Action Plan management alternative

- (1) Action plan shall be updated, amended based on actual situation, satisfying objectives in transferring of Line 2A;
- (2) Consider and accelerate the milestone on the establishment of the Company;
- (3) Propose the implementation mechanism to ensure progress and objectives, to timely put Line 2A into safe operation.

11.5. Alternative for implementation of the Master plan for transfer

11.5.1. Alternative for Management of Master plan for transfer

- (1) The Master plan for transfer shall need approval of MOT and HPC.
- (2) MOT, HPC to unify in guiding and managing the implementation of the Master plan for transfer.
- (3) VNRA, MRB shall be standing agencies, which are responsible for compiling reports on implementing results, compiling and advising on any updates and adjustment of the plan.
- (4) MOT and HPC to provide guidance on developing and approval for the program of Line 2A project transfer, as basis to mobilize sufficient resources to implement transferring tasks.

11.5.2. Alternative for starting, implementing the Master plan for transferr

- (1) MOT and HPC to early approve for implementation alternatives of component transfer plans, including plan of operation, mobilizing personnel, developing plans on necessary resources, alternatives for implementation coordination.
- (2) The implementation on component transfer plans, transfer aspects shall need to closely follow requirements, orientations in the Master plan for transfer.

- (3) Standing agencies: MRB, VNRA to frequently monitor, compile results and provide timely coordinations between component transfer plans, and between transfer aspects.

ATTACHMENTS

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Appendix 1 : List of legal documents

- (1) Official letter No. 968/VPCP-KTTH dated Feb. 10, 2010 by Government office: Requirement for establishment of company one year before the end of the construction stage of project (Line 2A);
- (2) Meeting conclusion notice No. 463/TB-VPCP dated Dec. 30, 2013 by Government office regarding “Notice on conclusion of the Deputy PM Hoàng Trung Hải at the meeting on the implementation status of Hanoi urban railway project, Cat Linh – Ha Dong”.
- (3) Meeting conclusion notice No. 182/TB-BGTVT dated Mar. 29, 2013 by MOT regarding “Notice on conclusion of the Minister Dinh La Thang at the meeting on reviewing progress of urban railway project in Hanoi City and Ho Chi Minh City”;
- (4) Meeting conclusion notice No. 274/TB-BGTVT dated May. 07, 2013 by MOT regarding “Notice on conclusion of the Deputy Minister Nguyễn Ngọc Đông at the meeting with the Authority of Hanoi city”.
- (5) Meeting conclusion notice No. 75/TB-VP dated Jul. 24, 2013 by HPC regarding “Notice on conclusion of the Vice chairman of HPC Nguyễn Văn Khôi at the meeting with MOT on land acquisition for Hanoi urban railway construction project, Line 2A Cat Linh – Ha Dong”.
- (6) Meeting conclusion notice No. 256/TB-BGTVT dated Apr. 25, 2013 by MOT regarding “Notice on conclusion of the Deputy Minister Nguyễn Ngọc Đông at the meeting on certification of urban railway system safety assessment
- (7) Decision No. 3136/QĐ-BGTVT dated Oct. 15, 2008 by MOT regarding “the approval of Investment construction project “Urban railway: Cat Linh – Ha Dong Line” – Line 2A”.
- (8) Meeting conclusion notice No. 02/TB-JCC dated Aug.19, 2013 regarding “Notice on conclusion of 2nd JCC”.
- (9) Submission No. 467/CDSVN-VTPC dated Mar. 29, 2013 by VNRA: Regarding the request for appraisal and approval of training plan for urban railway operation and management human resources, urban railway project in Hanoi, Cat Linh - Ha dong.
- (10) Letter No. 3145/BGTVT-TCCB dated Apr. 12 by MOT: Training plan, Line 2A Human resources recruitment organization.
- (11) Official letter No. 3461/VPUB-QHXDGT dated Jul. 10, 2013 by HPC: Reply for the proposal of the agency to recruit and train human resources to be sent for education and training of operation and maintenance for Line 2A
- (12) Official letter No. 7281/BGTVT-CDSVN dated Jul. 22, 2013/7/2013 by VNRA: Resolving coordination problems and to accelerate Line 2A project implementation.
- (13) Letter No. 1891/CDSVN-VTPC dated Oct. 22, 2013 by VNRA: Reply for the letter No. 2189/SNV-QLSN dated Oct. 03, 2013 by DOHA: Comments for Training plan of Line 2A.
- (14) Letter No. 1892/CDSVN-VTPC dated Oct. 22, 2013 by VNRA: Notice on the result of recruitment implementation of Line 2A- phase 1.

Appendix 2 : Completion documents on the civil works

A. Investment preparation documents and construction contract documents

1.	Decision on investment guidelines which is accompanied by the construction investment report (Pre- Feasibility Study report) or decision on approval of investment guidelines.
2.	Decision on approval of construction investment projects or component project of competent authority which is accompanied by construction investment project (Feasibility Study report).
3.	Basic design, Standards framework
4.	Report on environmental impact assessment.
5.	Master plan
6.	Architectural plans
7.	Evaluation documents, participation in the review of the relevant agencies for the evaluation of investment projects and the basis of design build.
8.	Compensation for land acquisition and resettlement buildings.
9.	Documents of organizations, state competent agencies (if any): planning agreement, agreement or acceptance of use/ connection with technical works outside of fence, environmental impact assessment, safety (traffic safety, the safety of surrounding) and other concerned documents.
10.	Decision on grant/ lease of land by the competent authorities, or land leases in the case of not granted.
11.	Construction permit, unless otherwise exemption.
12.	Decision on appointed contractor, the results of approval for selection of the contractor and the contract between the employer and the contractor.
13.	Documents to provide the capability of the contractor as prescribed.
14.	Records and documents involved in the investment preparation stage.

B. Survey documents for civil works, civil works design

1.	Technical alternative of survey, construction survey report..
2.	Records of construction survey results.
3.	Design tasks (each period)
4.	Result of verification, design appraisal; approval decisions of technical design, attached: technical design documents (the list of drawing is attached); technical instruction; results of design verification of professional agency on construction contract (if any).
5.	Design documents of drawing which has been confirmed by the Employer (the list of drawing is attached).
6.	Acceptance records of construction design.
7.	Documents and other records related to the survey period and civil works design.

C. Civil works document and Acceptance test documents on civil works

1.	Variation of design in the construction process and the evaluation documents, approval of competent authority.
2.	Drawings (the list of drawings is attached).
3.	Plan, inspection methods, quality control of civil works.
4.	Certificate of origin, trademarks, conformity of the manufacturer's quality, regulation conformity certification, standard conformity certification (if any) under the provisions of Law on product and goods quality, Law on commercial and other relevant legislative regulations.
5.	Result of monitoring, measuring and testing in the process of construction work.

6.	Acceptance document on civil works, acceptance stage (if any) in construction process.
7.	Result of the test to verify, inspection of the quality for works, bearing capacity test of construction structure (if any).
8.	Equipment profile installed in the works.
9.	Operating procedure, operating works, process of maintenance for works.
10.	Written agreement, approval, certification agencies, state competent agencies (if any) of:
	a) Migration in the reservoirs, the historical relics, culture survey;
	b) Fire prevention safety, Fire fighting;
	c) Environmental safety;
	d) Labor safety, operation safety system for equipment of works, technological devices;
	đ) Implementation of construction permit (in the case of construction require permits);
	e) Connection permits for the infrastructure works and other related works;
	g) Other documents prescribed by the relevant law.
11.	Works documents to resolve the problem (if any).
12.	Results of acceptance test of works which is put into use by professional agency on construction contract.
13.	Test on completion records / works put into use by the Employer.
14.	Commissioning plan, Commissioning documents.
15.	Certificate of civil works quality compliance.
16.	Existing appendix in need of repair, remedy after putting into use.
17.	Civil works monitoring documents (if any); monitoring manual; monitoring procedure
18.	Documents/ Records/ other relevant materials in the construction stage and acceptance test of civil works.

Appendix 3 : The bases and reference material

- (1) Law on Railway No. 35/2005/QH-11
- (2) Law on Budget No. 01/2002/QH11 dated Dec. 16, 2002;
- (3) Law on Construction No. 16/2003/QH11 dated Nov. 26, 2003;
- (4) Law on Commercial No. 36/2005/QH11 dated Jun. 14, 2005;
- (5) Law on Intellectual property rights No. 50/2005/QH11 dated Nov. 29, 2005; Law on Amending several articles in Law on Intellectual property rights No. 50/2005/QH11;
- (6) Law on Technology transfer No. 80/2006/QH11 dated Nov. 29, 2006;
- (7) Law on Technical standards and regulations No. 68/2006/QH11 dated Jun. 29, 2006;
- (8) Law on Quality of product and goods No. 05/2007/QH12 dated Nov. 21, 2007;
- (9) Law on Amending several articles in Laws relating to basic construction investment No. 38/2009/QH12 dated Jun. 19, 2009 by the National Assembly;
- (10) Law on Public debt management No. 29/2009/QH12 dated Jun. 17, 2009;
- (11) Law on Archives No. 01/2011/QH13 dated Nov. 11, 2011;
- (12) Labour code No. 10/2012/QH13 dated Jun. 18, 2012;
- (13) Law on capital No. 25/2012/QH13 dated Nov. 21, 2012;
- (14) Decree No. 12/2009/NĐ-CP dated Feb. 10, 2009 by the Government regarding Management of construction investment projects;

- (15) Decree no. 83/2009/NĐ-CP dated Oct. 15, 2009 by the Government regarding Amending and supplementing several articles in Decree no. 12/2009/NĐ-CP dated Feb. 12, 2009 by the Government regarding construction investment management;
- (16) Decree No. 15/2013/NĐ-CP dated Feb. 06, 2013 by the Government regarding Quality management of construction works;
- (17) Decree No. 114/2010/NĐ-CP dated Dec. 06, 2010 by the Government regarding Maintenance of construction works;
- (18) Circular No. 03/2011/TT-BXD dated Apr. 06, 2011 by MOC regarding Guiding on activities of inspection, audition and certification of satisfaction of loading safety, and certification of appropriateness on construction works quality;
- (19) Circular No. 01/2013/TT-BGTVT dated Jan. 08, 2013 by MOT regarding Regulations for railway transport vehicles registration;
- (20) Circular No. 02/2009/TT-BGTVT dated Apr. 03, 2009 by MOT regarding Regulations for management on quality, technical safety and environmental protection for railway transport vehicles;
- (21) Decision No. 61/2007/QĐ-BGTVT dated Dec. 24, 2007 by MOT regarding Types of railway enterprises require safety certification; and conditions, sequence and procedure for issuing Safety Certification;
- (22) Standard: Acceptance on quality of construction works (TCXDVN 371:2006);
- (23) National Standard No. TCVN 8893-2011: Grading for Railway Lines;
- (24) Basic specifications No. TCCS 01:2010/VNRA on Railway Bridge-Tunnel Maintenance;
- (25) EN 50126 : Railway applications - The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS)
- (26) EN 50128: Railway applications - Communications, signalling and processing systems - Software for railway control and protection systems (March 2001);
- (27) EN 50129: Railway applications - Communications, signalling and processing systems - Safety related electronic systems for signalling (February 2003);
- (28) Report No. 86/BC-ĐSĐT dated May 20, 2013 by MRB regarding “Preparation for requesting for acceptance of policy for Line 2A transfer”;

Appendix 4 : Definitions

Unless the context otherwise requires, the following terms whenever used in this Plan have the following meanings:

Standards (Law no. 68, 2006)¹: means regulation on technical characteristics and management requirements used as standard for classifying and appraising products, goods, services, processes, the environment and other objects in socio-economic activities with a view to improving the quality and effectiveness of these objects. A standard shall be published in a written form by an organization for voluntary application.

Technical regulation (Law no. 68, 2006)²: Technical regulation means regulation on the limits of technical characteristics and management requirements which products, goods, services, processes, the environment and other objects in socio-economic activities must comply with in order to ensure safety, hygiene and human health; to protect animals, plants and the environment; to safeguard national interests and security, consumer interests and other essential requirements.

¹ Law on Standards & Technical regulations, 2006.

² Law on Standards & Technical regulations, 2006.

A technical regulation shall be promulgated in a written form by a competent state agency for mandatory application.

*Conformity assessment (Law no. 68, 2006)*³: Conformity assessment means determination as to whether objects of activities in the domain of standard or objects of activities in the domain of technical regulation are conformable with technical characteristics and management requirements in relevant standards or technical regulations. Conformity assessment covers testing, calibration, inspection and certification of standard or technical regulation conformity; announcement of standard or technical regulation conformity; and accreditation of the capacity of testing laboratories, calibration laboratories, conformity certification organizations and inspection organizations.

*Certification of standard conformity (Law no. 68, 2006)*⁴: Certification of standard conformity means certification that objects of activities in the domain of standard conform with relevant standards.

*Announcement of standard conformity (Law no. 68, 2006)*⁵: Announcement of standard conformity means announcement by an organization or individual of the conformity of objects of activities in the domain of standard with relevant standards.

*Announcement of technical regulation conformity (Law no. 68, 2006)*⁶: Announcement of technical regulation conformity means announcement by an organization or individual of the conformity of objects of activities in the domain of technical regulation with relevant technical regulations.

*Planning certificate (Law no. 30, 2009)*⁷: planning certificate is a document granted by a competent agency certifying the Data and information relating to an area or a lot of land according to the approved urban plan.

Planning license (Law no. 30, 2009): planning license is a document granted by a competent agency to an investor for use as a basis for making detailed planning or formulating work construction investment projects.

*Technical specifications (Decree no.15, 2013)*⁸: Technical specification is a set of technical requirements formulated based on the national technical codes and standards applied to works and will be used to guide and stipulate the materials, products, equipment used for works; construction execution, *supervision* and acceptance of construction works.

*As-built drawing (Decree no.15, 2013)*⁹: As-built drawing is a drawing of completed construction parts and works prepared on the basis of the approved construction design drawings with demonstration of actual dimension of the works.

*Construction completion dossier (Decree no.15, 2013)*¹⁰: Construction completion dossier is a set of documents related to investment and construction of works, including investment policy; construction investment projects or economic-technical report of works; construction

³ Law on Standards & Technical regulations, 2006.

⁴ Law on Standards & Technical regulations, 2006.

⁵ Law on Standards & Technical regulations, 2006.

⁶ Law on Standards & Technical regulations, 2006.

⁷ Law on Urban planning no. 30/2009/QH12 dated June 17, 2009.

⁸ Degree no. 15, 2013/ND-CP dated February 6, 2013 by the Government regarding Quality management of construction works;

⁹ Degree no. 15, 2013/ND-CP dated February 6, 2013 by the Government regarding Quality management of construction works;

¹⁰ Degree no. 15, 2013/NĐ-CP dated February 6, 2013 by the Government regarding Quality management of construction works;

survey report; construction design dossier; quality management dossier during the construction process; and other documents which are necessary to be kept after works are put to use.

Acceptance inspection (TCXDVN 371 : 2006)¹¹: is the inspection, consideration and evaluation for results on construction quality after completion, comparing to related designs, standards and technical regulations.

Construction works (Law no. 16, 2003)¹²: *Construction works* mean products created by human labor and with building materials and equipment installed therein, affixed to land, which may include underground and ground components, underwater and on-water-surface components and are constructed according to designs. Construction works include public-utility works, dwelling houses, industrial works, traffic works, irrigations works, energy works and other types of works.

Equipment installed in works (Law no. 16, 2003): *Equipment installed in works* includes work equipment and technological equipment. Work equipment means those installed in construction works according to construction designs. Technological equipment means those included in technological chains installed in construction works according to technological designs.

Construction rules (Law no. 16, 2003)¹³: *Construction rules* mean regulations to be compulsorily applied to construction activities, promulgated by the State management agencies in charge of construction.

Construction standards (Law no. 16, 2003)¹⁴: *Construction standards* mean regulations on technical standards, economic-technical norms, order for performing technical jobs, targets, technical indexes and natural indexes, promulgated or recognized by competent agencies or organizations for application in construction activities. Construction standards include compulsory standards and standards encouraged to be applied.

Construction work incidents (Law no. 16, 2003): *Construction work incidents* mean impairments beyond the permitted safety limits, thus putting the construction work in danger of collapse, having caused the collapse of part of the work or the entire work, or rendering it impossible to use the work according to the design.

Maintenance of a work (Decree no. 114, 2010)¹⁵: Maintenance of a work means a set of jobs performed to assure and keep the normal and safe operation of a work according to its design throughout the process of its operation and use. Maintenance may cover one, some or all of the following jobs: examination, observation, quality inspection, servicing and repair of a work.

Work maintenance process (Degree no. 114, 2010): Work maintenance process means regulations on the order, contents and instructions for performance of work maintenance jobs.

Works maintenance (Degree no. 114, 2010): means activities (monitoring, servicing, repairing small failures, maintaining equipment at works) to be conducted regularly and periodically to maintain works at normal operation status, and mitigating failures of works.

Railway works (Law no. 35, 2005)¹⁶: Railway works mean works constructed in service of railway communications and transport, including railways, bridges, culverts, tunnels,

¹¹TCXDVN 371 : 2006, Acceptance on quality of construction works;

¹² Law on Construction no. 16/2003/QH11.

¹³ Law on Construction no. 16/2003/QH11.

¹⁴ Law on Construction no. 16/2003/QH11.

¹⁵ Degree no. 114/2010/NĐ-CP dated 06/12/2010 by the Government regarding Maintenance of construction works.

¹⁶ Law on railways 35/2005/QH11 dated 14/6/2005.

embankments, retaining walls, stations, water drainage systems, communications and signaling systems, power supply systems and other railway works and support facilities.

Railway activities (Law no. 35, 2005): Railway activities mean activities of organizations and individuals in the domains of railway planning, development investment, business, assurance of railway communications and transport order and safety and other related activities.

Railway infrastructures (Law no. 35, 2005)¹⁷: Railway infrastructures mean railway works, railway work protection areas and railway traffic safety corridor.

Land for railway works (Decision 60/2005/QĐ-BGTVT): includes land to construct railway works, land within the area of railway protection and land within the safety corridor for rail transport (Article 3).

Railway traffic means (Law no. 35, 2005)¹⁸: Railway traffic means include locomotives, cars, self-propelled cars and specialized vehicles on rail tracks.

Product (Law no. 05, 2007)¹⁹: Product means the output of a production or service provision process for a commercial or consumption purpose.

Goods (Law no. 05, 2007)²⁰: Goods means products put on the market or for consumption through exchange, sale or marketing.

Products and goods incapable of causing unsafe (below referred to as group-1 products and goods) (Law no. 05, 2007)²¹: Products and goods incapable of causing unsafe situation (below referred to as group-1 products and goods) mean those products and goods which, under rational conditions of transportation, storage, preservation and use for proper purposes, cause no harms to humans, animals, plants, assets or the environment.

Products and goods capable of causing unsafe situation (below referred to as group-2 products and goods)²²: Products and goods capable of causing unsafe situation (below referred to as group-2 products and goods) mean those products and goods which, under rational conditions of transportation, storage, preservation and use for proper purposes, can latently cause harms to humans, animals, plants, assets or the environment.

Product and goods quality (Law no. 05, 2007)²³: Product and goods quality means the product and goods properties' extent of satisfaction of the requirements under announced applicable standards or relevant technical regulations.

Conformity evaluation organization (Law no. 05, 2007)²⁴: Conformity evaluation organization means an organization which tests, inspects, verifies and certifies the conformity of products, goods, production or service provision processes with announced applicable standards or relevant technical regulations.

Certify (Law no. 05, 2007)²⁵: Certify means to evaluate and attest the conformity of products, production or service provision processes with announced applicable standards (referred to as standard conformity certification) or with technical regulations (referred to as regulation conformity certification).

¹⁷ Law on railways 35/2005/QĐ11 dated 14/6/2005

¹⁸ Law on railways 35/2005/QĐ11 dated 14/6/2005

¹⁹ Law on Product and good quality no. 05/2007/QĐ12 dated 21/11/2007.

²⁰ Law on Product and good quality no. 05/2007/QĐ12 dated 21/11/2007.

²¹ Law on Product and good quality no. 05/2007/QĐ12 dated 21/11/2007.

²² Law on Product and good quality no. 05/2007/QĐ12 dated 21/11/2007.

²³ Law on Product and good quality no. 05/2007/QĐ12 dated 21/11/2007.

²⁴ Law on Product and good quality no. 05/2007/QĐ12 dated 21/11/2007.

²⁵ Law on Product and good quality no. 05/2007/QĐ12 dated 21/11/2007.

State examination of product and goods quality (below referred to as product and goods quality examination) (Law no. 05, 2007)²⁶: State examination of product and goods quality (below referred to as product and goods quality examination) means that a state agency reconsiders and reevaluates the quality of products, goods or production or service provision processes which have been evaluated in terms of quality by conformity evaluation organizations or to which other quality control measures have been applied by production and business organizations or individuals.

Agency in charge of state examination of product quality and goods (below referred to as product and goods quality examination agency) (Law no. 05, 2007)²⁷: Agency in charge of state examination of product quality and goods (below referred to as product and goods quality examination agency) means an agency assigned or decentralized to perform the state control of product and goods quality under a line ministry or a specialized agency of the provincial/municipal People's Committee.

Documents accompanying products or goods (Law no. 05, 2007)²⁸: Documents accompanying products or goods include conformity evaluation results, documents for advertising, introducing properties, utilities or use instructions of products or goods.

²⁶ Law on Product and good quality no. 05/2007/QH12 dated 21//11/2007.

²⁷ Law on Product and good quality no. 05/2007/QH12 dated 21//11/2007.

²⁸ Law on Product and good quality no. 05/2007/QH12 dated 21//11/2007.

Appendix 5: Details of legal basis for transfer

- (1) Decision No. 3136/QĐ-BGTVT dated Oct. 15, 2008 by MOT regarding the approval of Investment construction project “Urban railway: Cat Linh – Ha Dong Line” – Line 2A.
- (2) Official letter No. 968/VPCP-KTTH dated Feb. 10, 2010 by Government office: Requirement for establishment of company at least one year before the end of the construction project phase (Line 2A);
- (3) Meeting conclusion notice No. 303/TB-VPCP dated Aug. 12, 2013 by Government office regarding “Notice on conclusion of the Deputy PM Hoàng Trung Hải at the State Steering Committee for the Transport sector key projects”;
- (4) Meeting conclusion notice No. 463/TB-VPCP dated Dec. 30, 2013 by Government office regarding “Notice on conclusion of the Deputy PM Hoàng Trung Hải at meeting on the implementation status of Hanoi urban railway project, Cat Linh – Ha dong Line.
- (5) Meeting conclusion notice No. 182/TB-BGTVT dated Mar. 29, 2013 by MOT regarding “Notice on conclusion of the Minister Dinh La Thang at the meeting on reviewing progress of urban railway project in Hanoi City and Ho Chi Minh City”;
- (6) Meeting conclusion notice No. 274/TB-BGTVT dated May. 07, 2013 by MOT regarding “Notice on conclusion of the Deputy Minister Nguyễn Ngọc Đông at the meeting with the Authority of Hanoi city”
- (7) Meeting conclusion notice No. 75/TB-VP dated Jul. 24, 2013 by HPC regarding “Notice on conclusion of the Vice chairman of HPC Nguyễn Văn Khôi at the meeting with MOT on land acquisition for Hanoi urban railway construction project, Line 2A Cat Linh – Ha Dong”;
- (8) Meeting conclusion notice No. 02/TB-JCC dated Aug. 19, 2013 regarding “Notice of conclusion of 2nd JCC”

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**HAND-OVER AND TAKE-OVER PLAN
FOR
URBAN RAILWAY LINE 2A CAT LINH – HA DONG**

COMPOSED BY:

1. HANOI METROPOLITAN RAILWAY MANAGEMENT BOARD/ HPC
2. RAILWAY PROJECT MANAGEMENT BOARD / VNRA/MOT

SUPPORTING CONSULTANTS:

JICA TA TEAM

HANOI, AUGUST 2014

No.	Abbreviation	Formal Name
1	HPC	Hanoi people committee
2	MOT	Ministry of transport
3	UR	Urban railway
4	HMC	Hanoi Metro Company
5	MRB	Hanoi Railway Management Board
6	PMUR	Railway Project Management Unit / MOT

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1. Necessity, objectives

1.1 Necessity of hand-over and take-over

Line 2A Cat Linh – Ha Dong shall be the first line to enter operation in Dec, 2015 in Hanoi city in particular and Vietnam in general. The management, operation and maintenance of Line 2A Cat Linh – Ha Dong integrating with other urban railway lines, public transport modes such as bus, taxi, etc is to bring passengers convenience (capital city's people) when using the service. As a result, the synchronous management for operation of urban railway network in the city with other public transport modes is very important and necessary.

Urban railway line 2A Cat Linh – Ha Dong had been studied and started of investment since 2004 in former Ha Tay province area and Hanoi City area, which is under MOT. On May 29, 2008, National Assembly of Vietnam issued Resolution no. 15 adjusting administrative border of Hanoi City. Accordingly, Line 2A was totally inside the area of Hanoi City. According to stipulation in clause 2 of Article 55, Railway Law no. 35/2005/QH11 dated June 27, 2005: “*Urban railway is invested, constructed, managed and operated by provincial people's committees*”, Thus, it is necessary to transfer Line 2A Cat Linh – Ha Dong from MOT to HPC, which is:

a. in compliant with regulations in management, operation of urban railways (complying with Railway Law and instructions of the Government in management, operation of urban railways, and repayment of the project).

b. to ensure the operation after constructing the urban railway system in the city in synchronous and effective manner in accordance with plan approved by Prime Minister.

c. to ensure synchronous and complete construction, and connection infrastructures of Line 2A Cat Linh – Ha Dong with general technical infrastructure in the City, improve the quality, effectiveness of operation and maintenance of technical infrastructure.

1.2 Objectives of Hand-over, take-over plan.

This plan is developed to demarcate authorities, responsibilities of stakeholders during hand-over and take-over process to:

- a. Clarify basis.
- b. Clarify Principles during transferring process.
- c. Clarify specific regulations about Contents, timing of hand-over and take-over

- d. Clarify responsibilities of hand-over and take-over parties during concrete stages.

This is foundation to submit authorities for consideration and approval as basis to implement the hand-over and take-over of Line 2A Cat Linh – Ha Dong as regulations.

2. Basis

Railway Law no. 35/2005/QH11

Construction Law no. 16/2003/QH11

Decree no. 15/2013/NĐ-CP dated 06/02/2013 by the Government about Management of construction quality;

Circular no. 10/2013/TT-BXD dated 25/7/2013 by Ministry of Construction to specifically stipulate several contents about quality management of construction works;

Vietnamese standard TCVN 5640-1991 Hand-over of construction works;

Vietnamese standard TCVN 3990-1985 Document system of design and construction, Rules on statistics and preservation of origin of construction design documents;

Circular no. 19/2011/TT-BTC dated 14/2/2011 Regulations on settlement of projects funded by national budget;

Circular no. 03/2009/TT-BXD dated 26/03/2009 by Ministry of Construction specifically stipulating some contents in Decree no. 12/2009/NĐ-CP dated 12/02/2009 of the Government about Management of investment and construction projects;

Decision no. 1259/QĐ-TTg dated 26/7/2011 by Prime Minister to approve for Master Plan of constructing Hanoi City till 2030 and vision to 2050;

Decision no. 3136/QĐ-BGTVT dated 15/8/2008 by Minister of Transport to approve for investment and construction of Line 2A Cat Linh – Ha Dong;

Decision no. 1971/QĐ-UBND dated 04/3/2013 by HPC to approve for TA project “to strengthen the capacity of regulator and to establish O&M company for metropolitan railway lines in Hanoi City”;

Decision no. 925/QĐ-UBND dated 22/2/2012 by HPC about establishment of Hanoi Metropolitan Railway Management Board (MRB);

Notice no. 303/TB-VPCP dated 12/08/2013 by Government Office regarding Conclusions of Deputy PM at a meeting of National steering committee for key transport projects and works;

Notice no. 182/TB-VPCP dated 30/12/2013 by Government Office regarding Conclusions of Deputy PM Hoang Trung Hai at the meeting about progress of Hanoi UR project, Cat Linh – Ha Dong;

Notice no. 463/TB-BGTVT dated 29/03/2013 by Ministry of Transport regarding Conclusions of Minister Dinh La Thang at the meeting about the progress of UR projects in Hanoi City and HCMC;

Notice no. 274/TB-BGTVT dated 07/05/2013 by Ministry of Transport regarding Conclusions of Deputy Minister Nguyen Ngoc Dong at the meeting with representatives of organizations in HPC about UR projects of Line 1, Line 2A;

Notice no. 75/TB-VP dated 21/7/2013 by HPC regarding Conclusions of HPC Vice Chairman Nguyen Van Khoi at the meeting with MOT about land acquisition for construction of Line 2A Cat Linh – Ha Dong;

Notice no. 40/TB-VP dated 14/3/2014 by HPC about Conclusions of Mr. Nguyen Van Khoi – Vice Chairman of HPC, Chairman of JCC of TA Project at 3rd JCC meeting of TA Project “to strengthen the capacity of regulator and to establish O&M company for metropolitan railway lines in Hanoi City”

Document no. 1415/BGTVT-CQLXD dated 13/2/2014 by MOT regarding progress of construction of Line 2A Cat Linh – Ha Dong;

3. Objects and Scope of the Hand-over

Objects and Scope of the Hand-over are the entire of Line 2A Project Cat Linh – Ha Dong (hereinafter called Project) are approved at Decision no. 3136/QĐ-BGTVT dated 15/8/2008 by MOT, including:

- Line alignment: Hanoi UR Line 2A Cat Linh – Ha Dong runs through Dong Da, Thanh Xuan and Ha Dong districts in Hanoi City. The first point of this line is in the intersection between Cat Linh and Giang Vo streets in Dong Da district, following Hao Nam street in the North East – South West direction, through Hoang Cau street to Lang street, then going along To Lich river to the South, crossing To Lich river, following the medium strip along Nguyen Trai street straight forward to North East – South West direction, going through Quang Trung, Tran Phu street, then crossing the Southern ring railway line, following the South West direction till terminal which is new Ha Dong bus station (Ye Nghia bus station).

- Line length: 13.06km, 12 elevated stations (3 floors) and 1 depot.
- Permanent land acquired: 49.75 ha
- Load capacity: 14 T
- Depot: 19,63 ha
- Funding source: China’s ODA
- Total investment: 8,769,965 million VND-552.86 million USD
- Loan duration:
- Loan interest rate:
- Line agency: MOT
- Project owner: Vietnam Railway Administration

- Contractor: EPC contractor (China Railway Group 6)
- Project progress: at document no. 1415/BGTVT-CQLXD dated 13/2/2014 by MOT:

No.	Work items	Completing time
1	Construction of viaducts	21/12/2014
2	Construction of station	30/9/2015
3	Construction of Depot	30/4/2015
4	Beam launching	15/02/2015
5	Construction and installing track along the line	20/4/2015
6	Training and transferring technology	08/8/2015
7	Commissioning	29/9/2015
8	Commercial operation	20/12/2015

During actual implementation of this Plan, if there is any decision by competent authorities to adjust, change the contents of this project, those adjustments and changes shall be followed.

4. Stakeholders of Hand-over and Take-over

4.1 Hand-over: MOT

- a. Chairing the Hand-over: Vietnam Railway Administration - PMUR
- b. Participants:

(During the implementation, Hand-over party shall assign/supplement (if any) participants by written documents)

4.2 Take-over: HPC

- a. Chairing the Take-over:
 - MRB;
 - Hanoi Metro Company;
- b. Participants:
 - HAPI;
 - DOF;
 - DOT;
 - DOHA; DOJ;
 - DOC.

(During the implementation, Take-over party shall assign/supplement (if any) participants by written documents)

4.3 Other stakeholders

During the take-over, it is necessary to get involvement and guidance of functional Ministries, including:

- MPI:
- MOF.

(Shall be supplemented during implementation)

5. Principles of Hand-over, Take-over

a. MOT shall hand over all documents and personnel of Line 2A project in primitive state after the investment and construction is finished, the project is accepted as regulations and when functional authorities inspect and license for operation.

MOT:

- Prepare List of specific transferring items following appendices *(if information is not sufficient at this moment, more will be supplemented in later stages, but, it is necessary to be sent 2 months in prior to official transferring timing)*, in case of many changes and adjustments, this should be sent to take-over party 1 month in advance;

- Hand over documents with confirmation from competent authorities as regulations, ensure sufficient quantity, contents as regulations for each type of documents;

- Prepare hand-over and take-over memos for each transferring items (and sign in after confirming at site altogether);

- Coordinate, provide information of Project's contents during investment and construction process.

HPC:

- Take over and check (Check Project's compliance by Projects to legal documents which have been approved, accepted by competent authorities; Check the compliance between Project's documents and actual situation.; Develop checking plan, check list for each items while taking over the Project;) confirming hand-over contents based on list made by Hand-over party, sign in Hand-over memo (concretely explaining each lacked or shortaged content which need to be supplemented and fixed, fixing time (if any) for MOT to take responsibilities;

- During the investment and construction of the Project, HPC shall assign officers to join and coordinate with MOT to receive information about contents, technology of the Project, in order to develop regulations and management system, etc., ensuring safety, effectiveness during operation and maintenance after transferring.

b. In case that till transferring time, investing assets have been completed and put into operation, but the settlement is not done, MOT shall still implement the hand-over to HPC, and MOT shall be responsible for completing that settlement as regulations.

c. In case that till transferring time, investing assets are completed and put into operation but some items, supporting equipment have not been completed, MOT shall keep on transferring to HPC, MOT will be responsible for promptly completing list of those supporting items as regulations.

6. Contents of Hand-over and Take-over

6.1 Hand over and Take over of documents

a. Contents of documents transferring:

- Legal documents; Receiving copies from 01/2015 (HPC will issue letters).
- Project documents (including: documents of survey, design, construction, as-built, accepting, certificates by government organizations for construction works, equipment, vehicles, etc.): Receiving copies from 5/2015 (HPC will issue letters).
- Procedures, regulations on operation, maintenance, receiving technology of the Project towards works, equipment, vehicles. Receiving copies from 7/2015 (HPC will issue letters)
- Documents of personnel trained by the project. Receiving copies from 02/2015 (HPC will issue letters)
- Financial documents of the Project include settlement documents, construction, procurement documents (including land use right). Receiving copies from 9/2015 (HPC will issue letters)

b. Hand-over duration: from May/2015 to Dec/2015

c. Specific requirements:

Specific list of documents transfer is mentioned in enclosed Appendix 2. In case that there is any adjustment, change in this list, MOT shall be responsible for collecting all adjustments and changes, sending to HPC one month in prior to official transferring timing.

The quantity of documents that MOT transfers to HPC shall be consented specifically in accordance with each type, in accordance with existing regulations.

6.2 Construction works

a. Contents of Hand-over and Take-over of Construction works shall include:

- Viaducts,
- Stations,
- Auxiliary works,
- Depot infrastructure, Depot building...

b. Hand-over timing: from May/2015 to Dec/2015.

c. Specific requirements:

Specific list of technical infrastructure works, specifications are mentioned at enclosed Appendix 3. In case that there are adjustments, changes in this list, MOT is responsible for collecting all adjustments, changes, and send to HPC 1 month in prior to official transferring timing.

- Hand-over, Take-over contents include comparing actual status of the work with complete documents of the works; recording damages, shortages which need to be supplemented and fixed, fixing duration (if any) and make into a memo. To parties shall prepare a memo of site inspection (which concretely explains contents, items necessary for solutions) and sign.

- The transferring of infrastructures shall follow Article 80 of Construction Law no. 16/2003/QH11.

- HPC is responsible for developing contents necessary for checking during taking-over and operation of infrastructures in accordance with its designed functions, and implement the maintenance for works or items in compliant with regulations on construction.

6.3 Hand over vehicles, equipment.

a. Contents of transferring vehicles and equipment include:

- Train set system,
- Maintenance equipment, (including equipment for maintenance of construction works and other items, etc.)
- Signaling and telecommunication system,
- Track equipment system
- Electricity system
- Station equipment system (Elevator, escalator, AFC, etc.);
- Depot equipment
- Standby components/parts for replacement, fixing (procured but yet used).

b. Hand-over duration: from Sep/2015 to Dec/2015.

c. Specific requirements:

Specific list of technical infrastructure works, specifications are mentioned at enclosed Appendix 4. In case that there are adjustments, changes in this list, MOT is responsible for collecting all adjustments, changes, and send to HPC one month in prior to official transferring timing.

Hand-over, Take-over contents include comparing actual status of the work with complete documents of the works; recording damages, shortages which need to be supplemented and fixed, fixing duration (if any) and make into a memo. To

parties shall prepare a memo of site inspection (which concretely explains contents, items necessary for solutions) and sign.

6.4 Hand-over and Take-over of Personnel

a. Contents of personnel taking over

O&M staff on the line who will be awarded with certificates, licenses in accordance with Vietnamese regulations after finishing the training will include:

- Managerial staff,
- Train operation staff,
- Station staff,
- AFC staff
- Maintenance staff of civil works, rolling stock, signaling and telecommunication, electricity, station equipment, safety staff, etc.

b. Hand-over timing: from Sep/2015 to Dec/2015.

c. Specific requirements:

- List of personnel, basic information of each staff following enclosed Appendix 5. In case of any adjustment, change of this list, MOT is responsible for collecting adjustments, changes and send to HPC one month before official hand-over.

- Receive personnel, including consideration and confirmation of capability, skills of each staff reflecting their profiles, certificates.

6.5 Financial hand-over, take-over

a. Financial hand-over contents

- Responsibility for loans to implement the Project and conditions in Loan Agreement with donor.
- Responsibility for repayment
- Responsibility in front of functional management organizations for the management, use, operation and maintenance of civil works, rolling stocks, equipment; to ensure effectiveness, safety in compliant with Vietnamese regulations.

b. Hand-over timing: Aug/2015 to Feb/2017.

c. Specific requirements:

The use of national budget, ODA loans must be independently accounted on books, specifying debts and percentage of annual payable as regulations.

The duration for work settlement and transferring will be applied and implemented in accordance with stipulations in Circular no. 19/2011/TT-BTC dated 14/2/2014 by MOF regarding Regulations on settlement of completed projects funded by national budget.

7. Funding source

1. For costs relating to hand-over, take-over of assets (traveling, accommodation, per diem), organizations which assign staff to join in the hand-over and take-over process shall self pay in compliant with regulations.

2. Common costs relating to the transferring such as printing of documents (sufficient quantity as regulations), transportation of documents will be paid by MOT.

8. Organizing the implementation

- MOF and MPI are requested to guide on the take-over and transferring of finance, loans and debts.

- MOT, HPC shall consider and approve this Hand-over, Take-over Plan to prepare a foundation for the implementation.

8.1 Ministry of Transport

- Be responsible for the quality of civil works, infrastructure, rolling stock, equipment and personnel to be trained for the Project, in accordance with regulations about management of investment and construction projects.

- Develop list of documents, prepare documents, materials, civil works, rolling stock, equipment, personnel for hand-over following contents in each field.

- Develop plans, timing and location for hand-over of each item.

- Assign organizations, staff to implement the hand-over as approved plan.

- Prepare supporting means for HPC in checking and confirming the assets during the take-over.

- Pursuant to requirements of HPC described at the Memo of Site inspection, MOT shall fix problems as required (if any).

8.2 Hanoi People's Committee

- Take over all assets, related documents, materials for operation and maintenance as regulations.

- Take over all personnel trained by Project Owner to operate and maintain UR Line 2A.

- Take over all responsibilities relating to the loans of the Project, operating and maintaining the Project in accordance with acceptance and approval of competent authorities.

- Assign organizations, staff to participate in the take-over of contents, technology from project implementing stage till completing official transferring.

- After establishment of HMC: Coordinate with MRB to organize the take-over of the Project, organize the operation, maintenance of the line in accordance with its designed functions after taking over.

- HPC is responsible for managing, operating the civil works, infrastructures, rolling stocks, equipment in compliant with designed functions and regulations.

8.3 Responsibilities of two parties in stages

8.3.1 Project implementing stage

To manage and use, HPC shall be entitled and responsible for participating in the following contents:

a. Participate into training and take-over of operating and maintaining technology of the Project.

b. Contribute comments on technical design, personnel training plan (if required).

c. Participate, coordinate in take-over of civil works, rolling stock and equipment. Be entitled to make reservations about designs, requirements to fixing, completing of works during steps to accept the construction and during construction; accept the completion of the work.

d. In case that there is disagreement between MOT and HPC (or those assigned by Take-over party to join in project management) regarding work items during the process of Project Hand-over, final decision shall be made by MOT and MOT will be fully responsible for its decisions. If decisions made by MOT are not in compliant with regulations, HPC is entitled to refuse to take over the works.

đ. During the implementation of the Project, MOT is responsible for providing documents, materials (copies) to HPC as foundation for receiving technical contents, in order for management, operation and use in the future.

e. During commissioning: HPC shall coordinate with MOT to assign management, operating and maintaining organization for urban railways (MRB, Hanoi Metro) and VNRA, Railway Project Management Board to simultaneously participate in commissioning process of the entire system, including headquarters of the Company and direct operation unit of Line 2A, in order to receive technology, test on integrated operation of the system in normal conditions and in case of problems. HPC shall contribute opinions (if any) to adjust and organize for appropriate management and implementation; gradually receiving contents, technology, as foundation for official taking over after finishing commissioning.

8.3.2 Maintenance stage

a. MOT is responsible for guarantee of the works for HPC following remaining guarantee duration that EPC contractor must ensure for MOT.

b. If there is any failure during guarantee period of EPC contractor to MOT, HPC shall issue letter to request MOT to request EPC contractor to fix, replace in time.

c. In case that there is any disagreement or dispute during the guarantee period, concerned organizations shall report authorized organizations to settle as existing regulations./.

Appendix 1. HAND-OVER AND TAKE-OVER PROGRESS PLAN

No.	Contents	Unit	Num	2014												2015												2016			Note
				7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3							
I	Establishment of O&M company	day	105	[Gantt bars for 2014]																											Before 1 year when train operation start
1	Ask comment for related department/ Authority	day	30	[Gantt bar]																											
2	Modification based on comments	day	15	[Gantt bar]																											
3	Submit proposal for approval	day	30	[Gantt bar]																											
4	Approve and Decision issued	day	30	[Gantt bar]																											
II	Start Company activities	day	405	[Gantt bars for 2014]												[Gantt bars for 2015]												[Gantt bars for 2016]			
1	Completion of company organization	day	165	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
2	Completion of regulation and rules	day	375	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
3	Attend to commissioning of Line 2A	day	240	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
4	Công ty vận hành thương mại			[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			After transferring project
III	Transferring activities	day	600	[Gantt bars for 2014]												[Gantt bars for 2015]												[Gantt bars for 2016]			
1	Transferring of documents	day	600	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Legal documents of project	day	240	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Project documents of works	day	240	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Procedure documents, Manual	day	240	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Project documents of IIR	day	240	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Project documents of finance	day	330	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
2	Civil works	day	240	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Elevated structure	day	240	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Station	day	120	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Support works	day	120	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Infrasructure and Building of Depot	day	120	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
3	Equipment	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Rolling stock	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Equipment & Machines for RS maintenance	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Signal/ telecommunication system	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Track	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Electrical facilities	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Station equipment (ESC, EV, AFC)	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Equipment of Depot	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Spare parts (if any)	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
4	Transferring of HR	day	510	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			Already implemented by HPC & MOT
	Manager	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Train driver	day	510	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Station staff	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	AFC staff	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Maintenance staff	day	90	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
5	Transferring of financial issue	day	180	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Loan responsibility	day	180	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	Repayment responsibility	day	180	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			
	O&M responsibility	day	180	[Gantt bar]												[Gantt bars for 2015]												[Gantt bars for 2016]			

Appendix 2.LIST OF DOCUMENTS

(To be completed by Hand-over party 2 months in prior to official transferring timing)

List of necessary documents for the transferring and transferring timing from MOT to HPC

(This table was prepared by OMD/MRB and JICA TA Team, and confirmed by PMU-Rail/MOT)

No.	Item	Documents	Specific documents, materials	Time of Hand-over		Remarks	
				Agreement between PMUR and MRB	Official timing		
	Legal documents	(Propose PMU-Rail/MOT to update later)					
	Project documents	I. DOCUMENTS OF INVESTMENT PREPARATION					
1		Pre-FS report		02/2015~03/2015			
2		FS report		02/2015~03/2015			
3		Evaluation reports, opinions of stakeholders in evaluating the investment project		02/2015~03/2015			
4		Preliminary design report – Statement		02/2015~03/2015			
5		Preliminary design report - Drawings		02/2015~03/2015			
6		Land acquisition compensation plan approved by competent authorities		02/2015~03/2015			
7		Environmental Impact Assessment report		02/2015~03/2015			
8		Documents of authorized organizations regarding agreement on planning (if any)		02/2015~03/2015			
9		Documents of authorized organizations regarding agreement or acceptance for use or connect with other technical works.		02/2015~03/2015			
10		Documents of authorized organizations regarding safety (transport safety, safety for adjacent works) and other related documents.		02/2015~03/2015			
11		Documents of authorized organizations regarding land provision, renting in the project		02/2015~03/2015			
12		Construction license		02/2015~03/2015			
13	Decision of direct appointment of contractor, approval for results of contractor selection		02/2015~03/2015				

14	Contracts between project owner and contractors		02/2015~03/2015		
15	Capacity profile of contractors as regulation.		02/2015~03/2015		
16	Other related documents, materials for investment preparation stage		02/2015~03/2015		
II. DOCUMENTS OF CONSTRUCTION SURVEY AND CONSTRUCTION DESIGNS					
17	Technical survey plan, Survey report on construction work.		03/2014~05/2015		
18	Accepting memo of construction survey results.		03/2014~05/2015		
19	Technical design report - Statement		02/2015~03/2015		
20	Technical design report - drawings		02/2015~03/2015		
21	Evaluation results of technical design		02/2015~03/2015		
22	Results of evaluating technical design		02/2015~03/2015		
23	Decision to approve for technical design		02/2015~03/2015		
24	Documents of construction designs, drawings confirmed by project owner (with list of drawings enclosed).	Rolling stock	09/2015~11/2015		
		Signaling, telecommunication, Electricity	05/2015~07/2015		
		Civil works, Track	04/2015~06/2015		
		Station equipment, AFC	07/2015~09/2015		
25	Accepting memo of detail designs.		03/2014~05/2015		
26	Other related documents, materials in survey, design stage.		03/2014~05/2015		
III. DOCUMENTS OF CONSTRUCTION AND ACCEPTANCE OF CONSTRUCTION WORKS					
27	Design changes during construction and documents of evaluation, approval of authorized organizations.		07/2015~09/2015		
28	Documents of As-built drawings of civil works, equipment (with list of drawings enclosed).		05/2015~07/2015		
29	Plans and methods to inspect and monitor construction quality of civil works, equipment		07/2015~09/2015		
30	Report on inspection work		02/2015~03/2015		
31	Certification of organizations about final inspection report		12/2015		
32	Certificates of origin, goods labels, certificate of quality conformity by manufacturers, certificate of regulation compliance, certificate of standard compliance		09/2015~12/2015		

33		Accepting report for equipment by manufacturers		09/2015~12/2015		
34		Report on system integration in factories		09/2015~12/2015		
35		Warranty relating to products, components		09/2015~12/2015		
36		Results of observations, measurement, experiments during construction, and observing during operation.		09/2015~12/2015		
37		Accepting memos of construction works, stage accepting memos (if any) during construction.		07/2015~09/2015		
38		Results of control experiments, testing quality of works, experiments of load bearing of structures (if any).		07/2015~09/2015		
39		Dairy of equipment installation in the project		07/2015~09/2015		
40		Documents of acceptance, agreement, confirmation of authorized organizations (if any) :	a. Surveys on moving from lake areas, historical, cultural sites;	03/2014~05/2015		
			b. Safety in fire preventing and fighting;	09/2015~12/2015		
			c. Environmental safety;	09/2015~12/2015		
			d. Labor safety, operation safety of civil works equipment and technical equipment system;	09/2015~12/2015		
			e. License for construction (for cases needed of construction licenses);	03/2014~05/2015		
			f. Construction permit to connect to technical infrastructures and other related works;	03/2014~05/2015		
			g. Other documents as related regulations.	03/2014~05/2015		
41		Documents of settling construction works incidents (if any).		07/2015~09/2015		
42		Inspection results for accepting the construction works to be put into operation by authorized organization.		09/2015~12/2015		
43		Certificate of the Government Acceptance Council.		07/2015~09/2015		
44		Appendices of outstandings which need to be fixed and recovered after putting the line into operation.		09/2015~12/2015		
45		Other related documents /correspondents/ materials in construction and accepting stage.		07/2015~09/2015		

46	Documents of procedures, rules of operation, maintenance of civil works, equipment, rolling stock	Papers relating to intellectual properties (register card for innovation certificate, license, etc.)		11/2015~12/215			
47		Drawing of line alignment (those drawings with information about slope, curve, positions of turnout)		07/2015~09/2015			
48		Layout drawing of station equipment (including equipment, machines for station works)		07/2015~09/2015			
49		Safety management manual (safety division of OU) (if any)		12/2015			
50		Layout drawing of safety equipment (if any)		12/2015			
51		Commissioning plan		06/2015~08/2015			
52		Report on results of commissioning		11/2015~12/2015			
53		Certificates of organizations about final report on results of commissioning		11/2015~12/2015			
54		Manual on countermeasures against accidents, incidents, natural disasters (if any)		09/2015~11/2015			
55		Documents relating to overview of operation plan (list of conditions to make train diagram, operation curve) (if any)		09/2015~11/2015			
56		Documents, drawings about technical specifications of train operation equipment		07/2015~09/2015			
57		List of equipment, machines used for train operation, civil works, equipment, rolling stock (quantity, technical specification)	Train operation		05/2015~07/2015		
			Rolling stock		09/2015~10/2015		
			Signaling telecommunication, Electricity		05/2015~07/2015		
			Civil works, Track		05/2015~07/2015		
			Station equipment, AFC		05/2015~07/2015		
58	List of spare parts used for train operation, civil works, equipment, rolling stock (quantity, method of procurement)	Train operation		05/2015~07/2015			
		Rolling stock		09/2015~10/2015			
		Signaling telecommunication, Electricity		05/2015~07/2015			
		Civil works, Track		05/2015~07/2015			
		Station equipment, AFC		05/2015~07/2015			

59		List of specifications and installation progress of devices and signs relating to train operation		05/2015~07/2015		
60		Train diagram when newly starting the operation of Line 2A		05/2015~07/2015		
61		Rolling stock ordered specifications (including approvals of related organizations)		05/2015~07/2015		
62		Reports on inspection of shipment for rolling stock, RS inspection and fixing equipment (including approvals of related organizations)		09/2015~11/2015		
63		Bidding documents relating to rolling stock, RS inspection and fixing equipment (requirements which is technical in tendering, plan on tendering of contractor, tendering results, approvals of related organizations)		09/2015~12/2015		
64		Contract documents relating to RS contract, RS inspection and fixing equipment		05/2015~07/2015		
65		Instruction manual relating to train operation	Specifications and manual of operation management system, etc	07/2015~09/2015		
			Work manual for train crew, OCC staff and signaling staff	07/2015~09/2015		
			Documents relating to regulations of train operation	07/2015~09/2015		
			Specifications, manuals, software, etc. of equipment/device to prepare train diagram, operation curve and working plan of train crew	07/2015~09/2015		
66		Instruction manual relating to Station works	Handling with income (station equipment)	06/2015~09/2015		
			Safety management (especially relating to train operation)	06/2015~09/2015		
			Office, supervision, management	06/2015~09/2015		
			Management of station equipment	06/2015~09/2015		
			Customer service (countermeasure against incident, accident)	06/2015~09/2015		
			Other general contents (if any)	06/2015~09/2015		

67	Instruction and maintenance manual relating to RS	RS/RS inspection and fixing equipment instruction manual	09/2015~12/2015		
		RS/RS inspection and fixing equipment maintenance manual (including training manual)	09/2015~12/2015		
		RS/RS inspection and fixing equipment completion documents	09/2015~12/2015		
68	Instruction and maintenance manual relating to signaling telecommunication and electricity	Instruction manual	11/2014~01/2015		
		Maintenance manual	11/2014~01/2015		
		Management register	05/2015~07/2015		
69	Instruction and maintenance manual relating to civil works, track	Instruction manual	05/2015~07/2015		
		Maintenance manual	05/2015~07/2015		
		Management register	05/2015~07/2015		
70	Instruction and maintenance manual relating to station equipment, AFC	Instruction manual	05/2015~07/2015		
		Maintenance manual	05/2015~07/2015		
		Management register	05/2015~07/2015		
71	Procedures and plan of maintenance relating to civil works and equipment, RS	RS / RS inspection and fixing equipment (including items relating to specific inspection plan after starting commercial operation)	09/2015~12/2015		
		Civil works, Track	05/2015~07/2015		
		Signaling telecommunication, Electricity	05/2015~07/2015		
		Station equipment, AFC	05/2015~07/2015		
		AFC maintenance work flow	05/2015~07/2015		
		Maintenance data of equipment (Signaling telecommunication, Electricity, AFC)	05/2015~07/2015		
		RS arrangement plan	09/2015~12/2015		

72		Maintenance rules relating to civil works, equipment, RS	Rolling stock	05/2015~07/2015		
			Signaling telecommunication, Electricity	05/2015~07/2015		
			Civil works, Track	05/2015~07/2015		
			Station equipment, AFC	05/2015~07/2015		
73	HR documents	CVs (including health certificate)		07/2015~09/2015		
74		Organization structure, personnel arrangement (including system of ordering, of commands issuance, etc.)		Included in Traing plan of Line 2A		
75		Method of working shift arrangement		Included in Traing plan of Line 2A		
76		Recruitment criteria (Items and standards of recruitment conditions)		Included in Traing plan of Line 2A		
77		Results of recruitment exams		07/2015~09/2015		
78		Papers relating to social insurance payment		07/2015~09/2015		
79		Database relating to information of staff such as subordinate departments, titles, etc. (if any)		Included in Traing plan of Line 2A		
80		Training plan (including evaluation criteria of completing training course and training curriculum, documents)		Included in Traing plan of Line 2A		
81		Training, education report (including results of passed/unpassed, certificate of completing the course)		09/2015~11/2015		
82		Papers, documents relating to completion of technical training		Included in Traing plan of Line 2A		
83		Documents relating to training contents about materials management, making cost estimate, accounting in related departments under Operation Unit of Line 2A		Included in traing plan of Line 2A		
84		Documents relating to management method of attendance, health, training for train crew		Under confirming		
85	Records of quality management and inspection of conformity for train crew, OCC staff and signaling handling staff		07/2015~09/2015			

86		Train operation license provided by related organization in China, or equivalent certificate of completing the driver training course		07/2015~09/2015		
87		Regulations on license/certificate system for technical personnel		Included in Training plan of Line 2A		
88		Uniform (if any)		Nothing		Under responsibility of Company
89	Financial documents Financial documents	Papers relating to recruitment costs		07/2015~09/2015		
90		Papers relating to training costs		11/2015~12/2015		RPMU provides right after Training plan of Line 2A is approved
91		Papers relating to costs for direct and indirect staff		07/2015~09/2015		
92		Management register of fixed assets, materials		07/2015~09/2015		
93		Manual relating to administration, materials management		07/2015~09/2015		
94		Documents relating to office management		07/2015~09/2015		
95		Documents relating to project costs (including settlement documents for construction works items)		11/2015~12/2015		
96		Fixed asset register (items, existing location, procurement timing, procured value, book value)		Nothing		Under responsibility of Company
97		Fixtures register (itemss, preservation location, procurement timing, procured value, etc.)		Nothing		Under responsibility of Company
98		Title deed (land use rights, registration, etc.)		07/2015~09/2015		
99		Vouchers relating to transactions and assets procurement (contracts, etc.)		Nothing		These transactions is done by Company
100		Certificates relating to renting (renting contracts, etc.)		Nothing		Under responsibility of Company (if any)
101		Papers relating to tax payment (if any)		11/2015~12/2015		
102		Documents related to the loan of the Government.		11/2015~12/2015		Included in Legal documents
103	Documents related to safety and quality activity cost (Maannual for keeping quality and safety) (if any)		11/2015~12/2015			

104		Documents related to commissioning cost		11/2015~12/2015		Included in technical design report and commissioning plan
105		Documents related to storage situation of materials and spare parts		Nothing		Under responsibility of Company
106		Demand forecast (1year, 5 years)		Included in FS report		Developed by Company (in the business plan)
107		Procurement and installation cost of RS, equipment, and Construction works (including inspection and fixing equipment and spare parts)	Rolling stock	07/2015~09/2015		
			Signaling telecommunication, Electricity	07/2015~09/2015		
			Civil works, Track	07/2015~09/2015		
			Station equipment, AFC	07/2015~09/2015		
			Other equipment (tools of train driver and station staff)	07/2015~09/2015		
108		Durable years of RS, equipment and Civil works (including inspection and fixing equipment)	Rolling stock	07/2015~09/2015		
			Signaling telecommunication, Electricity	07/2015~09/2015		
			Civil works, Track	07/2015~09/2015		
			Station equipment, AFC	07/2015~09/2015		
109		Annual maintenance cost of facilities, equipment, vehicles (including inspection and fixing equipment)	Rolling stocks	Included in FS report		Developed by Company (in the 5 year business plan)
			Signaling telecommunication, Electricity			
			Civil works, Track			
			Station equipment, AFC			
110		Documents relating to equipment management system and inventory management system(if any)		Nothing		RPMU provides list of equipment. Company sets up the system.
111		Documents of electric volume calculation		11/2014~01/2015		
112		Documents relating to cash sales management system in AFC.		07/2015~09/2015		
113			Rolling stock	07/2015~09/2015		

		List of equipment and vehicle provider (including backup equipment and spare parts)	Signaling telecommunication, Electricity	07/2015~09/2015		
			Civil works, Track	07/2015~09/2015		
			Station equipment, AFC	07/2015~09/2015		
114		Contract documents relating to procurement of RS, equipment and civil works	Rolling stock	07/2015~09/2015		
			Signaling telecommunication, Electricity	07/2015~09/2015		
			Civil works, Track	07/2015~09/2015		
			Station equipment, AFC	07/2015~09/2015		
115		Contract document relating to maintenance work (if any)	Rolling stock	07/2015~09/2015		
			Signaling telecommunication, Electricity	07/2015~09/2015		
			Civil works, Track	07/2015~09/2015		
			Station equipment, AFC	07/2015~09/2015		
116		Unit price of maintenance work	Rolling stocks	Nothing		Under responsibility of Company
			Signaling telecommunication, Electricity			
			Civil works, Track			
			Station equipment, AFC			
117		Annual maintenance budget plan (AFC)		Nothing		Under responsibility of Company
-						

Appendix 3. LIST OF CIVIL WORKS

To be prepared by the transferring party 02 months before official transferring time

FORM 2

No	Name	Item	Time		Quantity	remark
			Completion	Hand-over		
\	Viaduct	Pier				
		Beam				
				

Appendix 4. LIST OF VEHICLES AND EQUIPMENT

To be prepared by the transferring party 02 months before official transferring time

FORM 3

No	Name	Description	Time		Quantity	Operation check	
			Completion	Hand-over		Good	Bad, damage
\	AFC	Ticket vending machine					
		Ticket collection gate					
					

Appendix 5. LIST OF PERSONNEL

(The hand-over party is responsible to add full name in each position one (1) month before official transferring time)

Site operation management division: 83 persons

Dept.	Position		Training place		Type of certificate			Time of Transfer	Remark
			CH	VN	Excellent	Good	Fair		
Controlling center	Manager	1							
	Deputy Manager	1							
	Train dispatching management	1							
	Electricity dispatching management	1							
	Train operation diagram preparation and management	2							
	Train operation dispatcher	16							
	Electricity dispatcher	8							
	Environment supervising dispatcher	4							
Train driver management	Manager	1							
	Train driver management	2							
Station management department	Manager	1							
	Ticket management	2							
	Marketing service	1							
	AFC center management	4							
Civil work maintenance department	Manager	1							
	Architectural equipment management	2							
Material department	Manager	1							
	Material management	1							
	Material store management	2							
Station equipment department	Manager	1							
	Station equipment management	2							
Electricity department	Manager	1							
	Electrical equipment management	2							
Signaling telecommunication department	Manager	1							
	Telecommunication equipment management	1							
	Signaling equipment management	2							
	AFC equipment management	1							
Track department	Management	1							
	Track management	2							
Rolling stock department	Manager	1							
	Car electrical equipment management	2							
	Car equipment management	2							

Appendix8-4-2-B

Dept.	Position		Training place		Type of certificate			Time of Transfer	Remark
			CH	VN	Excellent	Good	Fair		
General affair department	Manager	1							
	Clerk	2							
	Admin	1							
	Legislative management	1							
	Logistic management	1							
Safety	Manager	1							
	Car safety supervision	1							
	Technical equipment safety management	1							
	Transport fire prevention safety supervision	1							
	Safe measureresearch	1							
	Occupational safety supervision	1							
Total number of staff		83							

Passenger center: 86 persons

Center	Staff Category	Position		Training Place		Type of certificate			Time of transfer	Remark
				CH	VN	Excellent	Good	Fair		
Passenger Center	Management staff	Manager of railcar	1							
		Deputy manager of railcar	2							
		Driving technical senior chief	1							
		Driving technical chief	1							
		Assistance of driving technique	1							
	Driving office	Senior supervisor of signaling	1							
		Supervisor and dispatcher of train operation	4							
		Signaling supervisor	8							
	Driver team	Duty staff	8							
		Drivers	46							
	Shunting, testing team	Senior drivers, for shunting and testing	1							
Drivers, for shunting and testing		12								
Total number of staff		86								

Train inspection and repair center: 53 persons

Center	Staff Category	Position		Training place		Type of certificate			Time of transfer	Remark
				CH	VN	Excellent	Good	Fair		
<i>Train inspection and repair center:</i>	Management staff	Manager	1							
		Deputy Manager	2							
		Technical chief for inspection and repair	1							
		Chief engineer for inspection and repair	1							
		Assistant for inspection and repair	1							
	Supervision of inspection and repair department	Inspection and repair supervisor	4							
	Train technical inspection team	Main supervisor for train inspection	4							
		Senior inspection staff for electrification	4							
		Inspection staff for electrification	8							
		Senior inspection staff for machine	4							
		Inspection staff for machine	8							
	Monthly maintenance team	Main supervisor for monthly inspection	1							
		Senior monthly inspection staff for electrification	1							
		Monthly maintenance of electrification	2							
		Senior monthly maintenance for machines	1							
		Monthly maintenance for machines	2							
	General equipment supervising team	Main supervisor for equipment	1							
		Worker on Equipment type A (Crane, folk-lift)	1							
		Worker on Equipment type B (roller)	2							
		Worker on Equipment type C (Train washing machine)	1							
		Supervisor of Equipment type A (measuring tools)	1							
		Supervisor of equipment type B (small train, maintenance car)	2							
	Total			53						

Appendix8-4-2-B

Passenger transport management center (at stations): 254 persons

Center	Staff Category	Position		Training Place		Type of certificate			Time of transfer	Remark
				CH	VN	Excellent	Good	Fair		
<i>Passenger transportation management Center(at stations)</i>	Management staff	Manager	3							
		Assistant	9							
		Station affairs in-charge staff	6							
	Operation staff	On-shift center leader	36							
		General affairs staff	78							
		Ticket clerk	36							
		Safety staff	48							
	General working staff	38								
Total number of staff			254							

Signaling and telecommunication repair center: 62 persons

Center	Staff Category	Position		Training place		Type of certificate			Time of transfer	Remark
				CH	VN	Excellent	Good	Fair		
<i>Signaling and telecommunication repair center</i>	Management staff	Manager	1							
		Deputy manager	2							
		Telecommunication chief engineer	1							
		Signaling chief engineer	1							
		AFC chief engineer	1							
	Working staff	Telecommunication maintenance worker	18							
		Signaling maintenance worker	20							
		AFC maintenance worker	18							
Total number of staff			62							

Electrical inspection and repair center: 22 persons

Center	Staff Category	Position		Training place		Type of certificate			Time of transfer	Remark
				CH	VN	Excellent	Good	Fair		
<i>Electrical Inspection and Repair Center</i>	Management Staff	Manager	1							
		Deputy-Manager	1							
		Electrical engineer	2							
	Working staff	Electrical patrol worker	18							
Total			22							

Station equipment inspection and repair center: 60 persons

Center	Staff category	Position		Training place		Type of certificate			Time of transfer	Remak
				CH	VN	Excellent	Good	Fair		
<i>Station equipment inspection and repair center:</i>	Management staff	Manager	1							
		Deputy Manager in charge of Safety	1							
		Deputy Manager in charge of operation	1							
		Engineer	3							
	Working staff	General inspection and repair worker	42							
		Elevator repair worker	12							
Total number of staff			60							

Track inspection and repair center: 37 persons

Center	Staff category	Position		Training place		Type of certificate			Time of transfer	Remark
				CH	VN	Excellent	Good	Fair		
<i>Track inspection and repair center</i>	Management staff	Manager	1							
		Deputy Manager	1							
		Track engineer	1							
		Inspection engineer	1							
	Working staff	Track repair worker including three workers in charge of damage detection	33							
Total number of staff			37							

Civil work inspection and repair center: 20 persons

Center	Staff category	Position		Traning place		Type of certificate			Time of transfer	Remark
				CH	VN	Excellent	Good	Fair		
<i>Civil work inspection and repair center</i>	Management staff	Manager	1							
		Deputy Manager	1							
		Bridge and road engineer	1							
		Electrical and water engineer	1							
	Working staff	Civil work repair worker	16							
Total number of staff			20							

Total persons to be handed over: 685 persons

<i>TT</i>	<i>Center</i>	<i>Number</i>	<i>Remark</i>
1	Vice General Director	4	
1.1	Staff of departments	83	
2	<i>Passenger train center</i>	86	
3	<i>Train inspection and repair center</i>	53	
4	<i>Passenger transport station center</i>	254	
5	<i>Signaling and telecommunication inspection and repair center</i>	62	
6	<i>Electrical inspection and repair center</i>	22	
7	<i>Station equipment inspection and repair center</i>	60	
8	<i>Track inspection and repair center</i>	37	
9	<i>Civil work inspection and repair center</i>	20	
	Total	685	

**HANOI PEOPLE'S
COMMITTEE**

**THE SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness**

Ref. No.: 9796/UBND-XDGT

Hanoi, December 15, 2014

Sub.: Accepting Hand-over, Take-over Plan for Hanoi Urban Railway Project, Cat Linh – Ha Dong

To: Hanoi Authority of Planning and Investment (HAPI), Department of Home Affairs (DOHA)
Hanoi Metropolitan Railway Management Board (MRB)
Railway Management Board – MOT (PMUR)

HPC received document no. 4678/KH&DT-HTQT dated December 9, 2014 by HAPI about asking for acceptance of contents on Hand-over and Take-over Plan for Hanoi Urban Railway Line, Cat Linh – Ha Dong (Attached).

Regarding this matter, HPC would like to have the following comments:

1. Accept the proposal of HAPI on above document. Assign HAPI to proactively instruct MRB to promptly complete hand-over and take-over documents, procedures as regulations.

2. Assign MRB to coordinate with Railway Management Board – MOT (PMUR) and concerned organizations to promptly implement as regulations./.

Recipient:

- Chairman of HPC (to report);
 - MOT;
 - Vice chairperson of HPC (Hung);
 - Department of: MOT, TC;
 - HPC' Office: Chief, Vice chief (Thinh), Transport planning and development (Dat, Thg, Thinh), TH, KT
 - Kept at Docs control div., Transport planning and development (Hai) .
- 38967-17

**ON BEHALF OF HPC FOR CHAIRMAN
VICE CHAIRMAN**

(Signed and Sealed)
Nguyen Quoc Hung

MINISTRY OF TRANSPORT

THE SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

Ref. No.: 199/BGTVT-CQLXD

Hanoi, January 8, 2015

Sub.: Accepting Hand-over, Take-over Plan for Hanoi Urban Railway Project, Cat Linh – Ha Dong

To: Railway Management Board

After reviewing document no. 1133/BQLDADS-DA2 dated December 25, 2014 by Railway Management Board and document no. 9796/UBND-XDGT dated December 15, 2014 by HPC about Hand-over and Take-over Plan for Hanoi Urban Railway Line, Cat Linh – Ha Dong, MOT has had the following opinions:

1. Accept the Hand-over and Take-over Plan for Hanoi Urban Railway Project, Cat Linh – Ha Dong, as recommendation of Railway Management Board at its document no. 1133/BQLDADS-DA2 dated December 25, 2014.

2. Assign Railway Management Board to coordinate with Hanoi Metropolitan Railway Management Board (MRB), Hanoi Railway One Member Limited Liability Company and concerned organizations to promptly implement as regulations./.

Recipient:

- As above;
- Minister (to report);
- HPC;
- MRB;
- Kept at Office, Transport Engineering Construction Bureau.

FOR MINISTER
DEPUTY MINISTER

(Signed and Sealed)
Nguyen Hong Truong

Hanoi City People Committee
Hanoi Metro One Member LLC

THE SOCIALIST REPUBLIC OF VIETNAM
Independent – Freedom – Happiness

REGULATIONS

FUNCTIONS, RESPONSIBILITIES OF UNITS UNDER HANOI METRO ONE MEMBER LLC

GENERAL AFFAIRS DEPARTMENT

1. Functions:

Provide advise, plan, implement general affairs' activities to satisfy responsibilities, plans and strategies of the Company.

2. Tasks:

- (1) Develop strategies, plans, policies, procedures about documentation control and archives, foreign affairs, office management, salary and social policies for labors.
- (2) Documentation control and archives of the Company.
- (3) Develop, manage and control common information system of the Company.
- (4) Manage and operate HQs office of the Company, and HQs' assets.
- (5) Common foreign affairs of the Company.
- (6) Evaluate general affairs plans, check, monitor and evaluate general affairs of OU.
- (7) Join in dealing with incidents, accidents following regulations of the Company.
- (8) Prepare alternatives, plans and organize the receiving of UR projects in terms of general affairs.
- (9) Develop quality plan (for general affairs) complying with quality policy and quality system of the Company, develop quality plans to OUs. Organize, implement, monitor the implemetnation of quality plan (including the ones of OUs).
- (10) Develop safety plan (for general affairs) complying with safety policy of the Company, develop safety plan to OUs. Organize, implement and monitor the implementation of safety plan (including the ones of OUs).
- (11) Contribute comments about development plan for GA human resources of OUs; propose the cirulation of GA human resources among lines.

(12) Develop and organize the implementation of plan, programs to satisfy operation of Board of Members, Auditors of the Company, complying with Articles of Incorporation.

(13) Timely and appropriately provide information to Board of Members and Auditors of the Company.

(14) Reporting for assigned tasks.

ORGANIZATION AND HUMAN RESOURCES DEPARTMENT

I. FUNCTIONS, RESPONSIBILITIES

1. Functions:

Provide advices, assist Board of General Director in managing such activities relating to organization structure, personnel management, policies, labor – salary, emulation – awarding, punishing, recruiting, training.

2. Responsibilities:

2.1. *Relating to organization structure:*

- Provide advices about organization structure, promulgate working conditions, functions and responsibilities of units under the Company. Develop regulations to coordinate works among these organizations.

- Develop regulations about organization structure;
- Review, supplement, amend regulations about organization and operation of the Company.

- Provide advice to the establishment, merging or dissolution of units under the Company.

- Check and ensure the conformity of units under the Company to regulations.

2.2. *Relating to Human resources:*

- Chair, coordinate with subordinate units to determine the number of personnel in respective units, developing short-term, long-term HR plans for each unit, and the Company.

- Chair, coordinate with subordinate units to conduct recruitment, develop plans, regulations, procedures of recruitment, standards for positions, titles; prioritized conditions during recruitment;

- Provide advice, propose, implement procedures to mobilize, appoint, dismiss, resign, circulating personnel;

- Provide advice, chair the implementation and development of short-term, long-term personnel plan. Review, supplement personnel plan for the Company annually.

- Develop salary regulations, implement activities relating to salary payment, labor hiring fee, wage for temporary workers, PIT, resignation subsidy, etc.
- Chair the implementation of policies for staff (salary increase, official salary level increase, official salary level changing, social insurance, health insurance, labor accident insurance, social welfares, annual leaves, retirement, unemployment subsidy, maternity leave);
- Join in salary surveys of counterparts, and conduct surveys on labor expenses in the market, serving as basis for development of annual personnel policy. Conduct surveys on personnel policy and on the satisfactory of all staff, workers, officers, in order to improve HR policies.
- Coordinate with subordinate units to follow up, check and remind of management works and evaluate staff;
- Inspect, manage labor safety, labor sanitary, labor safety utilities and health care for staff;
- Store, update and manage personnel profiles (Hardcopy and softcopy), confidential documents about personnel and those about safety investigation.
- Provide and manage information about organization structure, benefits, recruitment noticing, etc. on recruiting website, and recruitment advertising website to promote the Company's image.
- Responsible for activities relating to disputes and conciliation in general affairs and labor activities.

2.3. Emulation, awarding, punishing:

- Provide advices to develop regulations on emulation, awarding of the Company;
- Provide advices, develop plans and organize for emulation activities, propagandize, promote typical individuals or issues. Instruct, check the implementation of the plan, contents of emulation, awarding for subordinate units;
- Propose to consider, handle by punishing methods in compliant with regulations of the Government and the Company towards staff.

2.4. Training

- Develop training regulations/rules of the Company;
- Chair, coordinate with subordinate units to develop plans, programs, and implement the training, education for personnel, matching the requirements of works of each subordinate units of the Company;
- Provide advices on the association and cooperation with domestic and foreign organizations, hiring experienced experts to train and educate about O&M for urban railway lines in Hanoi City.

- Study, provide advices to develop policies about personnel training and developing human resources for the Company.

2.5. Others.

- Implement internal political protection of the Company.
- Implement, provide advices in the propaganda of legal regulations, local democracy, preventing and fighting corruptions, practicing thrift, avoiding waste, etc.

- Monitor the register, implementation of methods to improve work efficiency and productivity.

- Check, deal with complaints, denouncements and handling violations in terms of organization, and officers in assigned tasks.

- Other tasks as assigned by Board of General Director.

II. ORGANIZATION STRUCTURE AND TASK ASSIGNMENT

1. Organization structure

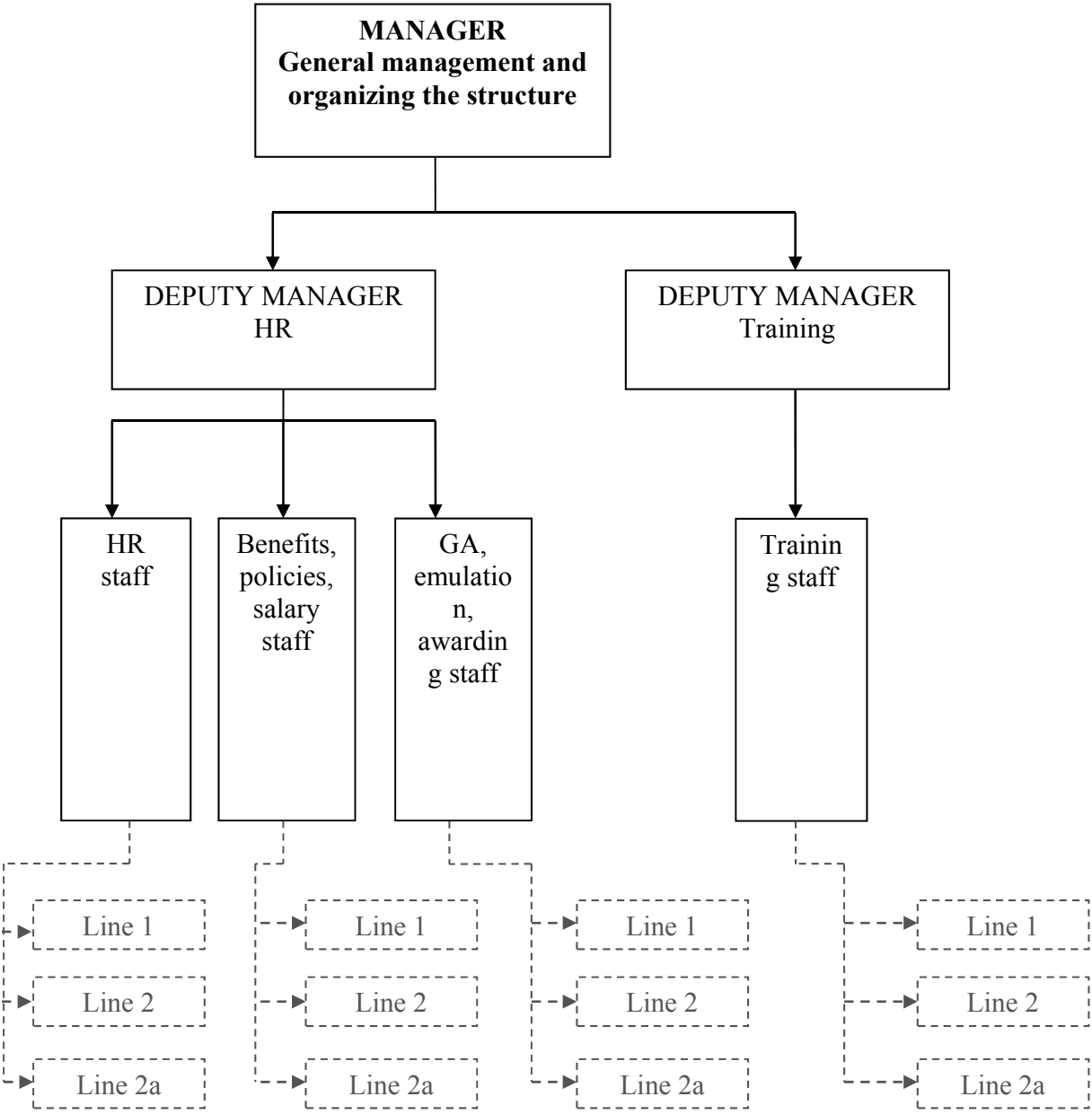
- *Organized number:* 07 pax

In which: Manager: 01 pax

Deputy Manager: 02 pax

Staff: 04 pax

- **Organization structure:**



———— Initial stage when operating only one (1) line
 - - - - - Operating multi-lines

ACCOUNTING – FINANCE DEPARTMENT**1. *Financial tasks*****【Budget】**

- Develop financial plan, loan plan, short-term/mid-term/long-term debt repayment plan.
- Organize, monitor, control financial system, cash flow of the company.
- Manage budget

【Finance】

- Make regular/irregular financial analysis reports, analyze and forecast financial results.
- Study on solutions, unique mechanisms and policies to ensure the financial stability in long term.
- Monitor and control all financial aspects of annual investment plans.

【Others】

- Develop regulations, rules of Departments/boards.
- Develop internal payment procedures, settlement procedures of the Company.
- Works relating to formation and implementation of insurance programs.
- Develop quality system, plan, and organize the implementation of finance-related plans
- Develop strategies, plans, solutions, and organize the implementation of receiving UR lines in terms of finance.

2. *Accounting***【Accounting, budget】**

- Manage accounting system
- Keep account of revenue, debts, profits, tax, etc.

- Keep account of business results.
- Activities relating to the making of financial statement, cash flow statement, balance sheet, Income statement, financial statement description.
- Manage and develop annual plans on income and expenses
- Control proposals on expenses and investment of each department.
- Tasks relating to subsidy policies, fare level, fare adjustment (in terms of finance).

【Fund, settlement】

- Management of bank account, cash fund (input, withdraw, bank remittance, petty cash)
- Check and store accounting documents, accounting books
- Develop procedures of internal payment and settlement of contracts
- Control requests for payment from Departments
- Tasks relating to declaration and payment of taxes

【Others】

- Planning, coordinate in auditing tasks
- Tasks relating to Company's accounting IT system establishment
- Provide documents, information for competent related parties

2. *Management of assets, materials and contracts*

【Management of materials】

- Manage fixed assets (in terms of value, depreciation calculation, etc.)
- Manage materials (stocking, inventory, damages, etc. in terms of value)

【Management of contracts】

- Manage procedures of procurement, hiring, vendors

- Management of contracts: Develop procedures, financial conditions for projects, contracts of the Company, participating in contract negotiation, contract adjustment, etc.

SIGNALING, TELECOMMUNICATION AND ELECTRICITY MAINTENANCE DEPARTMENT

1. FUNCTIONS AND RESPONSIBILITIES IN HQs

- **I) Functions:** Provide advices, implement managerial functions for maintenance, replacement and procurement of equipment, devices (including electricity, E&M and signaling, telecommunication ones)
- **II) Responsibilities:**
 - 1 – Evaluate procedures, training plans, maintenance plans, plans for replacement, procurement of equipment/devices submitted by OUs on the basis of standards of each line respectively.
 - 2- Negotiate and request for submission (submit to Company’s Board of Directors) with competent related authorities.
 - 3- Implement activities relating to procurements, commission contracts of maintenance and replacement of equipment.
 - 4- Compile and develop general regulations on equipment maintenance
 - 5- Compile and amend plans of maintenance, replacement and procurement of equipment.
 - 6- Work out procedures about maintenance, replacement and procurement.
 - 7- Monitor, check, evaluate and manage maintenance, replacement, upgrading of equipment which are implemented by OUs.
 - 8- Coordinate to handle with tasks of preventing, investigating and reporting about incidents.
 - 9- Statistic incidents, organize to analyze, check on technical issues and develop procedures to handle with incidents
 - 10- Develop plans on demands for electricity supply.

- 11- Evaluate on cost estimate, prices of fixing or replacing equipment/devices
- 12- Coordinate and manage activities relating to requirements for material provision, using spare parts among lines.
- 13- Coordinate in managing and circulating maintenance personnel among lines as per requirements
- 14- Other tasks assigned by leaders

2. FUNCTIONS AND RESPONSIBILITIES OF OU'S MAINTENANCE SECTOR

- **I) Functions:**
 - OUs are responsible for directly conducting maintenance works in compliant with regulations and procedures of the Company
- **II) Responsibilities:**
 - 1- Prepare detail maintenance plan for line equipment which is under responsibility of respective OU.
 - 2- Develop maintenance, replacement procedures for line equipment/devices.
 - 3- Develop plan to implement profession-related works
 - 4- Develop plans about electricity demand during line operation.
 - 5- Prepare detail plans about demand for replacement, procurement and upgrading of equipment
 - 6- Develop list of equipment to be replaced, procured and upgraded.
 - 7- Develop and report about investigation works, preventing and handling with profession-related incidents.
 - 8- Statistic incidents, analyze and complete equipment functions
 - 9- Prepare plan about regular maintenance and replacement for equipment.

- 10- Estimate proposed bidding price, commission contracts relating to maintenance and upgrading of equipment.
- 11- Develop and complete equipment maintenance regulations.
- 12- Prepare plan to train equipment maintenance staff.
- 13- Other tasks assigned by leaders.

ROLLING STOCK MAINTENANCE DEPARTMENT

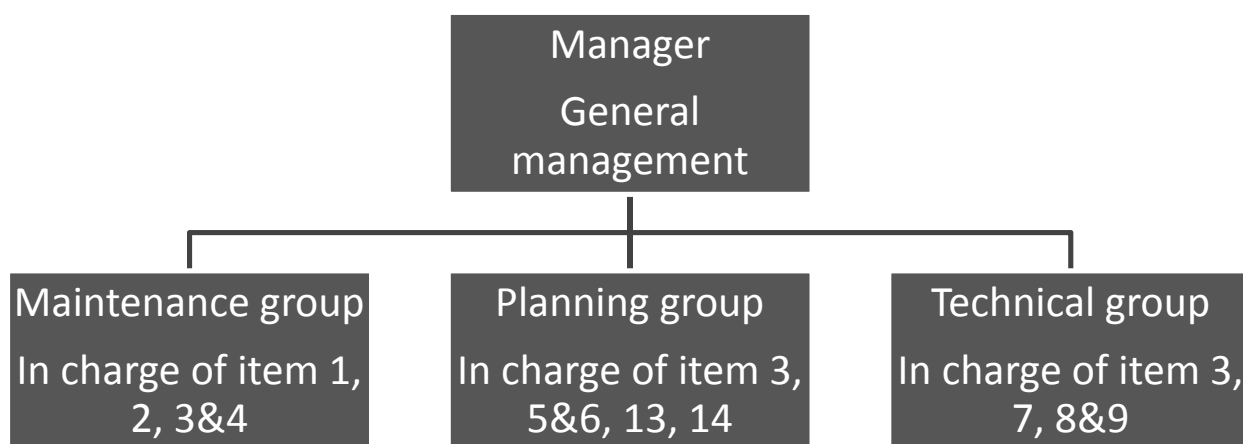
Management sector (RS maintenance department):

I) Functions: Provide advices, implement managerial functions about maintenance, replacement, procurement of RS for Company HQs.

II) Responsibilities:

- 1 – Develop regulations/rules, procedures about RS maintenance.
- 2- Evaluate procedures and plans on fixing, maintenance, replacing RS, based on technical specifications of each line.
- 3- Monitor, evaluate and manage the maintenance, replacement of RS in all lines.
- 4- Tasks relating to request to approval of competent authorities in terms of works under respective profession
- 5- Based on provided quota, evaluate the cost estimate for maintenance and fixing expenses for RS.
- 6- Coordinate in implementing bidding works, commission contracts relating to maintenance and replacement of RS.
- 7- Statistic incidents, organize to analyze and check in terms of technical issues, and develop procedures of incident handling.
- 8- Organize to study, implement works relating to new design and improvement of train cars, and any equipment which are relative to RS maintenance, and new technologies.
- 9- Works about investigation and studies which are related to repair and improvement of checking method, and RS repairing method.
- 10- Coordinate and manage works relating to requirements for materials provision, and utilization of spare parts among lines.
- 11- Coordinate to manage and circulate maintenance manpower among lines as per respective requirements.
- 12- Noticing about assigned tasks.
- 13- Develop master plan to receive UR lines in terms of technology.
- 14- Propose about the delegation and delegating contents (between HQs and OUs) regarding procurements.

At the timing of Line 2A opening, item 10 and 11 will not have been started. Thus, estimated number of staff in RS maintenance department at the opening of Line 2A (4 pax) shall be grouped as following:



OUs:

I) Functions:

1- OUs are responsible for directly implementing maintenance for RS, in compliant with regulations and procedures of the Company

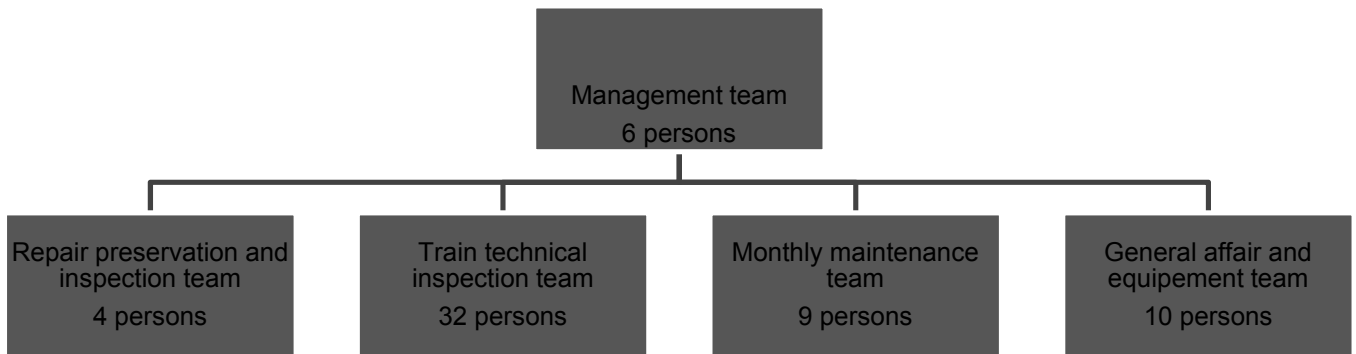
II) Responsibilities:

- 1- Develop procedures, plans for maintenance and replacement of RS in compliant with technical standards.
- 2- Be responsible for implementing, managing the implementation and inspection on maintenance, replacement of RS, ensuring train operation quality as regulations.
- 3- Be responsible for repairing and restoring trains, providing trains in good conditions for operation purpose
- 4- Coordinate in taking over of RS after complete maintenance, and verifying the status of damaged/failure trains.
- 5- Statistic incidents, analyze and complete equipment functions
- 6- Study and propose maintenance and replacement budget, ensuring safe and effective maintenance for lines, and submit for approval of HQs.
- 7- Activities relating to formation of proposed bidding prices, proposed commission contracts for maintenance and upgrading train cars.
- 8- Activities relating to demand for provision of necessary materials
- 9- Activities relating to amending and storing related documents and tables.
- 10- Develop personnel plan for maintenance sector in OUs.
- 11- Activities relating to proposals, implementation of designs, manufacturing, upgrading train cars and equipment which are in relationship with maintenance of cars.

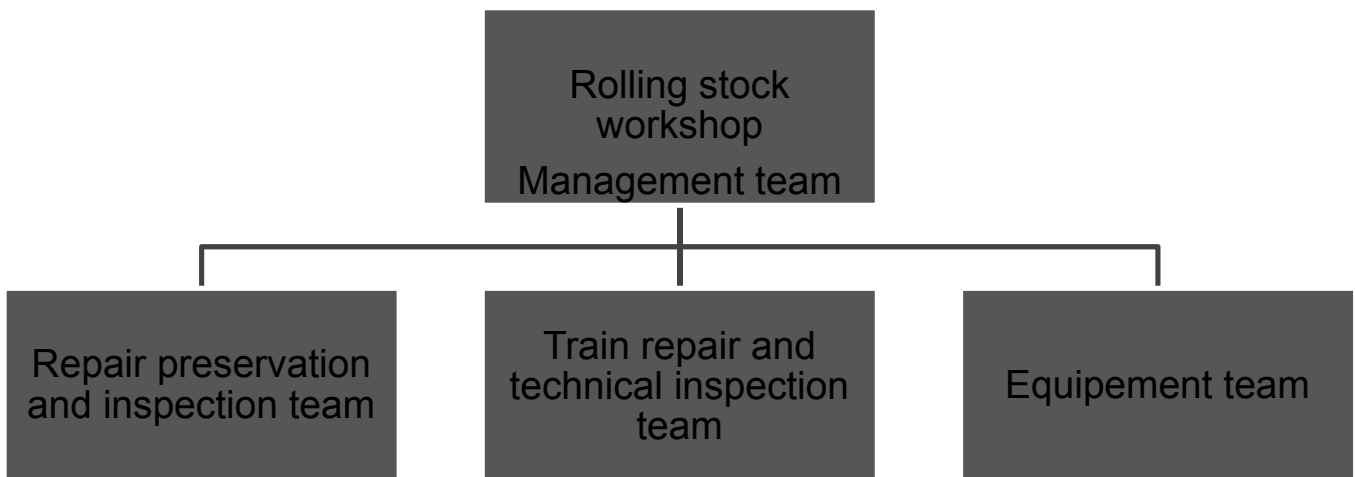
Staff planning for train maintenance operation for Line 2A

Under the current plan, the number of staff for train maintenance operation for Line 2A is 61.

On-bogie repairing workers who are involved in disassembly of train shall be allocated after three years of operation.



Proposal on maintenance organization model for each line



PLANNING DEPARTMENT

1. Functions:

- Consult motto, business direction of the entire company.
- Advise strategy, roadmap, general development plans of the Company;
- Advise to promote investment-business of the Company.
- Advise on decentralization and implementation of the projects – investment of the company (management of contract and bidding activities)

2. Tasks:

2.1 Planning activities:

- Develop business philosophy of the company
- Develop master plan for the entire company on the basis of the plan established by other departments
- Develop annual, quarterly, and monthly transport plans (business plan)
- Manage part procurement and repair plans of the company
- Make project investment plans of the project
- Supervise and speed up implementation and management of general plans and strategies of the company
- Evaluate the business plan proposed by the Sales Department

2.2 Bidding activities

- Preside over making bidding plan for the entire company
- Preside over organizing bidding activities of the company
- Preside over negotiating and signing contracts of the company
- Manage implementation progress of the company's contracts
- Coordinate and manage advance payment and settlement of the company's contracts

2.3 Project investment

- Propose and set up investment projects of the company
- Mobilize fund sources to implement projects
- Prompt and manage schedule and plans of construction investment projects

2.4 Fund source management (to be considered whether Financial division or Planning division is responsible)

- Develop and manage the company's fund source annually, quarterly, monthly

- Preside over adjustment and supplement annual fund source of the company

2.5 Reporting activities

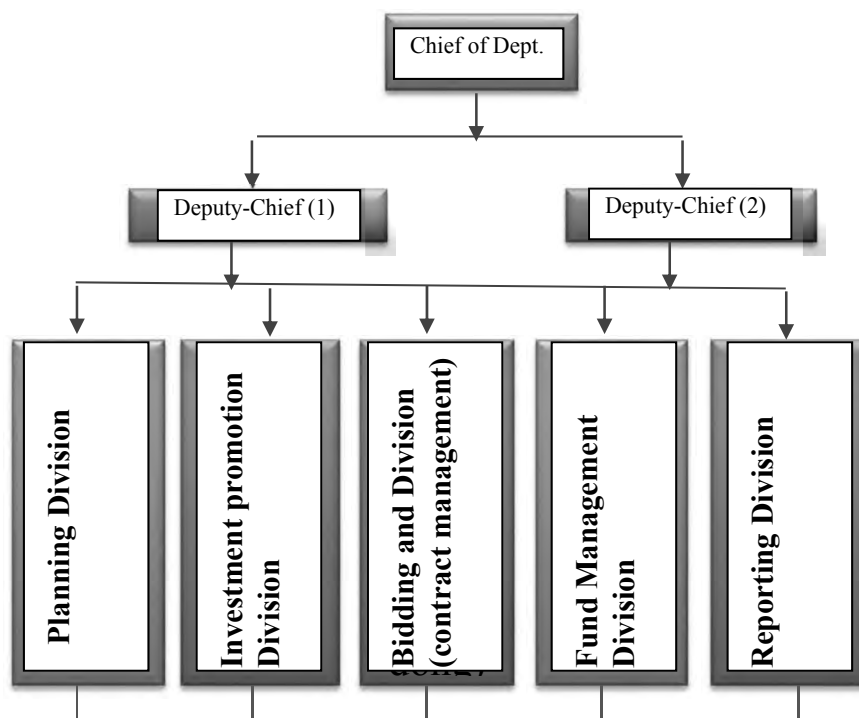
- Preside over and coordinate with the relevant agencies to carry out reports as regulated by the State, the City, and sponsors (if any)
- Prepare annually, quarterly, and monthly summary reports, and extraordinary reports (if any)
- Prepare reports and inform conclusions of meeting on implementation of annual plan and summary of annual plan

2.6 Other activities

- Coordinate with departments in the company to perform unexpected duties
- Other tasks assigned by the Company’s Leader

IV – Organization chart of Planning and Investment Department:

Number of staff, estimated to June 2015 and 3-7 persons.



Note :

- Directive relationship : —————>
- Colleague relationship : —————

SALES DEPARTMENT

1 – Functions and tasks of Sales Department (HQ)

1.1 Function:

- (1). Advise, make strategies, plans and business plans, investment plans of the Company, including fare business and non-fare business.
- (2). Advise on development and enhancement of the company's image, providing convenient services to customers, training staff to provide convenient services and advertising its images.

1.2 Tasks:

a. General tasks

- (1). Build up overall plan, including fare and non-face business.
- (2). Preside over sales activities of the company, implementation of investment plans and strategies.
- (3). Coordinate to organize related bidding activities
- (4). Build up regulations and internal processes of the sales division
- (5). Coordinate to set up management processes of money collected from fare business
- (6). Draft, implement and manage activities related to business activities
- (7). Direct and manage site operation units about works related to business operations and public relations.
- (8). Coordinate to make staffing schedule for site operation units (sales division)

b. Fare business

- (9). Investigate and study on transportation demand of each station and each line.
- (10). Set up and manage fare policies and fare price systems
- (11). Be in charge of investment, issuance and management of ticket ID card
- (12). Carry out cost estimation and settlement between passenger flow and fare revenue.

c. Non-fare business

- (13). Research on investment and construction of infrastructure surrounding the station, and other transport modes (bus, taxis, bicycles, etc.)
- (14). Preside over management and implementation of advertisement business activities on the line, along the line, in the station, inside and outside of rolling stocks.
- (15). Preside over management and implementation of real estate business, kiosks rental in the station and surrounding the station (if any) etc.
- (16). Search and select partners in non-fare business activity
- (17). Implement materials procurement plans for operating urban railway system based on preparation and appraisal by departments.

d. Public Relations

- (18). Make plan and option to implement public relation activities (build up and enhance image of the company, provides convenient services for customers, train staff to provide service convenience and image popularization)
- (19). Receive and handle feedback/ critique of customers, improve the quality of business services
- (20). Develop standards for behavior manners towards passengers
- (21). Perform other duties assigned by the company leader

2- Functions and tasks of sales team (station division under OU)

2.1 Function

- (1). Advise and carry out statistical work and investigation on passenger transport
- (2). Advise and implement company image development, improve passenger service quality

2.2 Tasks

- (1). Perform ticket issuance and revocation, collection of ticket selling money
- (2). Perform guiding passengers, ensuring safety as well as normal when problem happens.
- (3). Conduct the search, management and delivery of lost items
- (4). Perform tasks related to hygiene in the station and on the train
- (5). Coordinate with HQ to organize events, programs, workshops, etc. related to promoting and improving the image of the company
- (6). Perform emergency aid when incident or accident occurs in the station

3 –HQ and OU organization charts

3.1 Sales Department organization chart (HQ)

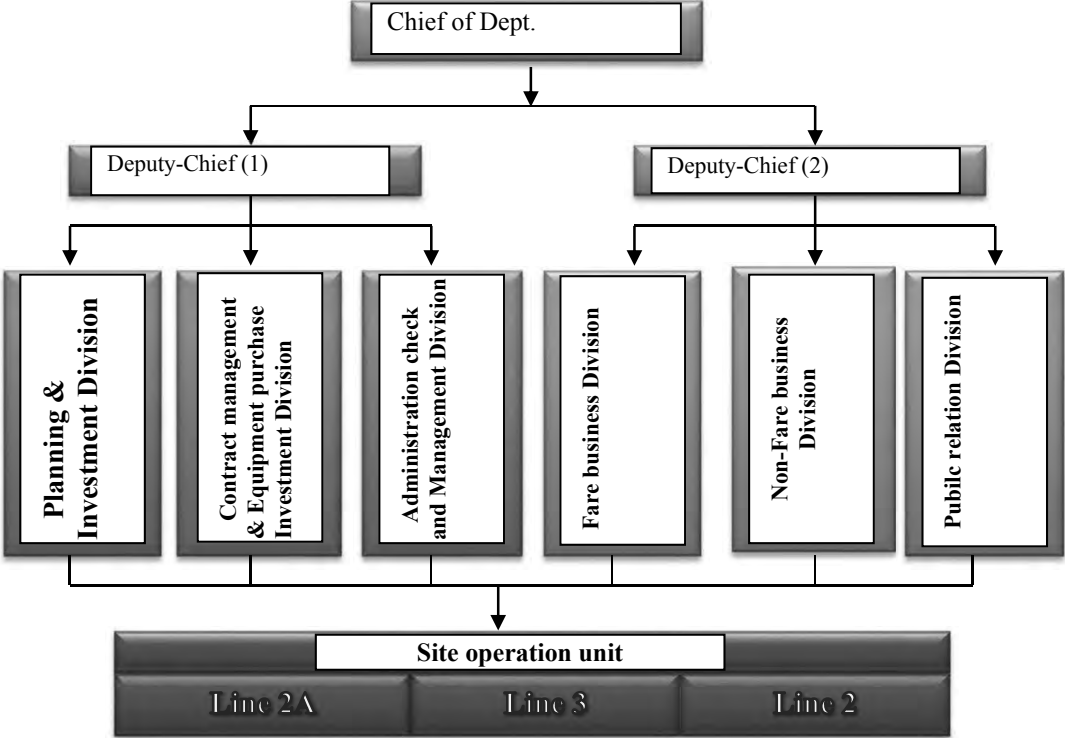


Figure 1. Sales Department organization chart (HQ)

3.2 Sales Division organization chart (station division) (OU)

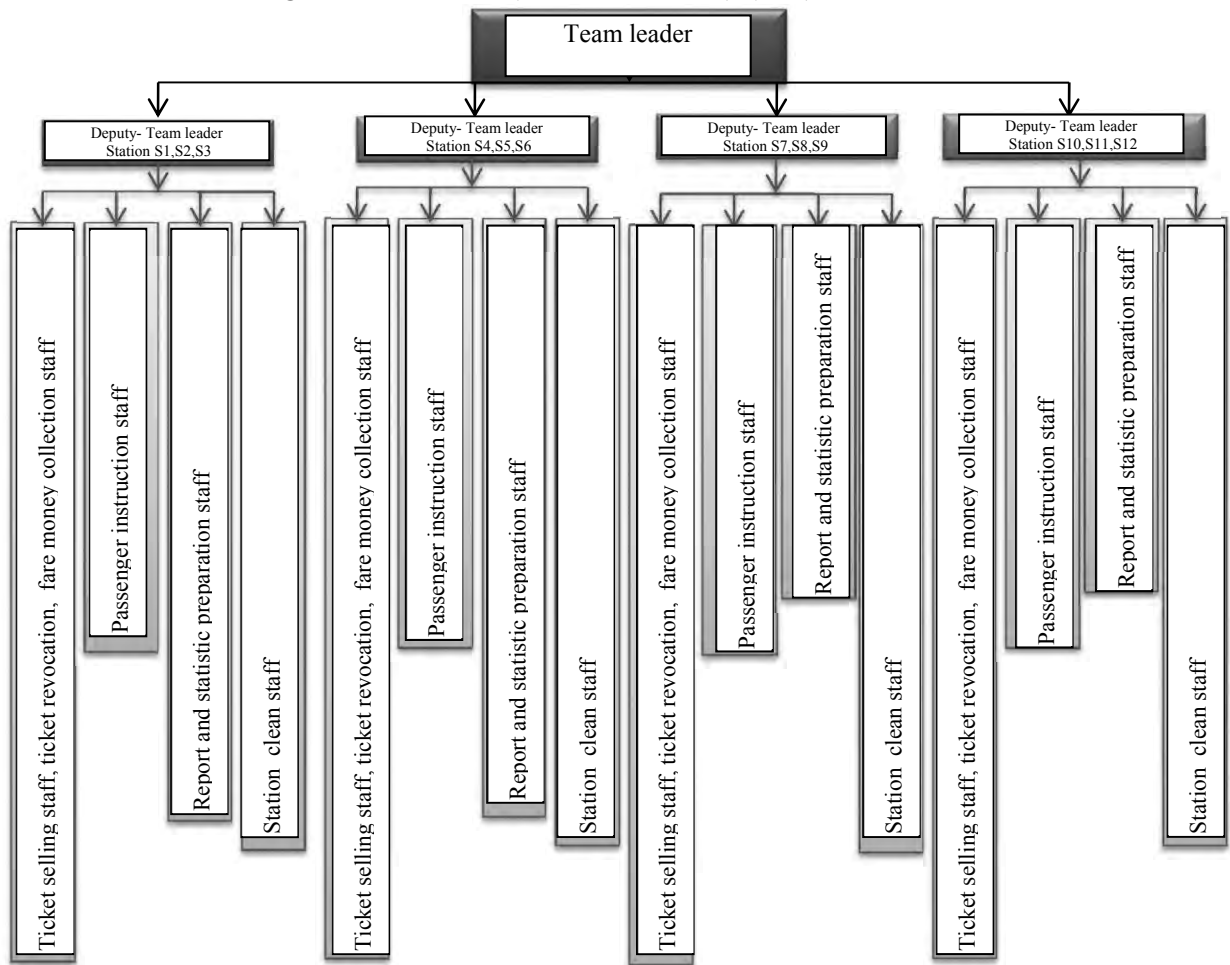


Figure 2. Sales Division organization chart (Station Division) (OU)

3.3 Illustration of sales division tasks (Station division) (OU)

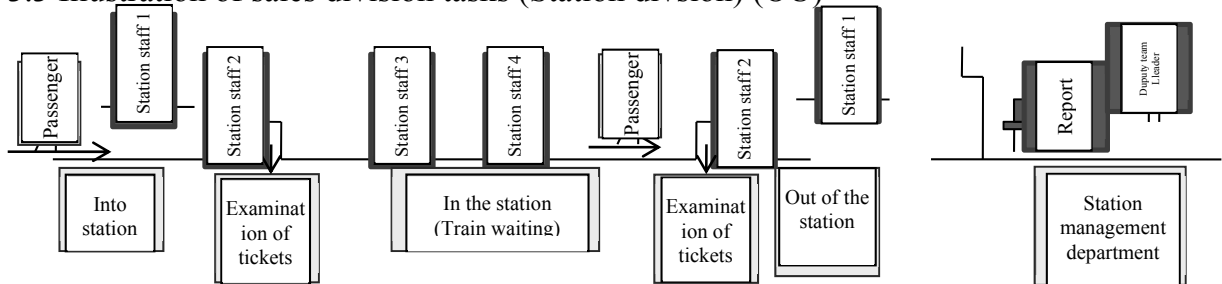


Figure 3. Illustration of sales division tasks (Station division)

- 1- Staff 1 (NV1): performs ticket selling and money collecting
- 2- Staff 2 (NV2): performs passenger instruction (buying ticket, safe on-board, finding route information, and fare collection, handling when trouble happens and luggages lost
- 3- Staff 3 (NV3): performs warning task when train is arriving and departing, informs warning issues related to safety/guiding passengers when changing/transisting and handling trouble happens and luggages lost

4- Staff 4 (NV4): performs cleaning in the stations

5. Deputy Team leader: general manages daily works and make daily report (Staff 2 and 3 shall be in charge of safty warning, passenger guiding and first aid handling when accident occurs etc.)

4 – Proposal on operation functions of the Company

4.1 – Main operation functions

- Operation of urban railway transportation services and other transportation services

- Manage, operation, maintenance and repairs of urban railway transportation services

(At the initial stages, the services are provided on one line only which will be expanded to other lines in the future)

- Advise, research and develop facilities and parts for urban railway transportation services.

- Advise on investment on construction of urban railway.

- Train staff for urban railway transportation services such as train drivers.

4.2 – Other non-fare businesses

- Real estate business (Leasing shops and locations)

- Operating parking lots

- Marketing advertisings

CIVIL WORK MAINTENANCE DEPARTMENT

I. Headquarter:

1) Function:

- Advise and perform management functions for civil work maintenance

- Advise and perform functions on civil work study

(Maintenance work includes inspection maintenance, repair, improvement, and replacement)

2) Task:

- Manage inspection tasks of OUs.

- Appraise maintenance plans of OUs.

- Make general maintenance plan for the entire line.

- Perform bidding task, entrusted contracts related to maintenance of lines.

- Make maintenance staffing schedule of OUs.

- Appraise maintenance procedures of OUs

- Appraise design, maintenance costs of OUs.

- Manage material supply, usages of spare parts and accessories of OUs.

- Monitor, test and accept maintenance tasks and manage maintenance tasks of OUs.

- Establish rules and build up systems of technical standard and technological process for civil work maintenance
- Ask for approval of competent level relating to civil work maintenance
- Analyse and identify trouble and built up troubleshooting measures.
- Works related to improve methods of inspection and maintenance.
- Works related to design and improvement of equipment for civil work maintenance.

3. Number of staff: 04 persons

II. Site operation units (OU):

1) Functions:

Site operation unit shall be responsible to directly carry out civil work maintenance in compliance with rules and procedures of the Company.

2) Tasks:

- Perform inspection of OU.
- Develop, report, and ask for approval of maintenance plan of the OU.
- Prepare and ask for approval of bidding plan, entrusted contract relating to maintenance.
- Advise and propose bidding work and entrusted contract relating to maintenance of OU.
- Propose maintenance staffing schedule of OU.
- Design work and determine maintenance costs.
- Determine demands of supplying materials, spare parts and accessories of OU.
- Perform maintenance, monitor and accept internally maintenance activities.
- Coordinate with HQ to accept completed and not yet completed maintenance activities.
- Do statistical work of accidents, analyse and express comments on incident to headquarter.
- Propose to improve equipment related to maintenance

3. Number of staff: **28 persons**

SAFETY AND QUALITY DEPARTMENT

1. Function: Advise and carry out function of operation safety and safety of other project/business investment activities.

2. Tasks:

** Safety:*

- (1) Develop safety policies, rules, and plans for the Company.
- (2) Evaluate safety plan from the Departments /Boards of the Company and OUs.
- (3) Evaluate programs, projects and plans in aspect of safety.
- (4) Supervise, evaluate and control safety management executed by the Departments, Boards of the Company and of OUs.
- (5) Classify level of decision-making in the organization, manage and handle safety.
- (6) Participating in handling of accident and incident according to the company's regulations.
- (7) Develop plans, solutions and implement reception of urban railway projects completed in aspect of safety.
- (8) Prepare documents, explain responsibilities and ask for approval of the contents relating to the department tasks, including presiding over application to ask for license of safety.
- (9) Provide appropriate information promptly to the Board of Members, the Board of Control of the Company.
- (10) Make report on the assigned tasks

** Quality*

- (1) Develop quality policies, rules, and plans for the Company.
- (2) Evaluate quality plan from the Departments /Boards of the Company and OUs.
- (3) Supervise, evaluate and control quality management executed by the Departments, Boards of the Company and of OUs.
- (4) Classify level of decision-making in the organization, manage and handle quality.
- (5) Develop plans, solutions and implement reception of urban railway projects completed in aspect of quality
- (6) Prepare documents, explain responsibilities and ask for approval of the contents relating to the department tasks, including presiding over application to ask for license of quality (when regulated or requested)

(7) Provide appropriate information promptly to the Board of Members, the Board of Control of the Company.

(8) Công tác Báo cáo về các nhiệm vụ được giao.

* Other tasks assigned by the General Director.

3. Number of staff: 3-6 persons

TRAIN OPERATION DEPARTMENT

I) Function: Advise and execute function of dispatch, train operation management, ensuring absolute safety, punctuality and effectiveness in operation.

II) Tasks:

(a) Operation planning section

(1) Make train operation schedule

(2) Make train operation diagram for lines.

(3) Make training plans and process; supervise and examine train drivers and operation staff.

(4) Check compliance and qualification of staff relating to train driving.

(5) Coordinate and alternate train operation staff among Lines.

(b) Transport section

(6) Investigate, study and improve train operation schedule.

(7) Inform and report to the concerned agencies regarding the assigned task.

(8) Directly manage, control and evaluate control centers of the lines. Coordinate with OU and other related units to handle train operation troubles.

(9) Study to establish OCC for all lines.

(c) Operation-safety section

(10) Supervise, evaluate and manage operation management performed by OUs.

(11) Build up manuals of regulations/standards on train operation safety for operation staff.

(12) Make plans of new setting and improvement of security equipment to ensure train operation safety and trouble prevention.

(13) Conduct prevention, investigation and reporting of natural disasters, rail incidents, etc.

(14) Conduct works relating to making basic plan of facilities and transport equipment (except equipment to ensure safe operation), and make implement plan then implement that plan.

Number of staff in Train operation department (HQ)

Devision/position	Number	Remark
-------------------	--------	--------

Chief of train operation department	1	
Deputy chief of train operation department	2	
Train operation schedule	2	
Train operation	2	
Train operation - safety	2	
Total	9	

Functions and responsibilities of OCC staff

1. Ensure safe and effective train operation, monitor and control whole situation of the train operations.
2. Execute operations related to ensuring safety distance of each train through command system in case security system devices are malfunctioning.
3. Monitor and operate electric power supply system and electric power allocation system.
4. Resume normal operation system as diagrammed.
5. Execute operation related to emergencies such as accidents and transportation system troubles.
6. Monitor troubles of station facilities and facilities along a railway and report such troubles to related sections.
7. Execute operations related to closing railways and arranging maintenance car works.
8. Execute operations related to closing lines.
9. Execute operations as directed by president of Hanoi Metro One Member LLC or any responsible sections .

RAIL FACILITIES MAINTENANCE DEPARTMENT

I) Function of Rail Facilities Maintenance Department of HQ

- (1) Advise and execute controlling function in relation to rail facilities maintenance.
- (2) Advise and execute functions in relation to research and development of rail facilities.

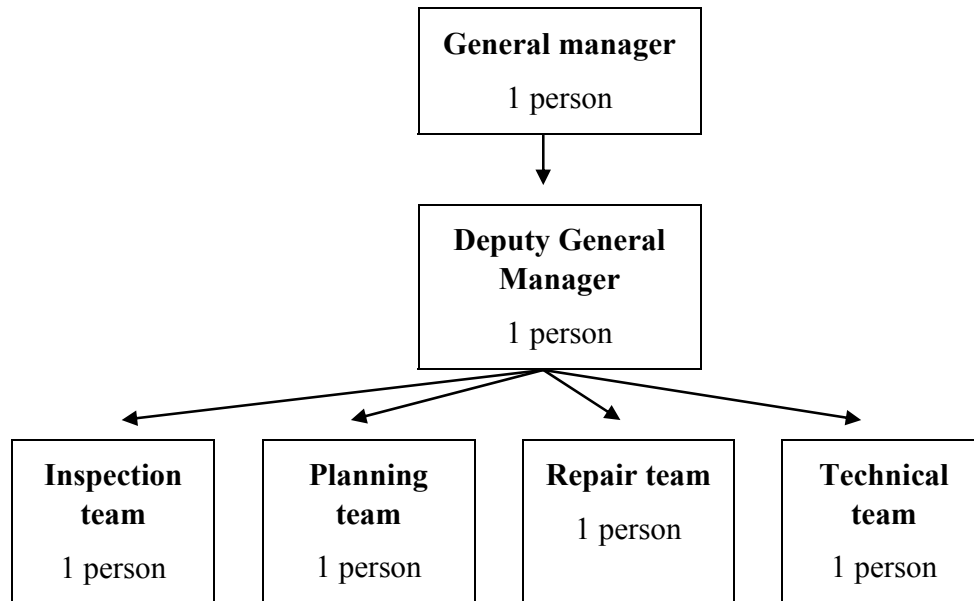
(Maintenance includes works for securing, repairing, improving and revising)

II) Responsibilities of Rail Facilities Maintenance Department of HQ :

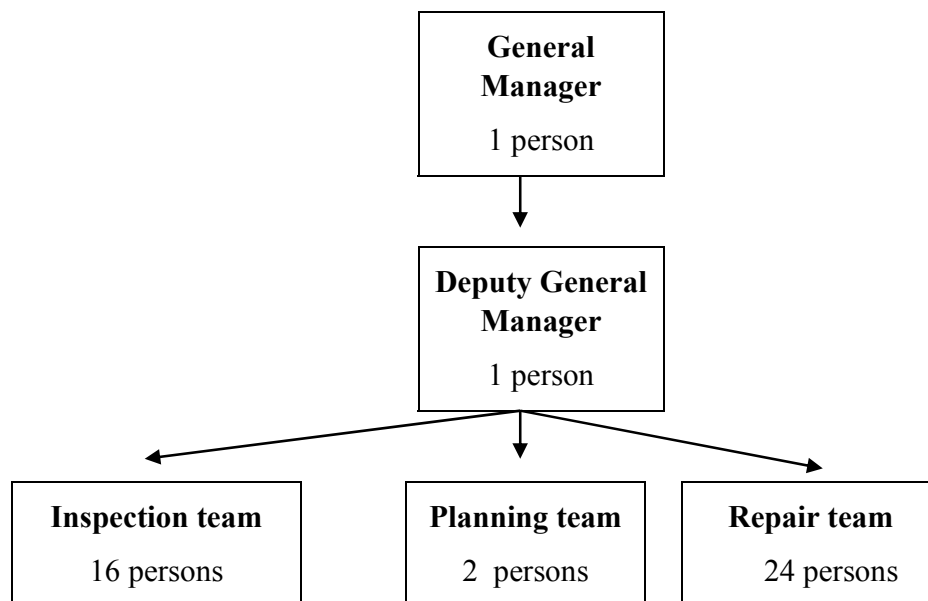
- 1 - Plan various rules, technical standards, and technology process systems for rail facilities maintenance.
- 2- Review processes and plans on rail facilities maintenance based on the technical standards of each line.
- 3- Supervise, review and manage rail facilities maintenance of each line.
- 4- Execute operation in relation to approval application of jurisdiction for rail facilities maintenance.
- 5- Review costs for planning and maintenance of rail facilities.
- 6- Execute operations in relation to tendering and contracting of rail facilities maintenance.
- 7- Execute operation in relation to technical inspection, analyzing and finding technical troubles, and preparing countermeasures for technical troubles.
- 8- Execute operation in relation to planning and improving facilities for rail facilities maintenance.
- 9- Research on improving inspection and maintenance process.
- 10- Prepare plans, measures and organization for accepting maintenance operation from each line.
- 11- Coordinate and control demand for supply of materials and use of parts between each line.
- 12- Manage and rotate maintenance staff between each line as needed.

III) Organization chart of rail facilities management department (for HQ and OU)

1) Headquarter (HQ)



2) Operating Unit (OU)



Note :

Headquarter (HQ)

- General Manager is in charge of both HQ and OU and is capable of delegating his/her power to Deputy General Manager at the time of his/her absence.
- Deputy General Manager is in charge of each team of HQ and OU and administer operations and report to General Manager. DGM is capable of delegating his/her power to each team leader at the time of his/her absence.
- Each team leader is responsible for daily operation of both HQ and OU and for reporting to General Manger and Deputy General Manager.

Operating unit (OU)

- General Manager is in charge of OU and is capable of delegating his/her power to Deputy General Manager at the time of his/her absence.
- Deputy General Manager is in charge of each team of OU and administer operations and report to General Manager of OU. DGM is capable of delegating his/her power to each team leader at the time of his/her absence.
- Each team leader is responsible for daily operation of his/her OU and for reporting to General Manger and Deputy General Manager of relevant OU.

Five-year Business Plan

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I – Grounds

- Railway Act No. 35/2005QH11 dated June 14, 2005,
- Enterprise Act No. 68/2014/QH13 dated November 26, 2014,
- Real Estate Business Act No. 66/2014/QH13 dated November 25, 2014,
- Advertisement Act No. 16/2012/QH13 dated June 21, 2012,
- A written decision No. 6266/QĐ-UBND by HPC dated November 27, 2014 concerning the establishment of Hanoi Metro One Member Limited Liability Company,
- A written decision No. 4694/QĐ-UBND by HPC dated June 15, 2015 concerning the approval of the articles of incorporation of Hanoi Metro One Member Limited Liability Company in terms of its organization,
- Finance rules enacted in accordance with written decision No. of Hanoi Metro One Member Limited Liability Company,
- A corporate philosophy approved and enacted in accordance with written decision No. ○○ dated ○ of Hanoi Metro One Member Limited Liability Company,
- A long-term vision approved and enacted in accordance with written decision No. ○○ dated ○ of Hanoi Metro One Member Limited Liability Company,
- A 30-year business plan approved and enacted in accordance with written decision No. ○○ dated ○ of Hanoi Metro One Member Limited Liability Company

II – Direction, Goal

2.1 Direction

- 2016: Establishment of a company management system, and reception and opening of the 2A Line Cat Linh-Ha Dong
- 2017: Development of the related businesses and the operations along the railway lines, and preparations for the reception of the No. 3 Line Nhon-Ga Ha Noi
- 2018: Reception of the No. 3 Line Nhon-Ga Ha Noi, and preparations for the reception of the No. 2 Line Nam Thang Long-Tran Hung Dao
- 2019: Reception and opening of the No. 2 Line Nam Thang Long-Tran Hung Dao
- 2020: Preparations for the reception of the other planned lines

2.2 Goal

- Goal
 - + Income:VND/2016
- Key performance indicator (KPI)
 - + Number of major accidents: 0
 - + Train delay on average: ○○ minutes or less
 - + Number of passengers exceeding the estimate:
 - + Number of stations where related businesses are conducted (advertisements and stores):

III – Method

Summary, analysis and evaluation of the market and the products to be provided

3.1 Estimated transition of Hanoi's GDP in 2016-2020 (Appendix 5)

3.2 Estimates of the Hanoi population, tourists and demand for passenger transportation in 2016-2020 (Appendix 6)

3.3 Estimates of the flow rate of passengers using the Cat Linh – Ha Dong Line, No. 2 Line Nam Thang Long-Tran Hung Dao, and No.3 Line Nhon-ga Ha Noi (Appendix 7)

IV- Content of the plan

4.1 Income and expenditure plan

No.	Content	Year					Remarks
		2016	2017	2018	2019	2020	
1	Income						
a.	<i>Operating income</i>						
a.1	<i>Fare-based operation</i>						
a.2	Related operations						
b.	Income from the sale of equipment (in case of arrival of the end of useful life or unrecoverable failure)						
2	Train service/maintenance cost						
a.	Personnel cost (wages, etc.)						
b.	Electrical charge						
c.	Parts cost (equipment repair)						
d.	Related operations cost						
e.	Other						
3	Depreciation						

No.	Content	Year					Remarks
		2016	2017	2018	2019	2020	
a.	Structures						
	Elevated section						
	Underground section						
b.	Purchase/installation of electric machinery						
c.	Cars						
d.	Replenishment/recovery (purchase and installation of cars and electric machinery)						
4.	Net profit or loss before tax						
5	Net profit or loss after tax						

4.2 Fund allocation plan

No.	Department	Year					Remarks
		2016	2017	2018	2019	2020	
1	General affairs department						
2	Organization/education						
3	Safety/quality						
4	Sales/public relations						
5	Planning/project						
6	Train service						
7	Cars						
8	Technical/maintenance						
	Total						

4.3 Plan - safety -

No.	Method	Year					Basic content	Remarks
		2016	2017	2018	2019	2020		
1	Education						Educate repair staff with high skills in train service and management.	
2	Inspection, evaluation							- Before the opening, inspect and evaluate all facilities and systems. - Inspect systems such as safety, fire protection and security
	Civil engineering structures							
	Equipment							
	Systems							
3	Adjustment, addition							

4.4 Strengthening of the company (Strategy 1)

No.	Method	Year					Basic content	Relationship with the long-term vision
		2016	2017	2018	2019	2020		
1	Establishing a company management structure	⇒		⇒	⇒		To receive and operate the 2A Line, No. 3 Line and No. 2 Line, establish a company management structure.	1
2	Receiving the 2A Line	⇒					Development of the delivery plan, and construction of a management structure. Safely and stably operating the line.	
3	Receiving the No. 3 Line			⇒			Formulation and implementation of a reception plan	
4	Receiving the No. 2 Line				⇒		Formulation and implementation of a reception plan	
5	Human resource education						OJT. Formulation of a staff cultivation plan.	
		⇒					Implementation of the new plan Make adjustment as necessary	

4.5 Marketing (Strategy 2)

No.	Method	Year					Basic content	Relationship with the long-term vision
		2016	2017	2018	2019	2020		
1	Awareness raising	→					Holding an event in cooperation with the government, HPC, etc.	1
2	Evaluation raising	→					Monitors, celebrities, website	
3	Evoking the need	→					Event at a station Conducting trial ticket distribution	
4	Firmly establishing the need	→					Other media (TV, radio, newspapers, etc.)	
5	Providing opportunities to use the railway lines	⇒	⇒	⇒	⇒		Advertise the lines by holding an event at a commercial and industry center near the station and in the new city center. Sell train tickers outside the station in cooperation with other companies.	

4.6 Fare (Strategy 3)

Order	Measure	Year					Basic content	Relationship with the long-term vision
		2016	2017	2018	2019	2020		
1	Fare	⇒					Setting an appropriate fare	1
		→					Studying a discount or preferential treatment for regular customers	

4.7 Collaboration with other forms of public transportation (Strategy 4)

Order	Measure	Year					Basic content	Relationship with the long-term vision
		2016	2017	2018	2019	2020		
1	Collaboration						Negotiation with a bus company and a taxi company	1
2	No. 3 Line No. 2 Line						Negotiation with related organizations	
							Formulation of a plan for receiving the No. 3 and No. 2 Lines	
							Improvement of each stations (e.g., station square)	
	Decrease in individual transportation means						Studying and plan formulation between the government and HPC	
							Development	

4.8 Related businesses (stores, advertisement, IT) (Strategies 5, 6, 7)

Order	Measure	Year					Basic content	Relationship with the long-term vision
		2016	2017	2018	2019	2020		
1	Stores in stations						Market research	1
							Studying an activity method	
							Install facilities of stores	
							Implementation, improvement	
2	Advertisement						Installation of facilities for advertisement	
							Implementation, improvement	
	IT						Study and installation of necessary facilities	
							Implementation, improvement	

4.9 Attracting customers using stores in the station yard (Strategy 8)

Order	Measure	Year					Basic content	Relationship with the long-term vision
		2016	2017	2018	2019	2020		
1	Stores in station yard	→					Studying a preferential treatment	1
				→			Implementation, improvement	
	Collaboration with other means of transportation	→					Studying a preferential treatment for passengers using both the railway and other means of transportation	
			→				Planning a parking lot construction research project	
				→			Implementing the construction	

4.10 Human resource plan

Order	Measure	Year					Basic content	Relationship with the long-term vision
		2016	2017	2018	2019	2020		
1	Employment	→					Formulation of an employment policy	3
			→				Implementation, improvement	3
2	Education	→					Formulation of an education plan	3
			→				Implementation, improvement	3
	Salaries and mentions	→					Studying an incentive for employees	3
			→				Implementation, improvement	3

4.11 Plans of each departments

Order	Measure	Year					Basic content	Relationship with the long-term vision
		2016	2017	2018	2019	2020		
								1

IV - Appendixes

Appendix 1 Corporate philosophy

Slogan: Always run with the capital

- Our mission is to continue to contribute to the development of the capital by reforming the metropolitan transportation system, constantly adopting the state-of-the-art technology, and providing the most convenient service.
- We fulfill the responsibility to our customers, employees, partners and society.
- We create and develop Hanoi Metro, which is a modern, cultural and cohesive company, by providing a perfect and convenient passenger transportation service, and conducting transparent and fair operational activities.

Management policy

For our customers, we:

- Operate the metropolitan railway lines that are familiar to and used by people through a safe and comfortable transportation service.
- Enrich life and culture of people through convenient life-related services.

For our employees, we:

- Respect their human rights.
- Guarantee stable wages and safe working environments.
- Improve their motivations and encourage creative works.

For partner companies, we:

- Do business with them in accordance with the principle of respect and fairness in order to achieve prosperous coexistence.

For society, we:

- Comply with the laws, policies and measures of Hanoi City and the national government
- Improve the quality of our transportation service by developing the infrastructure system in order to contribute to the reduction of traffic jams, protection of the environment, and the development of the economy and culture of the country and the capital.

Code of conduct for employees

- Comply with the procedures and rules for safe train services.
- Unite in powerfully developing Hanoi Metro.

- Always be conscious of morals, responsibility for operations, and obligation to society.
- Make improvement by always having interest in the handling standards, rules and behaviors for service provision and operations.

Appendix 2 Long-term vision

- **Title of vision: *Construction for powerful development together with the capital***
- **Period: 10 years from 2016 to 2026**

+ Operate each railway line safely and stably.

+ Complete a structure and internal regulations, and improve the abilities of executives/officials.

+ Create a metropolitan railway culture by advertising and spreading the metropolitan railway lines.

+ Satisfy the needs of citizens for services, and improve convenience.

2016: The company receives and opens the 2A Line.

2018: The company receives the No. 3 Line (Nhon-Hanoi Stations).

2019: The company receives the No. 2 Line (Nam Thang Long-Tran Hung Dao

2020-2026: The company develops stably and strongly, and sets new goals. It receives the other lines after the construction investment is completed.

- **The company's goals at this stage:**

+ Operate the lines safely and stably so that they are trusted and preferred by citizens.

+ Contribute to the development of the capital by becoming a sound company and being constantly innovated.

+ Become an ideal workplace for the employees.

Specific behaviors to achieve the goals:

+ ***Operate the lines safely and stably so that they are trusted and preferred by citizens.***

* Receive the advanced technology and master it

* Advertise the superiority of using the metropolitan railway lines to other means of transportation, and generalize the use

+ ***Contribute to the development of the capital by becoming a sound company and being constantly innovated.***

* Formulate appropriate regulations and bylaws, and comply with laws.

- * Formulate regulations for use of the metro in order to create a new public transportation culture.
- * Serve as the foundation for the economic and social development of the capital and for the protection of the environment.
- + ***Become an ideal workplace for the employees.***
- * Employ and utilize talented people, and constantly encourage creative works.
- * Constantly have interest in individual staff members, and present the direction for their promotions and growth.

Appendix 3 Management strategy

Metropolitan railway transportation business (fare-based operation)

- (1) Target customers and goals:
 - Company employees, residents living along the lines
 - University students
 - Foreigners (tourists or business customers)
- (2) Strengthening of the company (Strategy 1)
 - Receive the constructed metropolitan railway lines (2A Line, No. 3 Line, No. 2 Line).
 - Educate and develop the company's human resources in cooperation with domestic/foreign bodies and organizations.
- (3) Marketing (Strategy 2)
 - Formulate an appropriate plan in order to conduct marketing.
 - Marketing:
 - + Hold events in cooperation with the government, Hanoi People's Committee and districts along the lines, in order to advertise the image and services of the metropolitan railway lines and the advantages of using the metropolitan railway lines.
 - + Strengthen communications with the public in order to have residents acknowledge the metropolitan railway lines.
 - Place: provide convenience to passengers purchasing train tickets in cooperation with other companies/bodies.
- (4) Fare (Strategy 3)
 - Set fares appropriate for incomes of residents.
 - Increase loyalty of passengers by providing several privileges such as discount to regular customers. The target passengers shall be in accordance with the provisions of the law.
- (5) Competitors (Strategy 4)
 - Collaboration with other means of transportation for mutual development: Collaborate with bus companies and taxi companies and clarify the roles in the respective transport modes, such as buses and taxis transporting passengers to the stations.

- Reduction of the use of individual means of transportation: Propose taking appropriate measures to reduce the use of individual means of transportation such as motorcycles and automobiles to the government, Hanoi People's Committee

Strategy for related businesses

(6) Targets

- Company employees, residents living along the lines
- University students
- Foreigners (tourists or business customers)

(7) Operation at stores in the station yard (Strategy 5)

- Study and operate stores that are appropriate for the needs of passengers and residents living near the stations, immediately after the 2A Line is opened.
- Operation method: Directly managing the store, commissioning its operation or renting the store

(8) Advertisement (Strategy 6)

- Advertise in trains using posters and television.
- Collaborate with an advertising company to conduct advertising inside and outside trains and at stations.

(9) Information technology facilities (Strategy7)

- Study the installation of cables or Internet systems that will not affect train services.

(10) Operation with stores in the station yard (Strategy 8)

- Give free train tickets to those who make purchases in certain amounts at stores in the station yard.
- Provide a discount privilege available at stores in the station yard to passengers purchasing a one-day train ticket.
Collaborate with other means of transportation.
- Provide a discount privilege for a parking charge to passengers using the metropolitan railway lines.
- Propose setting up a parking lot, bus stop or taxi stop in a place from which the station can be easily accessed.

Function system

(11) Personnel strategy

- Management:
 - + Employment: from various sources, depending on the needs
 - + Newcomer education
- Education
 - + Classroom lecture: education conducted as necessary, education conducted on a periodical basis
 - + Field education (OJT)
- Wages and mentions

- + Set a wage level for each position.
- + Formulate a fair mentioning system in order to motivate employees.

Appendix 4 Analysis of the environmental/economic society

1. Company analysis

Since it has not been long since the company was established and the company has little operational experience, the adoption of an advanced and complex technology can be either an advantage or disadvantage.

Advantage	Disadvantage
<ul style="list-style-type: none"> - Mass transportation - Safe and on-time - Fast, comfortable - Convenient services (related business) - Eco-friendly 	<ul style="list-style-type: none"> - Network has not been established - A new means of public transportation (only a small number of people use the line) - Little experience in personnel affairs - Operation/maintenance cost is large - Walk from (or to) the station (people are not used to railways) - No appropriate parking lot/terminal - Fare (may be high)

2. Competitor analysis

Buses:

Buses are major public transportation in Hanoi City. On a total of 70 lines, 1,180 buses are operated. The number of passengers using buses was 440,629,503 in 2011, 453,719,550 in 2012, and 460,000,000 in 2013 (according to Tramoc's report). Buses account for 10% of all means of transportation (according to Tramoc's report in 2009). However, the security level in buses is low, and buses are a cause of air pollution. Having said that, buses are public transportation with the highest share, and are rated as satisfying the demand of a majority of Hanoi citizens for traffic.

Advantage	Disadvantage
<ul style="list-style-type: none"> - An extensive network - Low fares - Convenient bus stops 	<ul style="list-style-type: none"> - Traffic jams - Cause environmental contamination - Unsafe (poor security, snatchers, etc.)

	- Old-model buses are used on some lines
--	--

Motorcycles: According to Vietnam's land traffic and transportation improvement plan until 2020, the number of motorcycles is estimated to hit a peak at approximately 36 million in 2020. However, according to MOT's statistics, the number of motorcycles that were registered in the first half of 2013 and are actually used exceeds 37 million, indicating that the number has continued to increase.

It is estimated that in Hanoi City, the rate of motorcycle use will reach 30% by 2020, and it can be said that motorcycles are still a major means of transportation. Motorcycles, which enable the user to easily travel and do not require much space, match the urban circumstances of Hanoi City, and are appreciated by many people. Currently, the number of motorcycle used in Hanoi City is estimated to be 4 million.

Advantage	Disadvantage
- Convenient	- Traffic jams, accident risk
- The price of motorcycles are reasonable compared with their salaries.	- Cause of environmental contamination
- Can go anywhere	- High fuel cost: 2500 VND/L
- Can park in many places	- Requires a helmet, mask, etc.
- 95% of residents in the capital own motorcycles	- Dangerous and inconvenient in case of rain
	- Only few people can be transported (two at a maximum)
	- May be easily stolen

Automobiles and taxis: In the past several years (2007-2012), the market economy has grown mainly in the real estate industry and the civil life has improved. Therefore, it has become easier for citizens to purchase automobiles to satisfy their needs for traveling. The number of automobiles is estimated to be 380,000 (the figure does not include automobiles from outside the city).

Hanoi City is a tourist city with excellent culture and long history. According to the General Statistics Office's data, the number of tourists visiting Vietnam was 745,980 people-times in April 2014, representing a 5.11% increase from March 2014, and a 21.51% increase from April 2013. For the four-month period from January to April 2014, the number is estimated to be 3,073,905 people-times, a 27.32% increase from the same

period of the previous year. Along with this, the number of taxi business operators has increased, and the number of taxis is estimated to be 16,000.

Advantage	Disadvantage
<ul style="list-style-type: none"> - There are many companies conducting businesses - Convenient on the road - Can used even on narrow streets 	<ul style="list-style-type: none"> - High cost - A major cause of traffic jams - Few places available for parking - Time for driving in the city is restricted <p>(There are streets and districts where taxis are not allowed to pass during the rush-hour zones [7:00 to 8:00 a.m., 4:30 to 6:00 p.m.] under an ordinance)</p>

3. Market/customers

a. Size of the market

On May 29, 2008, the boundaries of Hanoi Cities were adjusted based on a decision made at the national diet, and the area was expanded by more than three times to 3,300 km² and the population was doubled to 6.4 million (decision No. 15/2008/QH12).

On July 26, 2011, the Prime Minister approved the Capital Hanoi construction plan until 2030, which looked ahead to 2050. In the plan, the population of Hanoi is estimated to reach 9.2 million by 2030, while that of the central area is estimated to remain at 4.6 million (written decision No. 1259/QĐ-TTg).

b. Development expectation

Hanoi City is the capital of Vietnam, and the center of the country's economy, politics and culture. During a period from 1991 to 2010, the GDP growth rate of Hanoi City exceeded 10%. The national government has set a target for the GDP growth rate of Hanoi City at 12.0 to 13% in a period from 2011 to 2020, and 9.5 to 10% in a period from 2021 to 2030. The GDP per capita of Hanoi City will be 7100 to 7500 dollars in 2020, and is expected to increase to 16000 to 17000 dollars in 2030 (written decision No. 222/QĐ-TTg dated February 22, 2012).

c. Demand of customers

The natural increase rate of the population of Hanoi is 1.31% (2009). However, since the population influx has been doubled, the population of Hanoi City has increased by approximately 3.5% per year. Since the establishment of transportation infrastructure

has been insufficient, traffic jams have become chronic, and noise and air pollution have become a serious problem.

To increase the capacity of the public transportation system, it was decided to construct a metropolitan railway network that would play the principal role in the capital's public transportation.

According to the Capital Hanoi construction plan until 2030, which looked ahead to 2050, the demand for each transportation mode is as follows.

Unit: %

Order	Stage	Means	Public transportation		Individual transportation		Other transportation
			Metropolitan railway	Buses	Automobiles	Bicycles, motorcycles	
1	2020	City center	15	20 - 25	13 - 15	40-45	5
2		Suburban city	8	18	10	62	2
1	2030	City center	25	30	15	25	5
2		Suburban city	13	30	18	37	2
1	Sau 2030	City center	35	30-35	12	13 - 18	5
2		Suburban city	18	30	20	30	2

(according to the overall plan of the capital)

Appendix 5 Company analysis

1. Company analysis

With the goal of attracting more passengers by providing highly convenient services at the stations and in the line areas, the company should conduct the following operations along the railway lines and around the stations.

Advertising operation: Inside/outside trains, inside/outside stations

Store-based operation: Building/installing stores suitable for spaces inside/outside stations as indicated below, and operating a business that is expected to generate an income and would provide convenience.

For **eating and drinking establishments**, restaurants, cafes, fast food restaurants, etc. shall be operated.

For **goods stores**, stationery stores, etc. shall be operated in addition to selling beverages and foods.

For **convenience stores**, services related to beverages and foods, goods, etc. shall be operated.

Operation of parking lots and stations: To attract residents to using metropolitan railway, it is necessary to prepare parking spaces for passengers using other means of transportation such as bicycles, motorbikes and automobiles.

Optical fiber and Internet installation business: Areas along lines, and stations

Advantage	Disadvantage
<ul style="list-style-type: none"> - A large number of passengers pass (advertising in station yards and trains). - Surplus space can be used for advertising and store operations. - Many of the stations are close to residential areas, new urban center and schools/universities. - Passengers can view advertisement displays and make purchases more safely than on the street. - Passengers can purchase what they want in the course of travelling. - Advertisements that suit uses, such as loud speakers, images and posters can be used. 	<ul style="list-style-type: none"> - Since many of the passengers use mobile phones, they may not pay attention to advertisements.
Stores in station yards	
<ul style="list-style-type: none"> - Passengers are prospective customers of related businesses. - Collaboration with the railway business is possible. - Even if it rains, passengers can make a purchase without getting wet. 	<ul style="list-style-type: none"> - Since the stations of the 2A Line do not have large spaces, stores with large areas cannot be installed. - In the station yard, only a small number of stores can be installed. - Since columns of an elevated bridge are present in the median of the road, it is difficult to install a store under the elevated bridge.

2. Competitor analysis

Major competitors in the related businesses are private restaurants/variety stores, supermarkets, and advertisement signboards along the railway lines.

With regard to restaurants, goods stores and convenience stores, according to the above analysis, the 2A Line between Cat Linh and Ha Dong is a line that connects the city center with the Ha Dong district, which is in the west-south of the city center. Since there are many residential areas, commercial facilities and schools along the line, the

consumptions of commodities there are also large. To satisfy the demands of citizens, there are a large number of stores along the line, and various products are sold there. Such convenience and diversity are highly convenient for the citizens, and they are used in a great deal.

Advantage	Disadvantage
<ul style="list-style-type: none"> - A large number of stores - Diversified items - Convenient purchases - Reasonable prices - Matched to the culture and life 	<ul style="list-style-type: none"> - Not hygienic - Unknown places of food production

Supermarkets: As a result of examining and analyzing the areas along the line, it was found that there were seven new development areas along the line, and the population density was relatively high there. To satisfy the living demands of residents in the development areas and residents in the vicinities of the areas, supermarkets have been built. Examples include Me Linh- Ha Dong supermarket in the Van Phu district, the Haiway supermarket on the Quang Trung Street, and the Coopmart supermarket in the Lang Viet Kieu area.

Electronics retail stores, “Media,” “Tran Anh” and “Nguyen Kim” are located along the Quang Trung Street. These stores are not competitors for the related businesses of the metropolitan railway, but may serve to attract passengers (additionally, future development areas include the Royal, Hoa Binh, Thai Ha and Cat Linh districts). However, to install stores that match the needs of passengers of HMC, it is necessary to clearly analyze advantages and disadvantages of such supermarkets. Doing so will clarify the points that HMC regards as strategically important.

Advantage	Disadvantage
<ul style="list-style-type: none"> - With a large scale, many people can be attracted. - Diversified items are sold - Operated in areas with large populations - There are amusement facilities 	<ul style="list-style-type: none"> - Higher prices than ordinary roadside stores - It is customary for ordinary citizens to make purchases at markets and roadside stores. - With limited kinds of intended articles to purchase, it would take more time at supermarkets if the purchase quantity is small.

Forms of advertisements shown along the Quang Trung-Nguyen Trai Street

Advantage	Disadvantage
<ul style="list-style-type: none"> - Advertisements can be placed in any 	<ul style="list-style-type: none"> - Limited to visual advertisements

Advantage	Disadvantage
form - Large area of advertisements - Reasonable prices - Reach a wide audience - Bus lines are operated, and taxis run on the street.	- Difficult to narrow down targets

3. Analysis of the demands of the market, customers (customer) and residents for each station

According to prediction data, it is expected that the number of passengers per day in the initial period after the starting of business will be 259,400 people-times and the maximum sectional area at the peak time will be 13,400 people-times, and then the flow rate per day will subsequently increase to 925,300 people-times. Therefore, the 2A Line is expected to respond to the demands for transportation between the city center and Ha Dong. Along this line, which runs from north to south in Hanoi City, there are numbers of residential areas, offices and universities, and the line connects multiple important transportation points in Ha Dong, such as bus terminals. Therefore, the related businesses will contribute to improving convenience for passengers, and will produce a high operating effect.

With the line length of 13.06 km, the metropolitan railway 2A Line has 12 stations. For the Cat Linh, which is the terminal among the 12 stations, it is planned to build a business center in cooperation with Hanoi Urban Building Development Company. Characteristics of the other stations are as follows.

No.	Name of station	Characteristics of surroundings of station	Passengers	Passenger flow rate per day in 2016 (persons)	
				Boarding	Alighting
1	Cat Linh	- Building material stores, restaurants, cafés - Many hotels - Many office buildings - Temple of Literature - Many residences	- Residents in the vicinity: commuters, students, business managers - Tourists: from large hotels	41987	42545
2	La Thanh	- Small-size stores such as cafés and clothing stores	- Residents in the vicinity	209327	210830

No.	Name of station	Characteristics of surroundings of station	Passengers	Passenger flow rate per day in 2016 (persons)	
				Boarding	Alighting
		<ul style="list-style-type: none"> - Many residents in the vicinity of the station - Connected with the No. 3 Line 	<ul style="list-style-type: none"> - Commuters - Students, university students 		
3	Thai Ha	<ul style="list-style-type: none"> - Large-scale buildings in which offices and condos are established together - Many head offices of Vinaconex, Oil, etc. - Shopping centers - Russia-Vietnam Friendship Association - Movie theaters 	<ul style="list-style-type: none"> - Residents in the vicinity of the station - Commuters - Shoppers - Tourists 	36162	36342
4	Đuong Lang	<ul style="list-style-type: none"> - Communist party executives educational school - Many karaoke bars - Nga Tu So Market - Large shopping center (Loteria's building) - Luxury condos integrated with a large-scale shopping center and an amusement facility 	<ul style="list-style-type: none"> Residents in the vicinity of the station University students (Commuters) Shoppers Foreigners 	35753	35160
5	National University	<ul style="list-style-type: none"> - National university - Dormitories (including school dormitories and house rentals other than schools) - Commerce and industry center and apartments/condos - Thang Long cigarette 	<ul style="list-style-type: none"> Residents in the vicinity of the station University students (major target) Workers, officials/executives 	42725	42793

No.	Name of station	Characteristics of surroundings of station	Passengers	Passenger flow rate per day in 2016 (persons)	
				Boarding	Alighting
		production plant, Thuong Dinh shoe production company - Restaurants			
6	Vanh Dai 3	- Department stores - Xay Dung Hospital - Apartments - Shoe company, Rang Dong thermos bottle company, many universities - Pico Plaza (electronics retail store)	- Residents in the vicinity of the station - University students - Shoppers	35714	35725
7	Thanh Xuan 3	- Hanoi University - Junior college of arts, junior college of transportation - Phung Khoang Market (large market) - Dormitories of universities - Apartment/condo district	- Residents in the vicinity of the station - University students - Commuters	8722	8720
8	Ha Dong Bus Terminal (former)	- Architectural university, security academy, postal and telecommunication academy, academy - Apartment district integrated with large-scale electric/electronic equipment shopping centers (Nguyen Kim, Tran Anh, Coopmark) - Lang Viet Kieu, Van Quan condo groups	- Residents in the vicinity of the station (including apartments and condos) - Shoppers - Commuters - University students	7061	7061

No.	Name of station	Characteristics of surroundings of station	Passengers	Passenger flow rate per day in 2016 (persons)	
				Boarding	Alighting
9	Ha Dong	Commerce and industry center Ha Dong Market Le Quy Don High School Ha Dong athletic ground Ha Dong Hospital	- Residents in the vicinity of the station - Shoppers - Commuters - Students	14033	14063
10	La Khe	Area attracting a large number of residents, with (two) new apartment buildings to be constructed	- Residents in the vicinity of the station - Commuters - Students, university students	6988	6996
11	Van Khe	- Nguyen Hue High School - Van Khe apartment building (newly constructed)	- Residents in the vicinity of the station - Students	5050	5020
12	Yen Nghia Bus Terminal (Ha Dong new bus terminal)	- Yen Nghia Bus Terminal (Hanoi bus station, terminal of buses headed to the north) - Junior college of economics - Thanh Tay University	- Residents in the vicinity of the station - Students, university students - Commuters	70538	70453

(Based on the data of technical design No. HNHD-02-02-00-00-TDS-C [Table 2-6] for the 2A Line)

4. Target customers

Since the company provides a public passenger transportation service, the passenger transportation using the metropolitan railway lines is required to provide a service not only for certain groups, but also for all customer groups, in addition to the evaluation described above. However, to better understand the needs of each customer group, such as that for simply using the metropolitan railway lines or that for making purchases using the metropolitan railway lines, the analysis mentioned in 2.2.2 above indicates that HMC's customers are as follows.

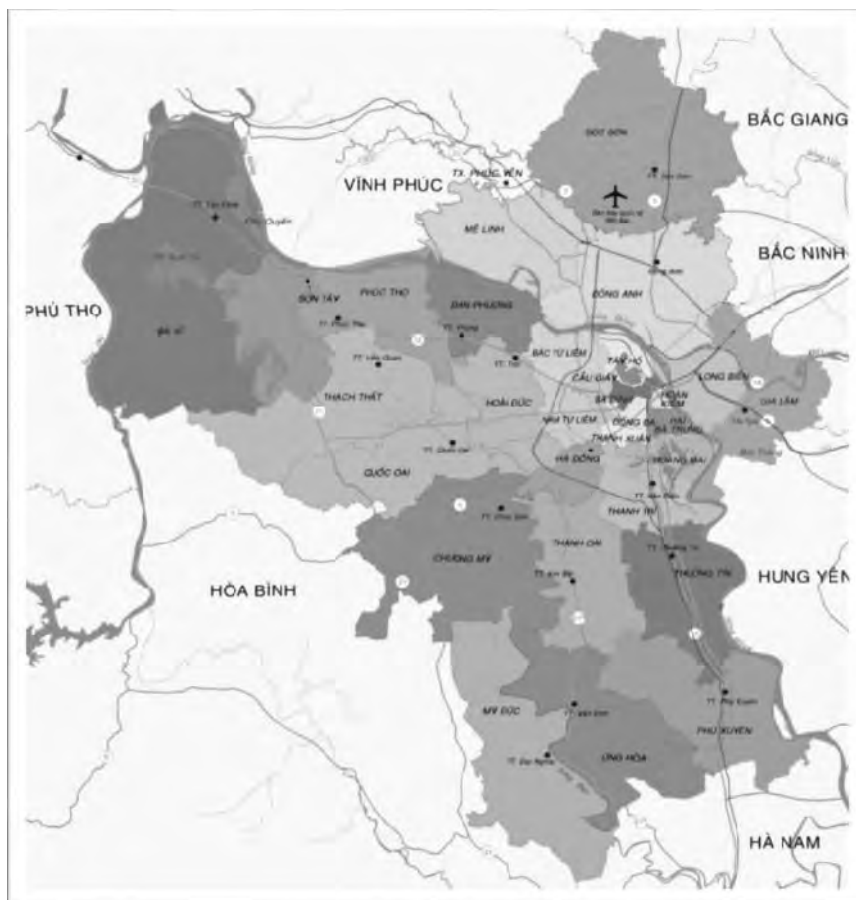
Customers as the target mainly for the transportation service: officials, workers, laborers, students, and university students

Customers as the target mainly for the commercial service: tourists and residents living in the vicinities of the stations

Appendix 6 Demand forecast

Hanoi City is the capital of Vietnam, and the center of the country's economy, politics and culture. On May 29, 2008, the national diet of Vietnam issued a protocol No. 15 that adjusted the administrative boundaries between Hanoi City and the concerned ministries. Along with this, Hanoi City's area was expanded by more than three times (approximately 3,344.7 km²), and with a population of approximately 6.9 million, the city now consists of 10 wards, one town and 18 suburban counties. The population of Hanoi City is the second largest in the country, and Hanoi City is one of the 17 capitals in the world with large areas (the above population is based on data in 2009, and excludes a population coming from the other provinces to Hanoi City on business; if this population is included, the total population will be more than 10 million). On July 26, 2011, the Prime Minister approved the "Capital Hanoi construction plan until 2030, which looks ahead to 2050" (based on a decision No. 1259/QĐ-TTg dated July 26, 2011). In the plan, the population of Hanoi is estimated to reach 9.2 million by 2030.

Figure: Administrative map of Hanoi City



Based on a decision No. 1259/QĐ-TTg

The development of Hanoi City is closely connected with the development of the country's cities, provinces and areas, especially with the metropolitan economic zone (area: 13,436 km²) including six provinces, where the population is estimated to increase from 13.5 million in 2010 to 18 million in 2050. The GDP growth rate of Hanoi City during a period from 1991 to 2000 reached 10% per year on average. The national government has set a target for the GDP growth rate of Hanoi City at 12 to 13% in a period from 2011 to 2020, and 9.5 to 10% in a period from 2021 to 2030. It has also set a target for the GDP per capita of 7100 to 7500 USD in 2020, and 16000 to 17000 USD in 2030 (based on the actual price) (Prime Minister's decision No. 222/QĐ-TTg dated February 22, 2012).

With achievements in the economy and society, rapid urbanization has been seen in Hanoi City. The speed of the urbanization is expected to continue to increase also in the next 30 years (current urbanization rate is 41%¹). Although rapid urbanization has advantages, it will bring about challenges that should be solved, a traffic problem in particular. Hanoi City's master plan for a period from 1998 to 2020 presented a policy of *“giving priority to the strengthening of public passenger transportation systems such as BRT and metropolitan railways, and the construction of a metropolitan railway system of the capital's public passenger transportation network, in order to satisfy a majority of the citizens' demand for traveling”* (decision No.108/1998/QĐ-TTg dated June 20, 1998). In 2008, the Prime Minister approved a plan for developing Capital Hanoi's traffic and transportation until 2030², and a master plan concerning traffic and transportation prepared in 1998 was formulated. In the draft of this traffic and transportation plan in 2008, a metropolitan railway system consisting of five lines with a total length of 196 kilometers was presented.

The speed of population increase in Hanoi City, in the central area in particular, is fast (4.1% per year). However, the traffic infrastructure system is in the course of development. Since traffic jams have become chronic, traveling is time-consuming, and noise and air pollution are serious.

Hanoi citizens mainly use individual transportations. Individual transportations account for 90% of the traveling needs, while public transportations respond to the needs of 1,296,000 passengers, which represent the remaining 10% needs (*Trancocen, 2012*).

¹ A population and residence survey in Vietnam in fiscal 2009 – General Statistics Office, 2009.

² Prime Minister's decision No. 90/2008/QĐ-TTg, July 8, 2008.

The main public transportation is a bus system that transports 1,060,000 passengers. Other transportations include taxis and taxi motorcycles.

Generally, the transportation capacity growth rate of the bus system is approximately 6%. The congestion rate of the bus system during rush hours is high at 1.4 on average and may rise to 3 in some cases (*Trancocen, 2012*). This suggests that the transportation capacity of the bus system of Hanoi City has almost reached its limit. To increase the transportation capacity of its public transportation systems, Hanoi City must consider taking other measures. Currently, the selected options that can be implemented may constitute a metropolitan railway system that will serve as the artery of the capital's public transportation systems.

Table: Summary of the demand for traffic in Hanoi City

Index		Point of time		
		1995 (JICA)	2005 (HAIDEP)	2009
Population (1,000 people)		2.431	3.186	6.448
Total number of travelling services of transportation per day (1,000 services/day)	Including walking	6.223	8.721	14.898
	Excluding walking	3.082	6.545	11.93
Travelling coefficient (number of travelling services /person/day)	Including walking	2.56	2.73	2.31
	Excluding walking	1.27	2.01	1.85

Source: Trancocen 2012

Appendix 7 Flow rates of passengers using the 2A Line Cat linh-Ha Dong, No. 2 Line Nam Thang Long-Tran Hung Dao, and No. 3 Line Nhon-Ga Ha Noi

Capital Hanoi has an area of 3,348.5 km² and a population of 6.47 million of which the population of the city is 2.4 million. The population is not evenly distributed, and the population density in the wards of the city is especially high. The average population density in Hanoi City is 1,979 people/km². The speed of population increase in Hanoi City, in the central area in particular, is fast (4.1% per year). However, the traffic infrastructure system is in the course of development. Since traffic jams have become chronic, traveling is time-consuming, and noise and air pollution are serious.

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According to the study on the 2A Line, No. 2 Line and No. 3 Line projects, the estimated passenger flow rate at each stage is as shown in the table below.

Table: Passenger flow rate investigated in the metropolitan railway line projects

Year	Technical study data (1000 people-times/year)			
	No. 2 Line	No. 2A Line	No. 3 Line	Total
2016		94,681		94,681
2017		118,012		118,012
2018		141,343	59,641	200,984
2019	37,465	164,673	91,834	293,972

As for the No. 2 Line and the No. 3 Line other than the 2A Line, only the construction of part of No. 3 Line sections has been started. In addition, to complete the metropolitan railway system in Hanoi City, it is necessary to continue to invest also in the other lines. Furthermore, it is expected that the demand for establishing a public transportation system for the satellite cities (five satellite cities belonging to Hanoi City) will further grow. Therefore, the market demand (for the supply of public passenger service) is very high, and the possibility of market development can be expected.

Annual Business Plan

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I. Grounds

- A corporate philosophy approved and enacted in accordance with written decision No. ○○ dated ○ of Hanoi Metro One Member Limited Liability Company,
- A long-term vision approved and enacted in accordance with written decision No. ○○ dated ○ of Hanoi Metro One Member Limited Liability Company, and
- A five-year business plan approved and enacted in accordance with written decision No. ○○ dated ○ of Hanoi Metro One Member Limited Liability Company, which are based on
- Finance rules enacted in accordance with written decision No. ○○ of Hanoi Metro One member Limited Liability Company, based on
- A written decision No. 4694/QĐ-UBND by HPC dated June 15, 2015 concerning the approval of the articles of incorporation of Hanoi Metro One Member Limited Liability Company in terms of its organization and activities, based on
- A written decision No. 6266/QĐ-UBND by HPC dated November 27, 2014 concerning the establishment of Hanoi Metro One Member Limited Liability Company, based on
- Advertisement Act No. 16/2012/QH13 dated June 21, 2012, based on
- Real Estate Business Act No. 66/2014/QH13 dated November 25, 2014, based on
- Enterprise Act No.68/2014/QH13 dated November 26, 2014, based on
- Railway Act No. 35/2005QH11 dated June 14, 2005

II. Purposes and Goals

2.1 Purposes

To place focus on the following matters.

- Establishment of the company's management system
- Reception of the 2A Line (Cat Linh-Ha Dong)
- Attraction of citizens to using metropolitan railway lines
- Formulation of plans for the related businesses and the 2A Line

2.2 Goals

- Value of the goal: (not fixed yet since the 2A Line has not been completed)

- Index to measure the main efficiency amount: (not fixed yet since the 2A Line has not been completed)

III. Method

Analyze the elements that directly affect the management of the company.

3.1 Analysis of GDP growth of Hanoi in 2016 (Appendix 1)

3.2 Estimate of the population of Hanoi in 2016 (Appendix 2)

3.3 Estimate of tourists visiting Hanoi in 2016 (Appendix 3)

3.4 Estimate of the demand for passenger transport in 2016 (Appendix 4)

IV. Content of the plan

4.1 Income and expenditure plan

Unit: VNĐ

No.	Content	2016				Remarks
		1 st quarter	2 nd quarter	3 rd quarter	4 th quarter	
A	Income					
1	Railway (fare) business					
2	Related businesses					
2.1	Store					
2.1	Advertisement					
					
B	Cost					
1	Train service cost					
2	Maintenance and repair cost					
4	Personnel cost					
5	Equipment investment cost					
	Office equipment					
	Automobiles					
					
C	Net income before tax					
D	Net income after tax					

4.2 Fund allocation plan

Department	2016				Major content
	1 st quarter	2 nd quarter	3 rd quarter	4 th quarter	
General affairs department					
Organization and education department					
Finance and account department					
Safety and quality department					
Sales and public relations department					
Planning and project department					
Train service department					
Technical and maintenance department					
General					

4.3 Safety related plan

Safety in the train service and operation is a prerequisite that the company's executives regard as particularly important in the course of the company's activities.

Method	2016				Basic content	Relationship with the 5-year business plan
	1 st quarter	2 nd quarter	3 rd quarter	4 th quarter		
Safety during train service					Train executives/officials and employees	
Checking the spots where surveillance cameras are installed at the station					If the cameras are insufficient, install additional cameras and appropriately adjust them.	

Method	2016				Basic content	Relationship with the 5-year business plan
	1 st quarter	2 nd quarter	3 rd quarter	4 th quarter		
Checking the fire protection equipment					If the equipment is insufficient, install additional pieces of equipment and appropriately adjust them. Training based on assumption Training based on assumption Training based on assumption	
Field training on derailment						
Field training on fire protection						
Field training on other accidents						

(Safety must be given top priority in metropolitan railways. The metropolitan railway is a new system not only in Hanoi, but also in Vietnam, and the country has no experience in operating such a railway. Since it is a means of mass transportation, safety is the prerequisite of the company.)

4.4 Strengthening of the company, reception of the 2A Line, and human resource education (Strategy 1)

Mid-term business plan	Content of operation to be developed	2016				
		1 st quarter	2 nd quarter	3 rd quarter	4 th quarter	
Management system establishment	Legal procedure					To be developed immediately after the company is established
	Facilities (head office)					To be developed immediately after the company is established and after the 2A Line is received
	Organization, human resources					Immediately after the company is established
	Finance scheme					Immediately after the company is established

	Plans, regulations, rules, manuals, etc.		Immediately after the company is established	
Reception of the 2A Line	Development of a plan for receiving the 2A Line	Plan adjusted with PMUR		
	Trial run	Plan preparation	Development	
	Opening			Development
Human resource education	Field education			
	Preparation of an employee capacity building plan	Drawing up a plan draft	Plan adjustment	

4.5 Attraction of residents to using the metropolitan railway lines (Strategy 2)

Mid-term business plan	Content of operation to be developed	2016			
		1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
Encouragement Awareness raising:	Work of employees				
Evaluation raising:	Attraction of users	Program		Development	
	(Monitor) celebrities		Selection	Development	
	Mass media	Preparation of content		Publication	
	Website	Preparation of content		Publication	

4.6 Fare (Strategy 3)

Mid-term business plan	Content of operation to be developed	2016			
		1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
Fare	Setting an appropriate fare	☆ →			
	Considering granting a privilege such as fare discount to regular customers	Submitting a proposal →			

4.7 Collaboration with other forms of public transportation (Strategy 4)

Mid-term business plan	Content of operation to be developed	2016			
		1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
Collaboration:	Negotiation with a bus company and a taxi company	Preparation →	Negotiation →		
	Negotiation with concerned authorities of the 2A Line	Negotiation →			
	Negotiation with concerned authorities of the No. 3 line		Negotiation →		
	Negotiation with concerned authorities of the No. 2 line		Negotiation →		
	Formulating a plan for the No. 3 line (construction of stations)				→
	Formulating a plan for the No. 2 line (construction of stations)				→
Restriction on individual transportation means	Formulate a plan in cooperation with the government and HPC	Drawing up a draft plan →	Plan adjustment →		Development →

4.8 Related businesses (stores, advertisement, IT) (Strategies 5, 6, 7)

Mid-term business plan	Content of operation to be developed	2016			
		1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
Station stores	Market research	Contactor selection	Research	Analysis	
Advertisement	Examining a management method		Examining a method	Determination	
IT	Research	Research	Development		

4.9 Stores, and collaboration with those who use other public transportation means (Strategy 8)

Mid-term business plan	Content of operation to be developed	2016			
		1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
Stations stores	Considering what and how to give preferential treatment	Research	Determination, development		
Collaboration with other transportation means	Considering providing a privilege of using other transportation means in addition to the railway to passengers	Research	Determination, development		
	Construction of a parking lot	Location selection		Plan formulation, development	

4.10 Human resource plan

Mid-term business plan	Content of operation to be developed	2016			
		1 st quarter	2 nd quarter	3 rd quarter	4 th quarter
Employment	Formulation of an employment policy		To be developed immediately after the company is established		
Education	Producing a mechanism of human resource education	In Vietnam, China	Field		Field
Salary, bonus	Studying elements for motivating employees		To be developed immediately after the company is established		

4.11 Plans of the departments

Measure	Plan	2016			
		1 st quarter	2 nd quarter	3 rd quarter	4 th quarter

(Each department will formulate a plan including the content of its operations and expenses. A uniform format will be studied for formulating a plan.)

V. Appendixes, organizations

5.1 Appendix 1: Analysis of GDP growth of Hanoi in 2016

5.2 Appendix 2: Estimate of the population of Hanoi in 2016

5.3 Appendix 3: Estimate of tourists visiting Hanoi in 2016

5.4 Appendix 4: Estimate of the demand for passenger transport in 2016

5.5 Appendix 5: Plans of the operating departments for 2016

**HANOI PEOPLE'S
COMMITTEE**

THE SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

**ARTICLES
OF INCORPORATION AND OPERATION
OF HANOI METRO ONE MEMBER LIABILITY LIMITED COMPANY**
*(Promulgated with Decision no./QĐ-UBND
datemonth..... year 2014 by Hanoi People's Committee)*

**CHAPTER I
GENERAL PROVISIONS**

Article 1. Definition of terms

Except for other definitions of terms in Articles, clauses of this AOI, the following terms are understood as following:

1. Owner: Hanoi People's Committee is the owner of Hanoi Metro One member Liability Limited Company, to execute rights and obligations of the owner towards the Company.

2. Company: refers to Hanoi Metro One member liability limited company (hereinafter called "Company").

3. "Urban railway": Except for other definition in this AOI, "Urban railway" is understood as mass passenger transit, which uses electricity and run on specialized track in one city or between a city with its sub-areas; types of urban railway shall include metro, elevated trains, at-grade trains, mixed trains, tramway, monorail and others.

4. Other terms in this AOI, which are explained in the Civil Law, Enterprise Law and other legal documents, shall be understood as description in those legal documents.

Article 2. Company's name and headquarters

1. Name:

- Full name in Vietnamese: CÔNG TY TRÁCH NHIỆM HỮU HẠN NHÀ NƯỚC MỘT THÀNH VIÊN ĐƯỜNG SẮT ĐÔ THỊ HÀ NỘI
- Business name in Vietnamese: CÔNG TY ĐƯỜNG SẮT ĐÔ THỊ HÀ NỘI
- International business name in English: HANOI METRO COMPANY
- Short name: HANOI METRO
- Abbreviated name: HMC
- Address of HQs: Phu Luong Ward, Ha Dong District, Hanoi City

- Temporary address of HQs: No. 8, Ho Xuan Huong Street, Nguyen Du Ward, Hai Ba Trung District, Hanoi City
- Telephone:
- Fax:
- Email:
- Website:
- Logo :

2. Type of enterprise: One member liability limited company

Article 3. Legal form and legal position of the Company

1. Hanoi Metro One Member LLC (hereinafter called the Company) is established by *Decision no. date month year201... by HPC*, is an enterprise operating in compliant with Enterprise law and this AOI.

2. The Company has legal position, its own stamp, logo and can open account in VND and foreign currency at domestic banks or foreign banks as regulations.

3. The Company shall have own capital and assets, be responsible for loans payment by its all assets.

4. The Company has the rights to own, use and make decisions on name, trade brand, unique logo of the Company as regulations.

Article 4. Company's Charter capital and Adjustment on Charter capital

1. Charter capital:

Charter capital of Hanoi Metro One Member Liability Limited Company :
... VND (in words: VND)

2. Adjustment of Charter capital:

a. The adjustment on Charter capital of the Company is decided by its Owner in accordance with regulations.

b. When the charter capital is adjusted, the Company must re-register to business registration agency and publicize the adjusted charter capital in compliant with regulations.

Article 5. Legal representative of the Company

Legal representative of the Company is Chairman of Board of Members.

Article 6. Owner of the Company

1. Company's owner: Hanoi People's Committee.

- Address: No. 79, Dinh Tien Hoang Street, Ly Thai To Ward, Hoan

Kiem District, Hanoi City.

2. Board of Members of the Company is direct representative of the Owner at the Company.

Article 7. Duration of Operation

The Company starts its operation from the date of issuance of Business registration certificate by competent agency.

Operation duration of the Company is under decision by the owner.

Article 8. Objectives and Business categories of the Company

1. Objectives:

a. To maximize productivity, preserve and develop the equity that the Owner invests into the Company, and the capital that the Company invests into other enterprises.

b. To guarantee the works for employees and interests of the Company as regulations.

c. To complete other tasks assigned by the Company's Owner.

2. Business categories:

a. Main business categories:

- Code 4931 Road passenger transport in urban and sub-urban area (by urban railways)
- Code 3312 Repairing urban railway machines, equipment
- Code 3315 Repairing and maintaining transportation vehicles
- Code 4210 Constructing railway and road works
- Code 3020 Manufacturing electricity units and cars (Urban railway)
- Code 8532 Vocational education (Urban railway)
- Code 8541 College level education (Urban railway)
- Code 7830 Supply and manage labor resources (Urban railway)

b. Other business categories except for main ones

- Code 5610 Restaurants and movable food services
- Code 5210 Goods yard and storage
- Code 5510 Short-term staying service
- Code 7310 Advertisement
- Code 7320 Market research and community survey
- Code 7911 Tourism agent
- Code 7920 Supporting services for promoting and organizing tours

c. The Company is only eligible for doing business for categories based on decision of the Company's owner and will be granted with additional

registration (license) by competent authority. Only be eligible for operating business categories if necessary conditions are fulfilled as regulations.

3. Scale of Operation:

Hanoi Metro One Member Liability Limited Company will operate within the border of Vietnam and in foreign countries in compliant with Vietnamese and international regulations.

Article 9. State management on the Company

The Company is under state management in accordance with regulations.

Article 10. Political and Socio-political organizations in the Company

1. Political and socio-political organizations shall operate in compliant with the Constitution, regulations and Articles of those respective organizations which are in accordance with regulations.

2. The Company shall respect and create favorable conditions for employees to establish and participate in activities of organizations as stipulated in clause 1 of this Article.

CHAPTER II

RIGHTS AND OBLIGATIONS OF THE COMPANY

Article 11. Rights of the Company for capital and assets

1. Manage, use capital and assets of the Company for business purpose; implement legal benefits by using capital and assets of the Company.

2. Have the rights to make decision over capital and assets of the Company in compliant with regulations and this AOI.

3. Use and manage properties assigned and lent by the Government, i.e. land, natural resources in accordance with regulations about land and natural resources.

4. The Company's owner shall not shift the capital invested by the Government to the Company, as well as capital and assets of the Company in non-payment method.

5. Have the rights to possess, use and make decisions over the name, logo and trade brand of the Company as regulations.

6. Execute other rights for capital and assets as regulations

Article 12. Rights for Doing business of the Company

1. Be proactively organize the production, business, organizing the managerial structure as business requirements, and assure effective business.

2. Conduct business within categories as stipulated in the Business registration certificate and within categories under approval of the Owner, and in compliant with regulations; expanding the business scope on the basis of capability and demand of domestic and foreign markets.

3. Search for domestic and foreign market and customers; organizing to

sign and implement contracts.

4. Make decision itself for purchasing price and selling price of products, services, except for public services and products, services priced by the Government since they are following price level or price scale of the Government

5. Make decision on investment projects as regulations about investment; use capital and assets of the Company to associate and invest capital into other domestic enterprises; rent, purchase part or entire of other company, in compliant with regulations and this AOI.

6. Make decision on investing to other aspects out of Company's scope within total financial investment value of the Company and less than 50% of charter capital.

7. To report for decision of the Owner if the Company wants to use capital or mobilized capital to invest to establish other company.

8. Open branches, representative offices in and outside the country in compliant with regulations.

9. Develop and apply the norm of labor and materials, unit price for wages and other expenses on the basis of ensuring business effectiveness of the Company and in compliant with regulations.

10. Select, allocate, use, train, reward and deal with violations, dismiss labours, select salary and reward payment method, which is suitable to business features of the Company as well as in compliant with labor regulations.

11. Make decision to dispatch staff of the Company to oversea working trips in compliant with regulations of the Government and the City.

12. Have right to do other business following the market demand, and in accordance with regulations.

Article 13. Rights for the finance of the Company

1. Mobilize capital to do business under such methods as issuance of Company's bonds and bill of exchange; borrow banks, credit institutions and other financial organizations, individuals and organizations out of the Company, borrow labours and other capital mobilizing methods as regulations and under the regulations by the Owner.

The mobilization of capital for business is executed on the principle of the Company's own responsibility for repayment, ensuring the effectiveness of using mobilized capital, without changing the ownership type of the Company.

2. Proactively use capital for the Company's business; be able to form, use and manage Company's funds as regulations.

3. Be eligible for making decision on salaries and other expenses on the basis of revenue derived from the Company's operation, in compliant with regulations.

4. Make decision to depreciate the fixed assets, on the principle of

possibility of recovering for tangible and intangible depreciation of fixed assets from minimum deduction of depreciation.

5. Receive subsidy or other preferential systems of the Government while implementing public activities, national defence and security activities; prevent and fighting for natural disasters or supply products, services under price policy issued by the Government, when the revenue is not sufficient to cover costs to produce those products or services of the Company.

6. Be eligible to disburse to reward innovations in reforming, technical improvement, management and technology; reward for increase of labor productivity; reward for materials saving and cost saving, in compliant with regulations.

7. Receive preferential schemes for investment, re-investment in compliant with regulations.

8. Be eligible to refuse and denounce on any requests for provision of deregulated resources derived from any individuals, organizations or agencies, except for voluntary amounts for humanitarian and public purposes.

9. Implement other rights in terms of finance as regulations.

Article 14. Company's obligations on capital and assets

1. Preserve and develop the capital invested by the Government at the Company and capital mobilized by the Company itself; be responsible for debts and other assets liabilities of the Company within the scope of assets of the Company.

2. Periodically re-evaluate the assets of the Company as regulations.

3. Implement other obligations of the Company in terms of capital and assets as regulations.

Article 15. Obligations in business of the Company

1. Do business within scope of registered categories; ensure quality of products and services supplied by the Company as registered quality.

2. Reform, modernize the technology and management method to improve the effectiveness and competitiveness.

3. Ensure rights and benefits for labours as labor regulations, ensure the rights of labours to participate in management activities of the Company as regulations in Chapter VII of this AOI.

4. Comply with Government's regulations in terms of national defense, security, culture, social order and safety, protection of natural resources and environment.

5. Implement accounting, auditing, finance statement and statistics statement systems as regulations, and following the requirements of the Owner.

6. Be under the monitor and inspection of the Owner or organization authorized by the Owner; execute decisions relating to inspections of financial organizations and competent Government organizations as regulations.

7. Have the responsibility towards the Company's Owner about the usage

of capital to invest in establishment of other enterprises or invest into other enterprises.

8. Use at least 70% of total investing capital into aspects which belong to main business categories of the Company. Total investment capital contributed outside of the Company (including both long term and short term investments) shall not be over charter capital of the Company. For investment and capital contribution into banking, insurance, securities sectors, the Company shall be eligible for investing in one company for each sector; the investment capital amount shall not be more than 20% of charter capital of receiving organization, but the capital contribution amount of the Parent Company and Subsidiaries in the Company must not be over 30% of the charter capital of invested organization.

9. The Company shall develop Rules on management and using assets to clarify responsibilities of each step in the management; organize the accounting to reflect the facts in sufficient, correct and timely manner; organize the inventory and comparison periodically or upon requirements of the Owner; implement the investment to fixed assets, managing and using assets as stipulations at this AOI and legal regulations.

10. Perform other business obligations of the Company as regulations.

Article 16. Financial obligations of the Company

1. Doing profitable business, ensure the target return on Government's capital invested in the Company, which is set up by the Owner; register, declare and submit sufficient tax amount, implement obligations towards the Owner as well as other financial liabilities as regulations.

2. Manage and use effectively business capital including the capital investing into other companies (if any); manage, use effectively the natural resources, land and other resources assigned or lent by the Owner. Board of Members, General Director are responsible for timely settling bad debts and irrecoverable debts in compliant with regulations.

3. Use capital and other resources to implement other special tasks when the Government requests.

4. Sufficiently execute capital, assets, funds, accounting and auditing management schemes as regulations; be responsible for truthfulness and lawfulness in Company's financial activities.

5. Execute other tasks as stipulated in financial management scheme of the Company and in other legal regulations.

Article 17. Rights and obligations of the Company in public activities

Apart from rights and obligations of the Company as stipulated in Article 11, 12, 13, 14, 15 and 16 of this AOI, the Company shall have the following rights and obligations if participating in public activities:

1. Produce, supply public products and services on the basis of bidding or appointment. As for Government-ordered/planned public activities, the

Company is obliged to providing public products and services towards receivable candidates, under prices and fee stipulated by the Government.

2. Be responsible towards the Government for results of Company's public activity operation; be responsible towards customers, the laws about public products and services which are supplied by the Company.

3. Develop and apply norms for expenses, unit price of wages in the contracting prices in works ordered or assigned by the Government.

4. Implement other tasks of the Company as other regulations about production and supply of public products.

CHAPTER III

RIGHTS AND OBLIGATIONS OF THE OWNER

Article 18. Rights of the Owner

1. Make decision on establishment, re-organizing, merging, dissolving, bankrupt and switching of the Company's ownership; make decision on approval for contents, amending and supplementing the AOI of the Company; accept for the Board of members to make decision on the establishment of Branches, Representative offices of the Company in and outside the country; make decision on business categories, supplement functions and responsibilities of the Company on the basis of requests of the Company or related organizations/branches.

2. Approve for 5-year production plans and investmen & development plans; list of annual investment projects of class A and B, and notice Ministry of Planning and Investment, Ministry of Finance for compiling and supervision.

3. Make decision on alternatives of mobilizing capital which is more than charter capital of the Company, on the basis of requests by the Company and related organizations/branches.

4. Make decision on investing projects, contracts of purchasing, selling and lending of properties which are valued equal or more than 50% of total assets amount as recorded in the latest financial statement of the Company, based on requests by the Company and related organizations/branches.

5. Make decision on investing into non-Company's projects which are valued more than 50% of charter capital, on the basis of requests by the Company and related organizations/branches.

6. Approve for policies of borrowing, lending, purchasing, selling assets which are valued equal or more than 50% of Company's charter capital; approve for Company's policy to borrow from foreign organizations, and request MOF to consider and accept.

7. Make decision on amendment of Company's charter capital ; switch partly or entirely of Company's charter capital to other organizations,

individuals based on requests by the Company and related organizations/branches.

8. Make decision on the investment, capital contribution to enterprises operating on categories which are different to main ones of the Company, on the basis of requests by the Company and related organizations/branches.

9. Make decision on approval for utilization of land and assets of the Company to invest and capitalize with partners in and outside the country, in order to establish other companies, or in oversea projects of the Company, on the basis of requests by the Company and related organizations/branches.

10. Make decision on managerial organization structure of the Company, make decision on appointment, re-appointment, mobilization, circulation, dismissal, reward, punishing, resigning, retiring; make decision on wage level, rewards and other benefits for Chairman of Board of members, General Director, members of Board of members, Deputy General Directos, Chief accountant and auditors of the Company as per management classification for officers of the City.

11. Make decision on appointing Chairman of Board of members, members of Board of members, General director, Deputy General directos, Auditors, Chief Accountant of the Company to join in management of capital that the Company contributes at other enterprises.

Make decision to dispatch staff of the Company to join in management of the Company contributed capital at enterprises which have received capital contribution of foreign counterparts.

12. Make decision to assign Chairman of Board of members, members in Board of members, General director, Deputy General director, Chief accountant, Auditors of the Company to join oversea working trips, as per requests of the Company.

13. Retrieve the entire assets of the Company after it is dissolved or bankrupted.

14. Supervise, check and insepct the conformity to legal regulations; the management, using, preservation and development of capital; the implementation of strategies, plans; the implementation of recruitment scheme, wages, rewards of the Company; the implementation of the structure and officers individually as classified in Article 31 of Decree no. 25/2010/NĐ-CP dated 19/3/2010 by the Government, this AOI and other legal regulations. Appraise the implementation of goals, tasks and business categories as assigned as well as results of operation, effectiveness in the operation of the Company. Conduct evaluations towards Chairman and members of Board of members, Auditors, General Director, Deputy General Director, Chief accountant in management and operating of the Company.

Check and supervise the rights of Company's Owner towards affiliated companies under the Company.

15. Organize the arrangement and reformation of the Company after submitting and getting approval of the Prime Minister for a Master plan of such

changes.

16. Approve for policy of capital contributing, keeping, increasing, reducing capital of the Company at other enterprises; for other enterprises to voluntarily join in as affiliated or associated companies.

17. Accept for Board of members of the Company to ratify annual financial statement, profit distribution, recording and using funds.

18. Organize to check the compliance and execution of decisions made by the Owner; the conformity with this AOI; with rights and obligations of the Company as regulations.

19. Implement other rights and obligations as regulations.

Article 19. Obligations of the Owner

1. Complying with the AOI.

2. Invest sufficient capital to the Company.

3. Be responsible for debts and asset liabilities of the Company within the charter capital of the Company, define and separate assets of Owner – the Government, and assets of the Company.

4. Assure legal business operation for the Company.

5. In 30 (thirty) days since the receiving of report from Company's Board of members as well as recommendations for approval from members of Board of members for contents stipulated in clause 12, Article 20 and clause 3, Article 27 of Decree no. 25/NĐ-CP dated 19/3/2010 of the Government and this AOI, the Owner shall make decision in written form to approve or feedback the Company.

6. Implement other obligations as regulations.

Article 20. Restrictions towards rights of the Owner

1. The Owner shall be eligible to withdraw the capital by transfer partly or the entirety of charter capital to other organizations or individuals. In case of withdrawing part or entire of contributing capital from the Company under other methods, the Owner shall have associated liability for loans and other asset liabilities of the Company.

2. The Owner shall not be eligible to withdraw the profits of the Company when the Company cannot sufficiently repay for due loans and other assets liabilities.

3. Other restrictions as regulations.

CHAPTER IV

ORGANIZATION OF COMPANY MANAGEMENT

Article 21. Organization structure of management and operation of the Company

Structure of management and operation of the Company shall include:

- a. Board of members.
- b. General Director.
- c. Deputy General Directors.
- d. Auditors.
- e. Chief Accountant.
- f. Functional Departments/Boards
- g. Subordinate units

2. During the operation, the structure of functional departments/boards/production units of the Company can be changed and amended to match the operation requirements of the Company, on the basis of stipulations in this AOI and legal regulations.

SECTION I

BOARD OF MEMBERS

Article 22. Functions and structure of Board of members

1. Board of members is the direct representative of the Owner at the Company; implementing rights and obligations of the Owner as classification stipulated in this AOI; be responsible towards the Owner and the laws for implementation of tasks, rights and obligations, and responsibilities in the development of the Company following objectives and tasks which are assigned by the Owner.

2. Board of members is eligible to make decision on matters relating to definition and implementation of objectives, tasks and interests of the Company, on behalf of the Owner, except for those under authority and responsibilities of the Owner as stipulated in Article 18 of this AOI.

3. Board of members shall have permanent members and impermanent members, who shall be appointed, dismissed, rewarded and punished by the Owner.

Board of members shall include 3 to 5 members who will be decided by the Owner, including Chairman of Board of members and members.

Article 23. Obligations and authorities of Board of members

1. Receive, manage and use capital, land, resources invested by the Owner as well as other resources in effective manner.

2. Make decision on 5-year strategies, business plan and investment plan for the Company after the approval of competent authorities. Make decision on business coordination alternatives between parent company and affiliated companies whose charter capital are entirely owned by the parent company or which are involved by dominant shares or capital of parent company in

compliant with regulations.

3. Make decision on investment projects, purchasing, selling, lending, borrowing contracts and others which are valued under 50% of total value of assets as recorded in the latest financial statement of the Company.

4. Make decision on projects out of the Company, within the total financial investment value of the Company which is also less than 50% of charter capital.

5. Make decision on alternatives of capital mobilizing which are valued less than charter capital of the Company.

6. Make decision on the option of organization of management, business, staffing and the usage of management structure as well as internal management rules of the Company (Rules of recruiting, using paying salaries and rewarding, training and dismissing; rules of operation of Board of members; rules of operation of Auditors; rules of internal inspection and supervision; rules of officers affairs; rules of implementing democracy at enterprises, etc.), planning and training for the labors. Make decision on new establishment, re-organization, dissolution of affiliated units of parent Company, branches, representative offices of parent company in and outside the country after pursuing approval of the Owner as regulations. Approve for AOI, Financial mechanism of branches, representative offices, affiliated units of parent company.

7. Ratify annual financial statements of the Company and consolidated financial statement of Parent Company – Affiliated Companies.

8. Approve for financial statement, profits distribution, recording and using funds after pursuing approval from competent authorities.

9. Make decision on capital contributing, keeping, increasing, reducing capital of the Company at other enterprises; the receiving of affiliated companies, associated companies after the Company applies and getting the Owner's approval for policy of the receiving.

10. Report the Owner about Decision to receive enterprises voluntarily joining as associated members with the Company.

11. Approve for economic-technical norms, labor norms, expenses and finance and other norm as requirements of the General Director. Make decision on product standards, salary unit price, salary payment system for laborers and management staff applicable in the Company and subordinate units as requirements of General Director.

12. Approve for methods to mobilize capital for business, which shall not be more than charter capital and shall not change the ownership of the Company.

13. Develop methods to contribute capital to other Companies which operate in business other than main categories of the Company, and submit for decision of the Owner.

14. Request the Owner to make decision on appointment, reappointment, dispatching, circulating, dismissing, rewarding, punishing, resigning and

retiring; make decision on salary level, rewards and other benefits for Chairman of Board of members, members of Board of members, General Director, Deputy G. Director, Chief Accountant and Auditor of the Company.

15. Make decision on appointment, re-appointment, dispatching, circulating, dismissing, rewarding, punishing for discipline violations, resigning and retiring; make decision on salary level, rewards and other benefits to Managers of Departments/Boards/subordinate units and other equivalent ones in the Company.

16. Request the Owner to assign Company's officers who are under direct management of the City (including titles of Chairman of Board of members, Members of Board of members, General Director, Deputy G. Director, Auditor and Chief accountant of the Company) to participate in management over capital of the Company at other enterprises.

17. Make decision to assign staffs who are under direct management of the Company to participate in management over the capital of the Company at other enterprises which joins capital with other domestic partners on the basis of request from General Director.

Request the Owner to assign Company's staffs to take part in management of capital of the Company at enterprises which joins capital with foreign partners.

18. Make decision on assignment of Managers of Departments/boards/subordinate units and other equivalent ones in the Company to oversee working trips.

19. Submit the Owner to make decision on other matters of the Company, which are under the authority of the Owner as stipulated in Article 18 of this AOI and in other relevant regulations.

20. Organize to check and supervise the General Director, Deputy G. Director, Chief Accountant and representative for Company's contributed capital in other enterprises in terms of implementation of functions and responsibilities following regulations at Article 31 in Decree 25/2010/NĐ-CP dated 19/03/2010 of the Government and other related regulations.

21. Make decision on production, business and annual investment and development plans of the Company, and submit decisions to concerned departments/boards and the Owner to compile and supervise.

22. Request the Owner to adjust the charter capital, amend and supplement AOI of the Company; re-organize, transfer the ownership, dissolve and request for bankruptcy of the Company.

23. Request the Owner to approve in policy for foreign loans.

24. Make decision on solutions to develop the market, promotion and technology of the Company.

25. Take responsibility for managing and operating enterprises to comply with regulations and decisions made by the Owner; for managing, using, preserving and developing capital in effective manner; timely report to the Owner about deficits, loss of debt servicing capacity, impossibility to complete

targets and tasks assigned by the Owner, or other mistakes.

26. Other authorities and obligations stipulated in Enterprise Law, relevant laws and regulations by the Owner.

Article 24. Working system of the Company's Board of members

1. Board of members shall work in team-based manner, meet at least once a quarter to review and make decision on matters which are under respective authority and functions; for matters which are not required for discussions, Board of members must pursue opinions from members in written form.

Board of members shall organize unscheduled meeting to settle urgent matters of the Company when:

a. It is requested by the Owner, Auditor and others as regulations of the Owner.

b. It is recommended by Chairman of Board of members or General Director.

c. It is recommended by more than half of members of Board of members.

2. Chairman of Board of members or Members of Board of members authorized by the Chairman of BOM to call and chair the meeting of BOM. Contents and materials for meetings shall be sent to members of BOM and other participants (if any) at least 03 working days in advance.

3. Meetings or acquiring comments from members of BOM shall be valid if more than half of members in BOM participate in. Resolution, Decision of BOM shall be valid if more than half of members of BOM vote approval; In case that the vote are equal, the party which obtain the vote of the Chairman of BOM shall be recognized. Members of BOM have the right to reserve their opinions.

When discussing about the works of the Company relating to rights and obligations of the labours, it is compulsory to invite the participation of representative from Company's Labor Union. Representatives from organizations and agencies asked for participation in meetings shall be able to raise their opinions, but not join in voting.

4. Contents of discussing matters, opinions, results of voting, decisions shall be pursued ratification of members of BOM, and conclusions in meetings of BOM shall be minuted. Chairperson and secretary in the meetings shall be associated with responsibilities for the truthfulness and accuracy of minute of BOM meeting. Resolution and decision of BOM are compulsory for execution in the Company.

5. Members of BOM shall have rights to request General Director, Deputy G. Director, Chief Accountant, management staffs of the Company to provide information, materials about financial situation and operation of the Company in compliant with Resolution of the BOM. Requested person must be responsible for providing information and materials in timely, sufficiently and correctly manner, in accordance with requests of BOM, except for the BOM shall have

another decision.

6. Budget for operation of BOM, including salary, allowances and wages shall be accounted for corporate management expenses of the Company as regulations.

In necessary case, the BOM shall have the rights to organize the comments acquisition from domestic and foreign consultants before making decision on important matters under the authority of BOM. Budget for pursuing opinions from consultants is stipulated at Financial rules of the Company.

Article 25. Responsibilities of members of BOM

Members of BOM shall take responsibilities towards the Owner and the laws for the decisions made by BOM if those decisions may cause damages to the Company and the Owner, except for members who vote to disagree on such decisions.

Article 26. Standards and conditions of Members of BOM

Standards and conditions for Members of BOM shall be in compliant with existing regulations of the Government and the City regarding standards for corporate management officers.

Article 27. Appointment, dismissal and replacement

1. Appointment:

Members of BOM shall be appointed by the Owner on the basis of Company's requests. Working term for each member of BOM shall be 05 years. Members of BOM can be considered for re-appointment by the Owner.

2. Dismission:

Members of BOM shall be dismissed in the following cases:

- a. Incomplete of tasks assigned by the Owner.
- b. Violating the laws to be prosecuted or cases of dismissing or replacing in accordance with regulations in the AOI of the Company; in this case, the BOM shall have the right to request the Owner to supplement and replace members in BOM.
- c. Have insufficient capability and knowledge for assigned positions; loss or restrict of civil behavior capability.
- d. Dishonest in examinations or abusing positions, authorities to benefit themselves or others.
- e. Putting the Company into one of following cases: consecutive loss in 2 years; unable to pursue target Return on equity of Government in 2 years or there is one among 2 years profitable or breakeven, except for the case of loss or decrease of profits on Government equity due to objective reasons to be explained concretely and accepted by competent authorities.
- f. Other cases as regulations.

3. Replacement:

Members of BOM shall be replaced in the following cases:

- a. Apply for resignation.
- b. There are decisions on transferring or allocating another positions.
- c. Other cases as regulations.

Article 28. Chairman of BOM

1. Functions, responsibilities and authorities

a. Represent the BOM to sign to receive capital, land and other resources that the Owner invest into the Company; manage the Company in compliance with Resolution, Decision of BOM.

b. Organize to study on the development strategy, long-term plan, large scale investment projects, alternatives for personnel reformation and key personnel of the Company to submit to BOM.

c. Prepare operation program, plan of the BOM; make decision on program, agenda of meetings and materials for meetings; call and chair meetings of BOM.

d. Represent BOM to sign resolutions, decisions of BOM.

e. Organize to monitor and supervise the implementation of Resolutions and Decisions of BOM; have the right to suspend Decisions made by General Director which are contrary to Resolution and Decision of BOM, the AOI of the Company and be responsible towards the BOM and the laws for his/her decisions.

f. Execute other responsibilities and authorities as classified and authorized by BOM of the Company, the Owner and as regulations.

2. Appointment

Chairman of BOM shall be appointed by the Owner by selecting among members of BOM.

Chairman of BOM can take position of General Director at the same time.

3. Dismissal, replacement

Chairman of BOM shall be dismissed or replaced as stipulations at clause 2, 3 of Article 27 in this AOI.

4. Salary, allowances, rewards and other benefits

Chairman of BOM shall be entitled to salary, rewards and other benefits on the basis of existing regulations of the Government and the City.

SECTION II

GENERAL DIRECTOR

Article 29. Functions of General Director

General Director is person who operates daily works of the Company

following objectives, plans and Resolutions, Decisions of BOM, which are in compliant with the AOI of the Company; be responsible towards the Owner, BOM and the laws for the implementation of assigned rights and obligations as stipulated in this AOI and relevant regulations.

Article 30. Responsibilities and authorities:

1. Prepare development strategies, long-term and annual plans that the Company reports to BOM, in order to submit the Owner for approval; develop Plans about organization of management, internal management rules, functions and responsibilities of supporting structure of the Company; business associating alternative between the parent Company and affiliated companies whose charter capital is totally owned or dominant shares, dominant contributing capital by the parent Company, to submit BOM for decision in accordance with the authority, and complying with regulations.

2. Make decision on investment projects, purchasing, selling, lending, borrowing and other contracts which are valued as classification or authorities of the BOM.

3. Develop methods to mobilize capital, to use capital and assets of the Company to invest into out of the Company; invest, contribute capital to establish other Companies, buy shares of or other company as well as other types of investment to report to BOM, in order to submit the Owner for decision making as authorities.

4. Make decision to select, appoint and re-appoint; dismiss; reward; punish; resign and retire; make decision on salary level, rewards and other benefits for Deputy Managers of subordinate Departments/boards/units and equivalent ones of the Company.

5. Request BOM to submit to the Owner to appoint, re-appoint; dispatch, circulate, dismiss, reward, punish, resign, retire; make decision on salary, rewards and other benefits to Deputy G. Director, Chief Accountant and Auditors of the Company.

6. Request BOM to make decision on appointment, re-appointment, dispatching, circulating, dismissal, rewarding, punishing, resigning, retiring; make decision on salary, rewards and other benefits to Managers of subordinate Departments/boards/units and equivalent ones of the Company; assign representative of contributing capital of the Company in other enterprises.

7. Develop norms of economic-technique, product standards, unit price for salary applicable in the Company and its subordinate units, in compliant with regulations of the Government, and submit to BOM for approval; check conformity during the implementation of norms, standards and unit price as stipulated in Company's internal regulations.

8. Organize to implement production, investment plans, and make decision on solutions for market development, promotion and technology; Control the operation of the Company in order to execute Resolutions and Decisions made by BOM and the Owner.

9. Sign civil and economic contracts of the Company. For contracts which are valued more than the level of authorization of the General Director as stipulated at clause 2 and 3 of this Article, the General Director shall only sign after there are Resolutions or Decisions of BOM or of competent authorities.

10. Report BOM about operation and business results of the Company, and other issues under the authority of BOM as stipulated in Article 23 of this AOI; execute the propaganda of financial statements as stipulated by Ministry of Finance.

11. Be under the inspection and supervision of the Owner, BOM, competent government organizations towards the implementation of functions and obligations as stipulated in Enterprise Law and other regulations.

12. Be entitled to apply necessary methods in urgent cases and need to promptly report to BOM and competent Government organizations.

13. Rights: receive salary, rewards and other benefits as existing regulations of the Government and the City.

14. Make decision on other matters as regulations.

Article 31. Appointment, dismissal and replacement

1. Appointment

a. General Director is decided by the Company Owner to appoint, re-appoint, transfer, rotate, demote, dismiss, reward, discipline, terminate, retire, determine salaries and bonuses, and allowances and other entitlements on the proposal of the Chairman of the Board of Members. General Director's term of office shall be 05 (five) years. The General might be considered to re-appoint.

b. The person who is selected to be General Director shall meet the standards and conditions in accordance with the current regulations of the State and the City on enterprise management personnel.

2. Dismissal

a. The Owner shall decide on dismissal before the term of the General Director based on the provision in point b of sub-clause 2 of this Article.

b. T General Director shall be dismissed before his term of office in the following cases:

- Let the Company fall into one of the following cases: consecutive losing in 02 years; Company ranking Class C in 02 (two) consecutive years: not reaching the targeted rate of return over the capital invested by the State in 02 (two) years or between 02 years having 01 year of profit or of no gain-no loss, except loss or profit reduction over the capital invested by the State due to objective reasons explained in detail and accepted by the competent authority.

- The company falls into bankruptcy but not submit application form to request for bankruptcy under the legal provisions of bankruptcy.

- Not complete tasks or targets assigned by the Board of Members.

- Dishonesty in enforcement of powers or abusing his powers and rights

to get benefits for himself or for others; dishonest reporting on financial status of the Company 02 (two) times or more, or one time but seriously distort the financial condition of the Company.

- Lost or limited civil act capacity.
- Be sentenced by court judgment or decision that has legal effect.
- Violate resolutions and decisions of the Board of Members, the charter of organization and operation of the Company.
- Other cases prescribed by law

3. Replacement

- Be volunteer to resign.
- When decided to move or arrange with other jobs.
- Other cases prescribed by law.

SECTION III AUDITOR

Article 32. Appointment and re-appointment

The Owners of the Company appoints no more than 03 (three) Auditors for a term of not more than 03 (three) years; the Owners of the Company appoints one person generally in charge of making work plan, allocating and allocating works of the Auditors. The Auditors may be considered for re-appointment.

Article 33. Tasks, rights and obligations of the Auditor

1. Task

a. To check the lawfulness, honesty and diligence of the Board of Members and the Company in performing owner's rights, and in management and operation in the Company, including the following contents:

- Re-organization, transfer of ownership, dissolution and requirement of bankruptcy for the company; new establishment of a subsidiary to be one member limited liability company; contribution, holding, increase or decrease in capital of the company to another company; establishment, reorganization and dissolution of its branches, representative offices and dependent accounting units; receiving enterprise volunteer to participate in working as a subsidiary company and associated company;

- Implementation of the Charter of the Company;
- Implementation of goals, tasks and business fields; business strategy and plans and investment and development plan in 5 years and annual plan of the Company;

- Increase of the charter capital, transfer of part or all of the Company's charter capital to institutions and individuals;

- Preservation and development of the Company's capital;
- Implementation of investment projects, sale contracts, borrowing, lending contracts and other contracts of the Company;
- Implementation of financial regime, income distribution, setting up and using the funds of the Company under the provisions of law;
- Other contents specified by the owner.

b. To appraise financial statements, business performance, management and other reports before they are submitted to the Owner of the Company or relevant state agencies; submit reports on examination thereof to the Company Owner;

- To make requests to the Company Owner for change and addition of the organizational structure of business management and performance of the Company.

c. Other tasks specified in the Company Charter or as requested or decided by the Company Owner.

2. Rights

a. Auditors shall be entitled to request any dossiers and documents of the Company at the headquarter, or the branches or representative office for study and review for execution of tasks as prescribed. In case it is necessity to review records and documents of subsidiary and associated companies, the Auditor shall coordinate with the representatives of the capital part of the parent company in subsidiary and associated companies after obtaining consent of the owner

b. The Auditor shall be provided with full information, documents and reports on the contents under the jurisdiction of the Board of Members, General Director relating to operation and business execution of the Company and shall perform other duties assigned by the owner

c. The Auditor shall attend in periodical meetings and meetings of the Board of Members, the Board of Directors, conferences related to implementation of the Auditor's tasks in the company. The Auditor participating in the meeting can make a statement but not vote, unless otherwise stipulated in Paragraph 1 of Article 75 of the Law on Enterprises

d. The Auditor shall be entitled to use the seal of the company to stamp on documents and materials within the scope of functions, duties and powers of the Auditor. The company shall be in collaboration with the Auditor to build rules on seal usage to ensure compliance with the laws

e. The Auditor is trained for controlling profession. Where necessary, the Auditor is entitled to request for consultation of experts and institutions for activities of the Auditor after getting written consent of the owner. The cost of hiring consultants, professional organizations and other operating expenses of the Auditor shall comply with expenditure framework decided by the owner in the Working Rules of Auditor and shall be included in costs of production and business enterprise by law.

3- Obligations

a. To comply law, the Company's Charter and provisions of the owners in implementation of assigned rights and duties. Auditors are responsible by law

and to the owner in performance of their rights and duties

b. To implement rights and duties assigned honestly, diligently and at best to ensure maximally legal benefits of the Company and the owner of the company.

c. To be loyal to the interests of the company and the company owner. To manage and keep confidential of information under provisions of the owner and regulations of the company; Not allowed to take advantage of assigned power to obstruct operation and business activities of the Company; Not allowed to use information, know-how, business opportunities of the Company; Not allowed to abuse their positions, titles and assets of the Company for personal gain or for benefits of other organizations and individuals.

d. To gradually grasp the situation, gather information and report timely, completely and accurately to the owner on the enterprises that the Auditors and the relevant persons of the Auditor controls or have shares or dominant capital share. This notice is posted at the headquarters and branches of the Company.

dd. To make periodical or unscheduled reports at request of the owner on situation, business performance results, financial issues of the Company and carry out assigned tasks.

e. Proactively report and timely recommend to the owners of unusual activities contrary to laws and regulations of the owner; to be responsible to the owners and bylaw for intentional acts to ignore or covering up violations

f. Other obligations prescribed by the Working rules of the Auditor, relevant law and the company charter.

Article 34. Standards and conditions

1. Standards of the Auditor are in compliance with the current regulations of the State and City.

2. Condition: The Auditor shall not simultaneously hold position of management and administration of the enterprise or shall not be a person related to the management and administration of the enterprise, including:

a. Mother company, management person of the mother company and person who has power to appoint such management person to the subsidiary company.

b. Persons or groups who have the ability to influence decisions and activities of the enterprise through enterprise management agencies.

c. Enterprise management person.

Article 35. Remuneration, salary and other benefits of the Auditor

The Auditor shall enjoy remuneration, salary and other benefits in accordance with current regulations of the State and the City

SECTION IV

OBLIGATIONS. RESPONSIBILITIES AND RELATIONSHIP BETWEEN THE BOARD OF MEMBER AND THE GENERAL

DIRECTOR

Article 36. Relationship between the Board of Members and General Director in management and operation of the Company

1. When implementing Resolutions and Decisions of the Board of Members, if problems that do not benefit to the Company are detected, the General Director shall report to the Board of Members to review and revise Resolution and Decisions. The Board of Members shall consider proposals of the General Director. If the Board of Members does not revise resolution and decisions, the General Director still have to follow but have right to make requests to the Owner of the company.

2. Within 15 days from the end of the quarter and 30 days after the end of the year, the General Directors must submit a written report on the Company's activities and orientations expected to perform in next term to the Board of Member.

3. The Chairman of the Board of Member has right to attend or assign the member of the Board of Member to participate in periodical meetings and meetings for preparation of schemes to submit to the Board of Members chaired by the General Manager. The chairman of the Board of Member or the representative has right to make a statement but not to conclude the meeting.

4. In case the General Director who is not a member of the Board of Members is invited to the meeting of the Board of Member and has right to make a statement but not to vote.

Article 37. Obligations and responsibilities of the Chairman of the Board of Member and General Director.

1. The General Director shall take responsibility to the Company Owner and the Board of Members and by law for the his assigned rights and obligation.

2. The members of Board of Members shall take responsibility to the Company Owner and by law for decisions of the Board of Members (except the members who do not vote for that decision) regarding result and effectiveness of the Company's operations.

3. The chairman of the Board of Member, Members of the Board of Members and the General Director have the following obligations:

a. To honest and responsible for assigned tasks and rights for benefits of the Company and of the State.

b. Not allowed to abuse their positions and powers to use capital and assets of the Company to make profits for themselves and others; Not allowed to give the company's assets to the others; Not allowed to disclose the Company's confidential while is working as Members of the Board of Members or General Director and within a period of at least three years after the members leave the Board of Members or stop being the General Director of the Company, unless otherwise the Board of Members approves.

c. Not allowed to let his/her wife or husband, father, adoptive father, mother, adoptive mother, child and adoptive child, siblings hold a position of Chief Accountant or Treasurer of the Company, or if letting his/her wife or husband, father, adoptive father, mother, adoptive mother, child, adoptive child, and siblings hold a position of Chief Accountant or Treasurer of the Company, he/she has to resign being the Chairman of the Board of Members, Members of the Board of Members, the General Director of the Company. It is required to inform the person who appoints General Director with economic contract, labor contract, civil contract of the Company signed with the Members of the Board of Members, General Director, wife or husband, father, adoptive father, mother, adoptive mother, adoption, brother, and sisters of the members of the Board of Members and Director General. Where contracts that are not yet signed are found to be self-interest purpose, it is entitled to request the Members of the Board of Member and the General Director not to sign such contracts, if contract which have been signed shall be deemed to be invalid and the Member of the Board of Members and General Director shall pay damages to the Company and shall be treated by law.

d. When the Company fails to pay all due date debts and other property obligations, the General Director of the Company shall report to the Board of Members, to find out ways to deal with difficult financial situation and inform financial situation of the Company to all creditors; the Chairman and Members of the Board of Members and the General Director of the Company shall not allowed to decide to raise salary, not allowed to deduct profit paying bonuses to managers and workers.

e. When the Company fails to pay all due debts and other property obligations without implementation of provisions at Point c of this Article, he or she shall be subject to personal liability for any damage caused to creditors.

f. Where the Chairman of the Board of Members, the Member of the Board of Members or the General Director of the Company who violate the charter, or decide beyond their authorities, and abuse their positions and powers, causing damages to the Company and the State shall compensate under the provisions of law and this Charter. The Owners of the Company shall determine compensation level.

4. When violating any of the following cases but not serious enough for criminal prosecution, the Chairman and the Members of the Board of Members, the General Director of the Company shall not be rewarded, and not salary increase and shall be dealt with discipline, depending on the violation level, including:

- a. Company suffers loss.
- b. Loss of the State capital.
- c. Investment project decision is not effective, unable to recover investment fund and pay debts.
- d. Unable to guarantee salaries and other benefits for employees in the Company under provisions of labor law.

e. Mistakes occurring on the management of capital and assets, regulations on accounting, auditing and other modes prescribed by the State.

5. The Chairman of the Board of Members who is irresponsible and fails to comply with the provisions of point 2 of Article 49 of the Enterprise Law in 2005 which leading to a breach of Clause 4 of this Article shall be dismissed depending on the consequences of the breach and shall pay damages under the provisions of law.

6. Where letting the company suffer from losses in two consecutive years, or failing to achieve the rate of return over invested capital of the State in two consecutive years or in a state of one profit year and loss year but not overcome, except the case of loss or profit reduction over invested capital of the State approved by the competent authorities; loss or profit reduction over invested capital of the State due to objective reasons to be explained and accepted by the owners of the company. New investment to expand production and innovate, technology, depending on the seriousness of the violation and consequences, the Chairman of the Board of Members and the General Director of the Company shall be salary lowered or dismissed, and must pay damages under the provisions of law

7. Where the company falls into bankruptcy condition that General Director of the Company does not apply form for bankruptcy, the General Director shall be dismissed and responsible under the provisions of law. Where the General Director of the Company does not apply form for bankruptcy that the Board of Members does not request the General Director to apply for bankruptcy, the Chairman of the Board of Members and the Members of the Board of Members, and the General Director shall be dismissed.

8. The Company is subject to re-organization, dissolution or change of ownership without conducting procedures of reorganization, dissolution or change of ownership, the Chairman of the Board of Members, the Members of the Board of Members, and General Director shall be dismissed.

9. The Chairman of the Board of Members, the Members of the Board of Members, and General Director shall perform other obligation under provision of laws.

SECTION V

VICE GENERAL DIRECTOR, CHIEF ACCOUNTANT, SUPPORTING SYSTEM AND SUBSIDIARY UNITS

Article 38. Vice General Director and Chief Accountant

1. Vice General Director:

a. Functions and tasks:

Vice General Director assists the General Director to control one or some activity sector of the Company in accordance with allocation and mandate of the General Director.

The Vice General Director shall take responsibility to the Company Owner, the Board of Member, the General Director and by law for his/her assigned tasks.

b. Standard:

The Vice General Director of the Company shall execute in accordance with the regulations the State and the City on personnel.

c. Appointment and dismissal:

- Appointment: The Vice General Director is assigned by the company owner upon the request of the Chairman of the Board of Members and the General Director of the company with a term of 5 years.

The Vice General Director is considered to re-appoint if assigned tasks of the previous term have been completed.

- Dismissal: The Company Owner shall decide to dismiss the Vice General Director upon the request of the Chairman of the Board of Members and the General Director of the company in the following cases:

+ Law violation to be prosecuted or violation of regulations on dismissal cases.

+ Lost or limited civil act capacity or be decided to move and arrange with other work by the state authorized agency.

+ Dishonesty in enforcing rights or abuse power to gain for themselves or for other people, disclose secrets, causing damages to the company.

+ Not complete task of organizing execution of business and operation assigned by the General Director of the Company, causing the Company unfulfills the annual development targets that the Company has decided.

+ Other cases prescribed by law.

d. Rights:

The Vice General Manager shall receive wages, bonuses and other benefits under the current regulations of the State and the City.

2. Chief Accountant:

a. Functions and tasks:

Chief Accountant of the Company shall assist the Board of Members and the General Director of the Company in management, inspection, monitoring, and implementation guidelines on financial and accounting profession of the Company as prescribed by law.

The Chief Accountant is responsible to the Company owner, the Board of Members, and the General Director of the Company and the law for the assigned tasks or authorization.

b. Standard:

The Chief Accountant implements the current regulations of the State and

the City on personnel organization activities.

c. Appointment and dismissal:

- Appointment: The Chief Accountant is decided by the Company Owner to appoint or dismiss upon the request of the Chairman of the Board of Members and the General Director of the company with a term of 5 years.

The Chief Accountant is considered to re-appoint if assigned tasks of the previous term have been completed.

- Dismissal: The Company Owner shall decide to dismiss the Chief Accountant upon the request of the Chairman of the Board of Members and the General Director of the company in the following cases:

+ Law violation to be prosecuted or violation of regulations on dismissal cases.

+ Decision made exceeded the authority provided in financial regulations of the Company and in violation of state regulations led to serious consequences for the financial operations of the Company

+ Lost or limited civil act capacity, apply for resign or decided to move and arrange with other work by the state authorized agency.

+ Dishonesty in enforcement of powers or abusing his powers and rights to get benefits for himself or for others. Disclosing confidential caused damages to the company. Dishonest reporting on financial status of the Company two (02) times or more, or one time but seriously distort the financial condition of the Company.

+ Not complete tasks assigned by The Board of Member and the General Director of the Company, causing the Company unfulfills tasks, targets and business and operation plan assigned by the Company Owner.

+ Other cases implemented as prescribed by law.

d. Rights:

The Chief Accountant shall receive wages, bonuses and other benefits under the current regulations of the State and the City.

Article 39. Conditions of involvement in other company for The Chairman of the Board of Members, full-time members of the Board of Members, General Director, Vice- General Director, and Chief Accountant of the Company.

1. The Chairman of the Board of Members, full-time members of the Board of Members, General Director, Vice- General Director, and Chief Accountant shall be not allowed to hold concurrently the titles of President, General Director, Vice- General Director, and Chief Accountant of one member liability limited company under the Mother company.

2. The Chairman of the Board of Members, full-time members of the Board of Members, General Director, Vice- General Director, and Chief Accountant shall be allowed to manage the equity capital amount of the

company in the joint stock company.

3. Other cases implemented as prescribed by law.

Article 40. Supporting system

1. Specialized departments have functions to advise and assist the Board of Members and the General Director in operation control and management of the Company.

2. Concrete tasks of the specialized departments is stipulated in the internal management process of the Company built up by the General Director and submitted to the Board of Members for approval, the signed for issuance by the Chairman of the Board of Members.

3. During operation, the General Director may request the Board of Members to change the organizational structure, number of personnel, functions and duties of the specialized Departments in accordance with operation and business demand of the Company and by law. Members of the Board of Member shall consider and decide on changes requested by the General Director of the Company.

CHAPTER V

CAPITAL MANAGEMENT AND ASSIGNING THE REPRESENTATIVE TO MANAGE CAPITAL AMOUNT INVESTED IN OTHER ENTERPRISE

Article 41. Capital invested in other enterprises

1. The Company's capital invested in other enterprises, including cash value of land use rights, value of tangible or intangible assets owned company invested in other enterprises.

2. The Owner Company's capital investing and contributing in other enterprises is assigned to Company.

3. The value of state capital invested in divisions of the Company is equitized or converted into two member liability limited company.

4. The Capital borrowed by the Company for investment.

5. The re-investment capital from divided profits.

6. Other capital as prescribed by law.

Article 42. Rights and obligations of the Company in participation of investing and contributing capital in other enterprises

1. The Company shall be the owner of the equity capital in other enterprises by law.

2. Rights and obligations in management of the equity capital in other enterprises

a. Rights and obligation of the Company:

- To decide on capital investment and contribution, increase, or decrease as prescribed by relevant laws, this Company Charter and the Charter of the other enterprise which the Company has equity.

- To decide on assignment, change, dismissal, reward and discipline to the person represented for the equity capital of the company in other enterprise; To introduce the representative to be candidate for the Board of Directors and the Board of Auditors of the enterprise having equity capital of the Company in accordance with the provisions of the Charter of the Company and the relevant laws in Vietnam and oversea countries.

- To decide in allocation of the capital amount relative to the number of votes for each representative.

b. Rights and obligation of the Chairman of the Board of Member of the Company:

- To decide on assignment, change, dismissal, reward and discipline to the representative who manages invested capital of the Company upon request of the General Director.

- To assign task, instruct and request the representative to perform the following contents:

+ Orientation to implement the targets and plans to coordinate in investment and operation with the enterprises that have the company's equity capital .

+ Periodical or unscheduled report on financial status, investment result business performance results and other issues.

+ Report on critical issues of the enterprise that has capital of the Company in order to ask for advices before voting.

+ Report on usage of capital, market, technological know-how and other issues for development orientation and goals of the Company.

- To resolve requests of the representative of the Company in the enterprise having equity capital of the Company.

- To collect profits and bear losses from the equity capital in the other enterprises with the company's equity capital. Capital withdrawn including interest shall be revenue accounted as stipulated. In case of re-organization, the Company shall manage the equity capital in accordance with laws.

- To check and monitor usage of the Company's capital and take responsibility for usage efficient, maintenance and development of the company capital in the enterprise having the equity capital of the Company.

- Other rights prescribed by law.

Article 43. Rights and obligations of the capital management representative.

1. To directly involve in running for election in the management and

administration system of other enterprise under the provisions of the Charter of that enterprise.

2. When performing the rights of shareholders, the equity capital partners, joint venture partners in General Meeting of Shareholders, the capital contributed members, the joint venture parties have to use the rights in prudent manners in accordance with direction of the capital owner.

3. To monitor and supervise business and financial status, business performance results of other enterprises as provided by law and in accordance with the enterprise charter. To perform periodic reports as required by the owner on business performance situation and results, and financial matters of other enterprises, and on implementation of the tasks assigned by the capital owner.

4. The person who engages in the management and administration Board of other enterprise shall study and propose operation directions and measures in the other enterprises to submit the Capital Owner for approval. For important matters of the enterprise to be discussed in the Board of Directors, Board of Management, the General meeting of shareholders or members of the joint venture capital contribution such as business direction, strategy and plan, mobilization of additional equity and capital, dividends and so on, the representative shall actively reports to the capital owner for written comments. The representative who is responsible for giving speech in the meeting shall give the speech in accordance with the directive opinion of the Owner. Where more than one representative joining in the Board of Directors, the Board of Management of other enterprises, these representatives shall implement the directive opinions of the owner uniformly.

5. The representatives in the enterprise having the company's dominant equity capital shall be responsible to direct that enterprise to go with proper objectives and orientation of the Company and shall use the dominant right or veto right to determine additional business fields. When the enterprise is detected to deviate from the objective and orientation of the company, the representative shall immediately report to the owner and propose countermeasure. After the capital owner approves, it is necessary to immediately implement to lead the enterprise to be promptly in the right direction and objectives.

6. To be responsible to the capital owner for the assigned tasks. In case of lacking of responsibility, taking advantage of tasks and powers, causing damages to the capital owners, the representative shall bear responsibility and material compensation as prescribed by law.

7. To perform reporting regime to the Board of Members and the General Director Chief Executive Officer on efficient use of the equity capital.

8. To execute the rights and obligations prescribed by law, the Enterprise Charter and the Company Charter.

Article 44. Standards, conditions and rights of the capital representative.

1. The person who is assigned to be the representative of the equity capital

in other company having equity capital of Hanoi Urban railway one member Co., Ltd shall meet all standards and conditions as prescribed by the State and the City.

2. The person who directly the equity capital of the Company shall enjoy the regime of salary and allowances and responsibility allowance and other regimes as prescribed by the State, the City and the Company.

CHAPTER VI

SUBORDINATE DEPARTMENTS, DIVISIONS AND UNITS

Article 45. Subordinate departments, divisions and units of the Company

Hanoi Urban railway one member Co., Ltd has Subordinate departments, divisions and units by the time of approving the Charter (refer to the enclosed Appendix).

Article 46. Relationship between the Company and the Subordinate units.

1. The dependent accounting unit shall perform accounting decentralization mode stipulated by the Company, allowing to create revenue sources from implementation of service contracts, scientific research and technological transfer training with units out or in the Company. The unit shall operate in accordance with the rules built up by the Company General Director and approved by the Board of Members.

2. The subordinate units are entitled to sign economic contracts and perform business activities and financial activities and organize personnel in accordance with mandate of the Company prescribed in the Rules of the dependent accounting unit built up by the Company General Director and approved by the Board of Members. The Company shall be responsible for financial obligation arising to commitments of the dependent accounting units.

3. The dependent accounting units shall not have separate capital and assets. All capital and assets of the subordinate units are under the company ownership. Transferring capital and assets to the subordinate units shall be based on the subordinate units' business alternatives approved by the Board of Members of the Company.

CHAPTER VII

RIGHTS AND OBLIGATIONS OF THE EMPLOYEES

Article 47. Rights of the Employee

1. The Employees shall have rights to manage the Company through the

following organizational forms:

- a. General Meeting of the Company's employees.
- b. Trade Union organization of the Company.
- c. People's Inspection Board of the Company.
- d. Executing rights of petition, claim and accusation by law.

2. The employee or the employee's representative may participate in discussions, make suggestions before the General Director decides or request the Owner of the Company to decide on the following issues:

- a. Orientation, planned mission, business and operation development method, re-arrangement of operation and re-organization of the Company's employees.

- b. Plans of equitization, diversity or transformation of company ownership.

- c. Regulations and Rules of the Company directly relating to the rights and obligations of the Employees by law.

- d. Labor protection measures to improve working conditions, physical and spiritual life, environmental sanitation, training and re-training of the employees.

- e. Vote for trust of the titles of the Chairman and the Members of The Board of Members, General Director, Vice General Director, Auditor, and Chief Accountant of the Company and other management titles upon request.

3. Through the General Meeting of the Company's employees, the Employees are entitled to discuss the following issues:

- a. Contents or modification and addition to the contents in the Collective Agreement, Regulations on salary and bonus payment; The employees shall assign their representative to negotiate and conclude collective labor agreements with the General Director of the Company

- b. Rules on use of welfare and reward funds, and the other targets of the Company directly related to the obligations and rights of the employees in accordance with legal provisions .

- c. Evaluation of operation result and action program of People's Inspection Board of the Company.

- d. Vote for People's Inspection Board of the Company.

4. Participation in other contents in accordance with legal provisions .

Article 48. Obligation of the employees

1. The employees are obliged to perform labor contract signed with the General Director or the person who is authorized by the General Director of the Company, and to perform labor regulations, collective labor agreements and other relevant regulations related to the employees ratified by the Company General Meeting of the employees.

2. The employees must not stop learning and improving their

professional skills to complete the assigned work.

3. The employees shall abide by all policies and laws of the State and the City and plans to re-organize business operation, and plans of the company employee reorganization.

4. Perform other obligation in accordance with current regulations of the Labor Code and the legal regulations of the Company.

CHAPTER VIII

FINANCIAL MANAGEMENT OF THE COMPANY

Article 49. Financial Operation Mechanism of the Company

Financial operation mechanism of the company shall be executed in accordance with the current financial rules approved by the Company Owner or current legal provisions.

CHAPTER IX

RE-ORGANIZATION, CHANGE, DISSOLUTION AND BANKRUPTCY

Article 50. Re-organization of the Company

Reorganization forms of the company include: merger, consolidation, division, separation and other forms prescribed by law.

Reorganization of the Company is decided by the Company Owner or submitted by the Board of Member for consideration and decision on the basis of law.

Article 51. Change of the Company owner

1. The Company changes the owner by the following forms:

- a. The owner transfers all charter capital to other organization.
- b. Equitization of all or parts of the Company.
- c. Sale all or parts of the company.
- d. Delivering the Company to the employee collective.

2. When decision on changing the owner, the Company shall carry out changing in accordance with sequence and procedures of the law on ownership change.

Article 52. Dissolution of the Company

1. The Company shall be dissolved in the following cases:

- a. Consecutive loss but not yet in the status of losing ability to pay due debts.
- b. Unable to perform obligations prescribed by the State after application of the necessary measures.

- c. Unnecessary to continue maintaining the Company.
2. Sequence and procedure of the company dissolution is executed in accordance with current provisions of law and of the Company Owner.

Article 53. Bankruptcy of the Company

To be carried out in accordance with law on bankruptcy.

**CHAPTER X
BOOKS AND RECORDS OF THE COMPANY**

Article 54. Right to access books and records of the Company

1. The Board of Members is responsible to annually report to the Owners on the required documents as stipulated by law.

2. In extraordinary cases, the Owners of the Company may request in writing the Board of Members to provide any records or documents relating to implementation of the rights of the owner as stipulated by law and by this Charter

3. The General Director shall be responsible to prepare and report to the Board of Members to provide with records and documents upon request of the Company Owner. The Chairman and the Members of the Board of Member who asks the General Director to provide with records and document shall prepare Regular Meeting of the Board of Members. The Chairman and the Members of the Board of Members have rights to request the General Director, Vice General Director and management officials to provide all records and documents related to performance of functions and tasks of the Board of Members.

4. The General Director shall be responsible to organize to keep and secure records and documents of the Company.

5. The Employees in the Company are entitled to learn about information of the company through General Meeting of the Employee and People's Inspection Board of the Company.

6. Other cases as stipulated by law.

Article 55. Information publicity

1. The General Director of the Company shall implement provisions of law and the organization and working rules of the Company on information publicity and responsibility for implementation of such regulations. The records and documents storing division of the Company can only provide information to the outside by decision of the General Director or the person authorized by General Director of the Company.

2. Forms, contents and location to send information shall comply with provisions of law.

3. Where inspection and examination are required by the State authorized agency, the General Director of the Company is responsible for providing information in accordance with law on inspection and examination.

CHAPTER XI
INTERNAL DISPUTE SETTLEMENT
AND REVISION OF COMPANY CHARTER

Article 56. Internal dispute settlement

Internal dispute settlement of the Company or disputes concerning relationship between the Company Owner and the Company, between the Company Owner of the Company and the Board of Members, between the Board of Members and the General Director of the Company, and supporting system shall be based on the Charter and provisions of law.

Article 57. Revision and Addition of the Charter

1. All revision and addition to the Charter shall be decided by the Owner upon request of the Board of Members of the Company.

2. The Board of Members is entitled to request the Owner for charter revision and addition plan.

CHAPTER XII
IMPLEMENTATION

Article 58. Implementation validity

1. This Charter includes 12 Chapters and 58 Articles shall be legal basis for organization and operation of the Hanoi Urban Railway One Member Co., Ltd. All individuals and Subordinate units of the Company are responsible for implementation of this Charter.

2. This Charter shall take effect from signing date.

3. The Subordinate units of Hanoi Urban Railway One Member Co., Ltd shall buildup Working rules of the unit based on provisions of the relevant laws with its legal form not contrary to the Charter, and submit to the competent authority for approval.

4. In cases where provisions of law relating to activities of Hanoi Urban Railway One Member Co., Ltd. has not been specified in the Charter or in the case of new legal provision different from clauses and articles of the Charter, such provisions of law shall be automatically applied. Hanoi Urban Railway One Member Co., Ltd. shall submit to the Owner for amendment and supplementation.

LIST OF DEPARTMENTS. DIVISION, AND SUBORDINATE UNITS OF
HANOI URBAN RAILWAY ONE MEMBER CO., LTD

1. Department and division of the Company:

- Administration Department;
- Organization and Human Resource Department;
- Financial and Accounting Department;
- Sales and Public Relation Department;
- Planning and Project Department;
- Common Train Operation Department;
- Maintenance and Technical Division;
- Safety and Quality Department.

2. Site Operation Units under the Company:

- Line 2A Urban Railway Site operation Unit;
- Line 2 Urban Railway Site operation Unit (not yet established shortly);
- Line 3 Urban Railway Site operation Unit (not yet established shortly);

THE SAFETY MANAGEMENT RULE FOR URBAN RAILWAY TRANSPORTATION (DRAFT)

PART 1: GENERAL PROVISIONS

Chapter 1: Objectives

Article 1: Objectives

1. The regulations aims to establish a Safety Management System and improve urban railway Safety standards by prescribing policies and methods of urban railway operation.
2. Safety of railway transportation will be ensured by following the Regulations, related regulations and rules are developed by departments of the Company, and in compliant with Vietnam Railway Law, other related laws and regulations, standards, technical regulations which are stipulated by MOT.

Chapter 2: Basic policies to ensure safety of railway transportation

Article 2: Basic safety policies

1. President and board members shall seek to build systems and regulations to operate urban railways with safety-first mind, the establishment of management policies to ensure safety in every aspect such as railway facilities, vehicles, and employees.
2. President, board members and all the employees shall observe the following rules:
 - (1) Ensuring safety is the most critical in railway transportation.
 - (2) Observing laws and regulations is the basis of safety
 - (3) Serious and strict work attitude is essential for safety.
 - (4) In case of accidents, incidents occurred, or if there is risk of occurring accidents, incidents, it is necessary to prompt implement appropriate countermeasures, putting the most priority in lifesaving.
 - (5) Safety information is circulated sufficiently, quickly and correctively.
 - (6) Always be highly aware of safety and completion of works
3. Measures to maintain and improve safety for UR facilities, RS and other issues which have been developed based on policies in clause 1 of Article 2 will be reviewed from time to time based upon the implementation to ensure transport safety.

Chapter 3: Systems to implement and manage measures to ensure safety in urban railway transportation

Section 1: Organizational structures to ensure safety in urban railway transportation:

Article 3: Responsibilities of Board members, General Director, Deputy General Director

1. Board members will take final responsibility to ensure safety in urban railway transportation.
2. Board members shall set up a management system and establish measures to implement the tasks to ensure safety in urban railway transportation.
3. In formulating business plans relating to facilities, operation, personnel, investment, budget and others, General Director, Deputy General Director of the Company shall request managers and aforesaid managerial personnel in Article 4 to implement assessment over safety and feasibility.
4. Board members shall need to understand UR operation business and its management and implement improvements if necessary.
5. Board members shall respect comments and opinions of general safety managers.
6. To prepare for accidents, incidents cases, or risks of accidents, incidents, disasters as well as cases possibly causing difficulties to transportation safety, it is necessary to define the establishment of a Special Reacting Committee, and deciding on personnel in charge, reacting measures and other necessary items in compliant with scope, contents and notice to all employees.

Article 4: Organization structure

1. The organization structure relating to safety in urban railway transportation is shown as “safety management system (appendix 1)”, in which responsibilities and authorities of each in-charge person and each manager are as follows:
 - (1) General safety manager: control tasks to ensure UR transport safety.
 - (2) Operation safety manager: control operation-related matters under supervision of general safety managers.

- (3) Train crew manager: responsible for qualification and performance of train crew or drivers in Depot under supervision of the operation safety manager or RS manager.
 - (4) Manager of Business, PR department: responsible for general works at stations, under instruction of general safety manager
 - (5) Manager of Electricity, signaling, telecommunication department: responsible for works relating to electricity, signaling, telecommunication equipment, under instruction of general safety manager.
 - (6) Manager of civil works department: Responsible for works relating to civil works and architectures under instruction of general safety manager.
 - (7) Manager of station equipment, track department: Responsible for works relating to station equipment, track under instruction of general safety manager.
 - (8) Manager of Rolling stock department: responsible for works relating to RS under the instruction of general safety manager.
 - (9) Manager of Safety – quality department: responsible for works relating to measures to ensure safety and prevent accidents, incidents, under instruction of general safety manager.
 - (10) Manager of Finance – accounting department: responsible for works relating to finance, which are necessary for ensuring UR transport safety under instruction of general safety manager
 - (11) Manager of organization, human resources department: responsible for works relating to personnel management and training, in order to ensure transport safety, under instruction of general safety manager.
 - (12) Manager of Planning, project department: responsible for works relating to necessary business plan to ensure UR transport safety under instruction of general safety manager.
2. Nomination and dismissal of the above-mentioned managers and managerial personnel must be noticed to Board members and all employees, often updating, clarifying about transport safety related responsibilities and institutions.
 3. Managerial personnel and managers listed in clause 1 of Article 4 shall conduct works and manage the safety appropriately by close communications and sharing of necessary information about operation plan, facilities and rolling stock.

4. In case that managerial personnel and managers in clause 1 of Article 4 cannot execute their works due to accidents or other reasons, authorized persons and representatives of managers shall take over the tasks.

Article 5: Nomination and dismissal of general safety manager

1. General safety manager shall be nominated from those who met the requirements set by governmental regulations and have sufficient knowledge and experience of safety management. Usually, general director of urban railway company will take over this position.
2. General safety manager will be dismissed in the following cases:
 - (1) In case he or she does not meet the requirements any more due to transfer to a different position.
 - (2) In case that government regulator requests on dismissal
 - (3) In case they cannot continue the works due to illness, injuries or any other uncontrollable reasons.
 - (4) In case that there is possibility that general safety manager breaks any rules and it might damage urban railway transport safety if the managers stay at the position.

Article 6: Nomination and dismissal of UR operation manager

1. Operation safety manager will be nominated among those who meet requirements of government regulations. Usually, manager of integrated train operation department will take over this position.
2. Based upon clause 2 in Article 5, regulations on dismissal cases of operation safety manager will be applied.

Section 2: Responsibilities of general safety manager of the company

Article 7: Responsibilities of general safety manager

General safety manager has following responsibilities relating to urban railway transport safety:

- (1) Ensure safety of operation, equipment, rolling stock and appropriateness between departments, as well as comprehensively managing departments and monitoring transport works implementation, putting top priority on lifesaving.
- (2) Make sure all employees fully observe related laws and regulations and aware of safety-first policy.
- (3) Check the implementation and management of transportation, safety management system, and take improving actions if necessary.

- (4) Join important decision-making processes to ensure transport safety, express opinions necessary to ensure safety to board members, Deputy General Directors and related managers.
- (5) Gather necessary information regarding accidents and disasters and provide it to the operation safety managers, and other related managers or give them necessary instructions.

Article 8: Responsibilities of operation safety manager

1. In order to ensure safety, operation safety manager is responsible for the tasks relating to train operation, including developing and revising operation plan, using staffs on-board and RS, training for train crew, train operation management, collecting information about train operation.
2. Operation safety manager will nominate train crew manager from staff who manage train crew members and report to general safety manager.
3. Operation safety manager must coordinate with managers of other departments to confirm safety and feasibility in developing train operation plan and other related plans by considering conditions relating to personnel and facilities of operation, and RS.
4. Operation safety manager shall probably manage the training of operation related personnel.
5. Operation safety manager will closely communicate and coordinate with general safety manager to ensure safe train operation.
6. Operation safety manager shall share necessary information relating to operation to general safety manager and other related managers to ensure safety for train operation.

Article 9: Responsibilities of train crew manager

1. Train crew manager is assigned by operation safety manager and under instruction of operation safety manager, he/she will have following responsibilities:
 - (1) Relating to management, maintenance of qualification of train crew.
 - (2) Relating to periodical confirmation about education of qualification of train crew members and report to operation safety manager
2. Train crew manager assigned by RS department manager will be under instruction of manager of RS department and will have following responsibilities:

- (1) Relating to management and maintenance of qualification of drivers in depot
- (2) Relating to periodic confirmation on education of qualification of drivers in depot and report to manager of RS department.

Article 10: Responsibilities of manager of business, PR department

1. Manager of business, PR department is responsible as following, in order to manage station works, aiming at ensuring transport safety.
 - (1) Relating to operation at station
 - (2) Relating to provision of necessary information such as weather forecast, so that train can safety be operated
 - (3) Relating to management and maintenance of qualification of station staffs
2. When considering on preparation of transport plan and other related ones, Business, PR manager shall affirm safety and feasibility by considering overally the situation of station staffs, equipment and facilities at station.
3. Business, PR manager properly manages the training and education for station staffs.
4. Clause 5, 6 of Article 8 are also applicable for business, PR manager.

Article 11: Responsibilities of manager of electricity, signaling and telecommunication department

1. Electricity, signaling and telecommunication manager takes following responsibilities to manage and maintain electricity, signaling and telecommunication equipment, in order to ensure transport safety:
 - (1) Relating to development and changes in management system as well as management plan of maintenance and improvement of electricity, signaling and telecommunication equipment.
 - (2) Relating to the ensuring of compatibility between UR facilities, RS with operation.
 - (3) Relating to safety in maintenance and improvement of electricity, signaling and telecommunication facilities.
 - (4) Relating to sharing of necessary information for safe train operation such as weather and status of electricity, signaling and telecommunication equipment.
 - (5) Relating to maintenance of qualification of staffs to maintain, improve electricity, signaling and telecommunication equipment.

2. While reviewing maintenance plan, manager of electricity, signaling and telecommunication department shall need to confirm on safety and feasibility by overally considering conditions of related personnel and status of electricity, signaling and telecommunication equipment.
3. Manager of electricity and signaling, telecommunication department shall properly manage the training for personnel relating to electricity, signaling and telecommunication equipment.
4. Clause 5, 6 of article 8 are also applicable to manager of electricity, signaling and telecommunication department.

Article 12: Responsibilities of manager of station equipment, track department

1. Manager of station equipment, track department is responsible as following, to manage and maintain station equipment, track, ensuring transport safety:
 - (1) Relating to establishment, changes of management system as well as management plan of maintenance, improvement of station equipment and track.
 - (2) Relating to ensuring of compatibility between UR facilities, RS with operation.
 - (3) Relating to safety in maintenance and improvement of station equipment and track.
 - (4) Relating to sharing necessary information for safe operation such as weather forecast and status of station equipment, track.
 - (5) Relating to managing qualification of staffs in maintaining, improving station equipment and track.
2. While reviewing maintenance plan, manager of station equipment, track shall confirm safety and feasibility by overally considering conditions of personnel relating to station equipment, track and status of station equipment, track.
3. Manager of station equipment, track department shall properly manage the training and education for station equipment, track staffs.
Clause 5, 6 of Article 8 are applicable for manager of station equipment, track department.

Article 13: Responsibilities of manaer of Civil works department

1. Manager of civil works department has following responsibilities to manage and maintain civil works, in oder to ensure transport safety:

- (1) Relating to establishment, changes in management system as well as management plan of maintenance and improvement of civil works.
 - (2) Relating to ensuring compatibility between civil works, RS with operation.
 - (3) Relating to ensuring safety in maintenance, improvement of civil works
 - (4) Relating to sharing of necessary information for safe train operation such as weather forecast and status of civil works.
 - (5) Relating to management of qualification of staffs to maintain, improve UR civil works.
2. While reviewing management plan of maintenance, manager of civil works department must confirm the safety and feasibility by considering conditions of civil works' maintenance staffs and status of civil works.
 3. Manager of civil works department shall properly manage the training and education for civil works staffs.
 4. Clause 5, 6 of Article 8 are also applicable for manager of civil works department.

Article 14: Responsibilities of manager of RS department

1. Manager of RS department takes following responsibilities to manage the maintenance of RS, in order to ensure transport safety:
 - (1) Relating to establishment, changes of management system, as well as management plan of maintenance and improvement RS.
 - (2) Relating to ensuring compatibility between UR facilities, RS with operation.
 - (3) Relating to coordination between RS turning plan and operation plan.
 - (4) Relating to management of qualification of personnel to maintain, improve RS.
2. Manager of RS department shall nominate train crew manager from staff who are at management positions of drivers in depot, and report to general safety manager.
3. While developing usage plan of RS, manager of RS department must confirm the safety and feasibility by overally considering about RS staffs and status of equipment.
4. Manager of RS department shall properly manage the training and education for RS related staffs.

5. Clause 5, 6 of Article 8 are also applicable for mamaber of RS department.

Article 15: Responsibilities of Manager of Safety-Quality department

Manager of Safety – quality department shall have responsibilities of confirming the implementation and measures of management to ensure transport safety by implementing internal audit, promotion of measures to improve safety such as those to avoid recurrence.

Article 16: Responsibilities of Manager of Finance – accounting department

Manager of Finance – accounting department shall overally consider about the safety and other contents, developing estimation plan and other necessary ones.

Article 17: Responsibilities of Manager of organization, human resources department

Normally, Department of organization, human resources shall overally consider about improvement of safety, establishing HR plan, training plan which are necessary to ensure transport safety and others necessary.

Article 18: Responsibilities of manager of project, planning department

By considering overally about safety and implementation of necessary adjustments to develop and implement business plans and other necessary ones, manager of planning, project department shall manage progress of those above works.

Chapter 4: Implementation and management of tasks to ensure urban railway safety

Article 19: Report of work

1. Manager of safety – quality department often receive reports from operation safety manager and managers of other related departments regarding useful information to prevent accident's recurrence, unsafe activities, and those affecting transport safety, as well as reporting for acknowledgement of general safety manager.
2. Manager of safety – quality department shall try to share information from report received at clause 1 of this article to related departments.
3. All staff to share necessary information to ensure train operation safety.

Article 20: Measures to prevent accidents, incidents

1. General safety manager shall instruct to manager of safety – quality department for analyzing and adjustments of useful information in order to prevent recurrence of accidents, disasters, ensuring transport safety, discussing on necessary measures to prevent accidents, incidents.
2. General safety manager shall receive report as mentioned in clause 1 of Article 20, setting up necessary measures. As well as, based on viewpoint of improving awareness of safety and prevention of risks of accidents, incidents, general safety manager shall notice to related departments about contents necessary to be announced to participants, in order to ensure information sharing among staff.

Article 21: Report of accidents, incidents and solutions

1. All staff shall understand about Special reacting committee, in-charge personnel, solutions, reacting activities, other necessary activities when accident, incident happens; in case of accidents, disasters, it is necessary to implement solutions, reactings.
2. Operation safety maanger and managers of other related departments shall implement flexible and appropriate measures which may be beyond their authority if necessary.
3. If anyone is noticed of the accidents, incidents or disasters, he/she shall swiftly report with a designated method.
4. Operation safety manager and managers of other related departments shall report about accidents, incidents, disasters swiftly to government agencies as regulations.
5. Specific reacting contents are mentioned in “Regulations on reacting when accidents, incidents occur”, “Operation rules” and other related regulations.

Article 22: Confirmation of tasks

1. General safety manager, operation safety manager and managers of departments shall continuously finding out potential risks by visiting the site to confirm the implementation of tasks regarding transport safety in the company and the application of safety management system, as well as working out clear and correct measures for those needed improvements.
2. Manager of safety-quality department shall prepare annual internal auditor, asking for approval of general safety manager, and based on that plan, to inspect activities stipulated in this regulations towards related departments.

3. Manager of safety – quality department shall request related departments to improve via request of improvements if improvement needed items are found while internal auditing.
4. Manager of related departments after receiving request for improvements will need to promptly set up necessary solutions for improvements, and report to manager of safety – quality department for acceptance of report of improvements.
5. General safety manager shall receive report of internal auditing from manager of safety – quality department and develop appropriate handling measures for items which are in need of improvement.

Article 23: Training and education about transport safety

General safety manager shall request related departments to frequently prepare training, education plans for staffs, and organize the training, in order to ensure transport safety, as well as, requesting evaluation on training process, developing appropriate measures if necessary.

Article 24: Building up regulations/rules on safety

1. In addition to this provision, the operation safety manager and other related department managers shall develop the necessary safety regulations regarding maintenance of urban railway rolling stock and equipment, train operation, and review them continuously.
2. All staff shall be informed of the provision described in the clause 1 of this article in order to ensure train operation safety.

Article 25: Management of regulations, documents and records

1. This regulation, other safety regulations, documents on urban railway facilities and rolling stock structures and specifications, and other materials shall be properly managed and stored in regarding divisions.
2. The general safety manager's opinions and minutes of the meetings to decide safety policies shall be properly stored in accordance with regulations of the information management system of the company.
3. Rules relating to operation safety assurance and necessary documents shall be properly stored and managed by the chiefs of responsible unit in accordance with regulations of the information management system of the company.

PART 2: MANAGEMENT OF TRAIN OPERATION

Chapter 1: Management of train operation

Article 26: Operation management system

To prescribe Regulations on The system for operation management and instruction and command system

Article 27: Operation plan

1. When developing concrete operation plans, the operation safety manager shall confirm the safety and feasibility of the plans based upon specific train performance curves, taking into consideration following factors.
 - (1) Travel time between stations
 - (2) Loading and unloading of passengers at stations
 - (3) Restraints by passing and signaling facilities
 - (4) Restraints regarding on-board crews and vehicle
 - (5) Other matters necessary for smooth train operation
2. The train performance curves shall be developed, in consideration of vehicle performance including acceleration and deceleration, maximum speeds, and curving performance, track conditions including curves and slopes, and drivers' skills.
3. The operation safety manager shall check the development and changes of the operation plans.
4. The operation safety manager in cooperation with the department managers of rolling stock, electricity, station equipment, track, and civil works shall prepare documents regarding vehicle performance, track conditions, and speed limits at curves which are necessary to develop operation plans,

Article 28: Work shift of on-board crews

The operation safety managers shall develop work shift plans for on-board crews in consideration of appropriately balancing work hours and on-board hours based upon relevant regulations

Article 29: Management of qualifications of on-board crews

1. The train crew manager shall confirm regularly whether on-board crews fulfill qualifications according to the operation safety manager's instructions.
2. In case the train crew manager finds out that any of the crews do not meet the qualifications physically or mentally, or in terms of the knowledge

and skills, he or she shall take actions such as suspension from work or on-board retraining, and shall report the situation to the operation safety manager.

3. In case the operation safety manager receives a report on questionable qualifications and performances of any crews, he or she shall swiftly make a decision on necessary measures such as suspension/re-education based upon comments of the crew training manager.
4. In case any of the crews who have been suspended from work are expected to improve their knowledge and skills by training, the train crew manager shall develop an education program, confirm the results after the re-education, and decide whether they can get back to work or not, based upon the discussion with the operation safety manager.

Article 30: Report on qualifications of on-board crews and drivers in Depot

Regarding qualifications of on-board crews and drivers in Depot, the operation safety manager shall compile reports from the train crew manager and rolling stock department manager to make report and send it to the management agency in accordance with the regulation on the following matters:

- (1) The driver's licence No. and the results of medical checks and aptitude tests
- (2) Numbers of driving errors and the performance in the training and re-education program

Article 31: Training, management and maintaining of qualifications of operation related staff

1. The operation safety manager and other department manager shall understand and manage the competence, knowledge, and skills of train operation staff with appropriate methods and procedures designated in the "Operation Rules".
2. The persons who are responsible to supervise operation related staff shall base on "Operation Rules" to regularly check necessary matters regarding operation related staff's competence before or during their work hours and give them necessary instructions.
3. The persons who are responsible to supervise operation related staff shall record the competence of operation related staff under their supervision and confirm its changes over time.

Article 32: Train operation system

1. The operation safety manager shall designate responsible persons, command and control systems, and control methods regarding the following matters and specific train operation management in the operation rules:
 - (1) Understand the state of operation in time of confusion and disruption of operation
 - (2) Unexpected changes of operation schedules
 - (3) Important safety-related instructions such as change of operation, etc. in order to ensure safety among trains
 - (4) Gathering and sharing the information on abnormal weather
 - (5) Communication of approval to start maintenance, improvement and other works which may affect train operation and information related to restart operation after their completion
2. The operation engaging person shall understand information of state of operation, track conditions, and abnormal weather, etc., and, in case those conditions may affect safe train operation, he or she shall give to priority to take quick and appropriate actions
3. When operation is suspended due to incidents, accidents or disaster, the OCC manager shall give the restart command after confirming the safety of the site.
4. In case an operation schedule has to be changed due to incidents, accidents, disaster, the OCC manager's command shall be complied, contact and confirm with related persons in accordance with the operation rules to make sure that instructions are transmitted.
5. In case operation safety might be disrupted due to abnormal weather, the operation safety manager shall take proper actions such as suspension of operation.
6. The operation safety manager shall record and store the information on the state of operation, communications of regarding persons, and proper actions for accurate operation.

Article 33: Measures taken in case of incident, accident, disaster, etc.

1. In case of emergency such as incidents, accidents and disasters, the operation engaging person shall take quick and proper actions in order to rescue passengers and minimize the damage in accordance with Regulations on reacting when accidents, incidents occur.

2. In case of incident, accident, disaster, the emergency personnel or other people need to enter track area in order to conduct rescue and first-aid activities, the OCC manager shall take necessary actions including suspension of operation to ensure those people's safety.

Chapter 2: Management of urban railway facilities

Article 34: Management system of urban railway facilities

1. To prescribe regulations of management system of urban railway facilities
2. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall develop regulations regarding improvement and maintenance of railway facilities and report them to the general safety manager. The case of changes shall be applied similarly.
3. When maintenance and improvement work of urban railway facilities is carried out, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall develop maintenance plans appropriate to the necessity for improving safety and reliability and consistency between rolling stock and the future operation schedule, and report the plans to the general safety manager.
4. For implement and check of completion of urban railway facility maintenance and improvement, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall closely communicate with the related divisions and make proper plans in compliance with railway facility standards and maintenance rule to avoid affecting guarantee of operation safety.
5. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall summarize inspection plan and inspection results of urban railway facilities, prepare maintenance plan and improvement plan and report the plans to the general safety manager.
6. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall designate methods and procedures of inspection, maintenance and

improvement work of urban railway facilities in accordance with the urban railway facilities standards and rules make sure that all the related employees completely understand them.

7. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall share information to the related person in order to carry out daily inspection based on maintenance rules and maintain urban railway facilities in safe condition for use.

Article 35: Ensuring safety in maintenance and improvement of urban railway facilities

1. Regarding maintenance and improvement of urban railway facilities, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall stand on the viewpoint of securing safe train operation and preventing accidents to confirm the details of the work item from stage of maintenance and improvement plan.
2. The workers (including contractor) who are involved in the urban railway facility maintenance and improvement work shall exchange information in with related people on the details, methods, and sequence of maintenance and improvement work.
3. The workers (including contractor) who are involved in maintenance and improvement work of urban railway facility before, during, and after the work, shall confirm the train operation status, properly deal with errors of urban railway facilities, confirm the safety after completion of the work based on regulations of departments.
4. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall make sure that all the maintenance and improvement workers (including contractor) thoroughly understand the rules and necessary manuals to carry out works safely.
5. When maintenance and improvement work of urban railway facilities is carried out within track areas, the maintenance and improvement workers (including contractor) shall have close communications with the OCC manager and conduct confirmation and necessary report.
6. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall provide

urban railway facility maintenance and improvement workers (including contractor) with necessary information on train operation status to ensure safety of trains and workers.

7. The managers of electricity, signaling telecommunication department, civil work department, station equipment, track department shall gather accident information, including incidents and accidents happened on other sites as much as possible and make sure that maintenance and improvement workers (including contractor) thoroughly understand them.
8. In case of being concerned about problems which may affect train operation, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall promptly notify the OCC manager and other related persons.

Article 36: Management of qualifications of urban railway facility maintenance and improvement workers

1. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall prepare training plans, implement necessary training in compliance with training regulations, manuals and standards of the departments and simultaneously manage capacity, knowledge and skills of the worker related to urban railway facility maintenance and improvement.
2. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall regularly check the qualifications of the workers related to urban railway facility maintenance and improvement.
3. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall record the qualifications of the workers related to urban railway facility maintenance and improvement work and confirm the changes.
4. Management of qualifications of operation-related staff among workers related to urban railway facility maintenance and improvement shall comply with Article 31.

Article 37: Outsourcing of urban railway facility maintenance and improvement work

1. When urban railway maintenance and improvement work is outsourced, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall

examine experience, scale, skill and performance records of the candidate companies, designate the scope of work to be outsourced and methods to select the companies among the qualified companies.

2. In order to let the outsourced company that undertake maintenance and improvement work (hereafter called Contractor) perform maintenance and improvement work properly, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall choose from the contractor a person that takes responsibility of supervision.
3. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall clearly designate instructions, reports, procedures (including communication mechanism in case of emergency) necessary to maintenance and improvement work with the responsible person.
4. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall provide necessary information to maintenance and improvement work and instructions if necessary to the contractor through the responsible person.
5. The managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall request the responsible person of the contractor to carry out education, training and examine competence in accordance with Article 36 in order to help workers of the contractor have sufficient knowledge and skill necessary to carry out maintenance and improvement work and promptly report the results.
6. In case of incidents, accidents, etc. or risk of happening incidents, accidents, etc. due to operation performed by the contractor, the managers of electricity, signaling telecommunication department, civil works department, station equipment, track department shall request the responsible person of the contractor promptly report and give necessary instructions.
7. The managers of electricity, signaling telecommunication department, civil work department, station equipment, track department shall conduct inspections of operation performed by the contractor, if any problems which may affect train operation, give instructions to solve them.

Chapter 3: Rolling stock management

Article 38: Rolling stock management system

1. To prescribe regulations on the system related to rolling stock management.
2. The manager of the rolling stock department shall develop rules and regulations regarding manufacturing, maintenance and improvement of rolling stock and report to the general safety manager. The same shall be applied to cases of change.
3. When rolling stock is manufactured, maintained and improved, the manager of the rolling stock department shall develop maintenance plans appropriate to the necessity for improving safety and reliability and consistency between urban railway facilities and the future operation schedule, and report the plans to the general safety manager.
4. Regarding execution of manufacturing and improving rolling stocks, the manager of the rolling stock department shall stipulate inspection method and procedure during manufacture and at completion and make sure that the related people understand sufficiently.
The manager of the rolling stock department shall summarize inspection plans and inspection results of rolling stocks, develop rolling stock maintenance plans, and report to the general safety manager.
6. The manager of the rolling stock department shall designate methods and procedures of inspection and maintenance in compliance with regulations of Vietnam, codes and standards on environmental guarantee, noise, maintenance rules for rolling stock etc., and share these contents with the related staff.
7. The manager of the rolling stock department shall share information to the related person in order to carry out daily inspection based on maintenance rules and maintain rolling stock in safe condition for use.

Article 39: Rolling stock operation plan

The manager of the rolling stock department shall make rolling stock operation plan, ensuring operation safety taking rolling stock structure and functions into consideration, track structure and operation safety protection equipment and rolling stock inspection plan which is required in train operation.

Article 40: Management of qualifications of rolling maintenance workers

1. The manager of the rolling stock department prepare training plans, implement necessary training in compliance with training regulations, manuals and standards and simultaneously manage capacity, knowledge and skills of the rolling stock maintenance worker.
2. The manager of the rolling stock shall regularly check the qualifications of the rolling stock maintenance workers.
3. The manager of the rolling stock department shall record the qualifications of the rolling stock maintenance workers and manage to confirm the changes.
4. Management of qualification of train drivers in depot shall be in compliance with Article 29 “Management of qualifications of on-board crews”. In this case, it is possible to change “On-board crews” to be “train drivers in depot”, and change “Operation safety manager” to be “The manager of the rolling stock department”.
5. Management of qualifications of operation-related workers among rolling stock workers shall comply with Article 31.

Article 41: Outsourcing of rolling stock maintenance

1. When rolling stock maintenance work is outsourced, the manager of the rolling stock department shall examine experience, scale, skill and performance records of the candidate companies, designate the scope of work to be outsourced and methods to select the companies among the qualified companies.
2. In order to let the outsourced company that undertake rolling stock management work (hereafter called Contractor) perform maintenance work properly, the manager of the rolling stock department shall choose from the contractor a person that takes responsibility of supervision.
3. The manager of the rolling stock department shall clearly designate instructions, reports, procedures (including communication mechanism in case of emergency) necessary to maintenance work with the responsible person.
4. The manager of the rolling stock department shall provide necessary information to maintenance work and give instructions if necessary to the contractor through the responsible person.

5. The manager of the rolling stock department shall request the responsible person of the contractor to carry out education, training and examine competence in accordance with Article 40 in order to help workers of the contractor have sufficient knowledge and skill necessary to carry out maintenance work and promptly report the results.
6. In case of incidents, accidents, etc. or risk of happening incidents, accidents, etc. due to operation performed by the contractor, the manager of the rolling stock department shall request the responsible person of the contractor promptly report and give necessary instructions.
7. The manager of the rolling stock department shall conduct inspections of operation performed by the contractor, if any problems which may affect safe operation of rolling stock, give instructions to solve them.

PART 3: IMPLEMENTATION

Article 42: Responsibility of implementation

Right after this regulation takes effect, Safety and Quality Department shall be responsible to individuals, units and departments related to let individuals, units and departments be responsible for specific assignment and make detail form, and implement of this regulation.

Article 43: Building up and adjustment of safety management regulation

In addition to this safety management regulation and other related regulations, Safety and Quality Department shall be responsible to build up and adjust necessary regulation related to safety management to ensure operation safety.

Annually, the general safety manager shall summarize and evaluate results and announce performance of safety in a year. The general safety manager of the company shall review and adjust the contents in this regulation if necessary in order to enhance safety degree in operation but ensure properly comply with legal regulations and performance capacity of the company.

Article 44: Implementation effect

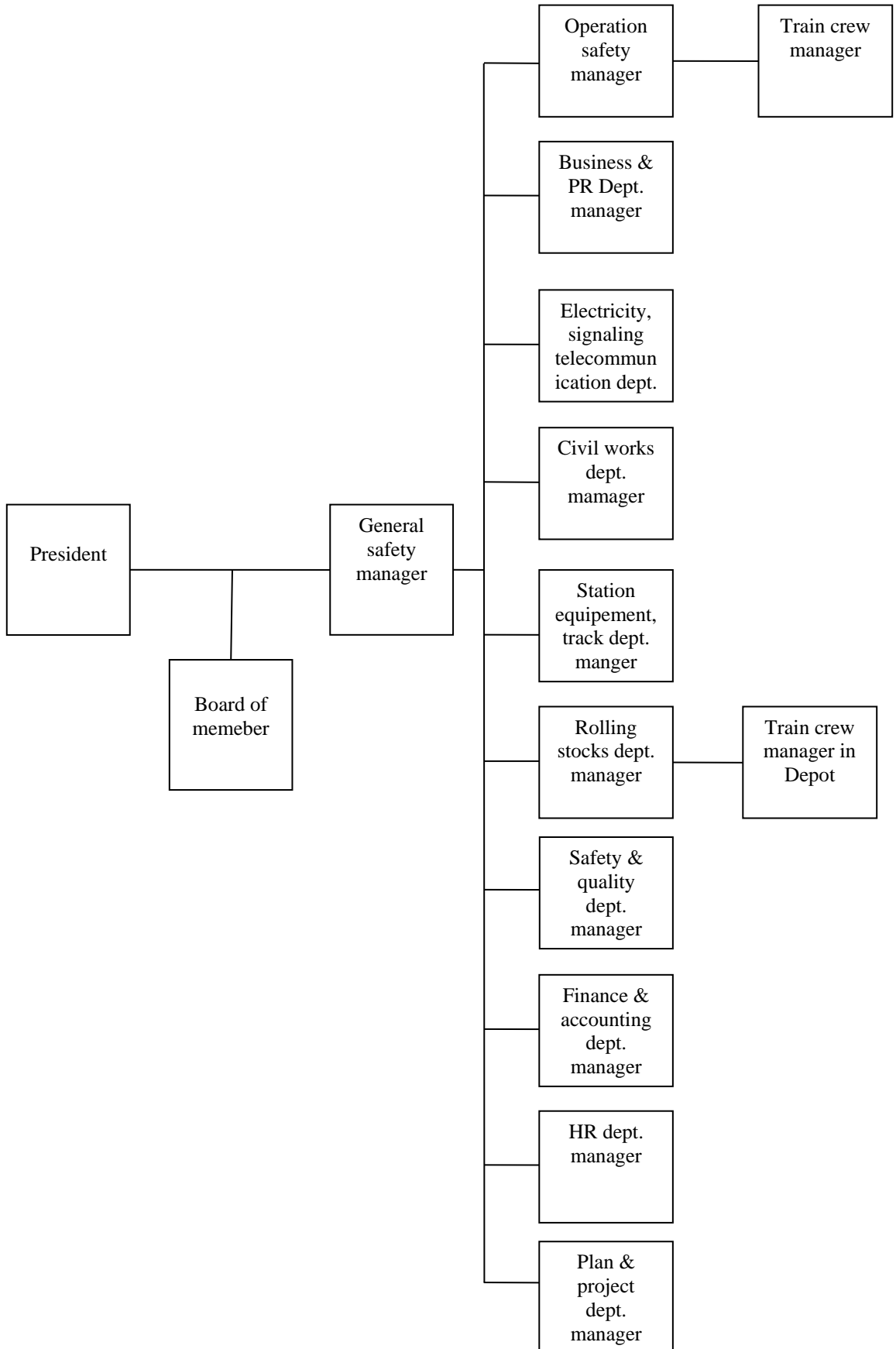
Regulation on Safety management including 02 parts ... article, comes into effect from to ... all individuals, units and departments of the company.

During the implementation, if any contents need to be adjusted, changed or added to be suitable with the practical activities, the relevant individuals,

units, departments shall be responsible for comments to the leader of the company to promptly issue necessary supplement and modifications.

(Attachment 1)

SAFETY MANAGEMENT MECHANISM CHART OF COMPANY HMC



THE RULE OF RESPONDING URBAN RAILWAY INCIDENTS AND ACCIDENTS (DRAFT)

Chapter1: General Regulation

Article 1 Objective

1. This rule is prepared for the purpose of establishing regulations on response of the company when accidents, incidents, disasters happen..., appropriate implementation to ensure the safety of passengers, employees, and restore the original after accident, incident through regulation on measures to response in case of accidents, incidents on urban railway.
2. Response to urban railway accidents, incidents must be ensured by compliance with this rule, related regulations and rules prescribed by the departments within the company, as well as compliance with Vietnam Railway Laws and regulations issued by Vietnam's Ministry of Transport (MOT).

Article 2 Definition

1. Definitions of technical terms in this rule are as follows.
 - a) Railway accident is railway vehicles in collision, derailment, train overturn, crash, hitting people, other vehicles and vice versa or rail vehicles in operating to stab and hit obstacles causing damages to lives and health of people or damages of property.
 - b) Railway traffic incidents are incidents occurred in railway transport activities causing interferes to train operation but not an accident yet.
2. Classification of accidents, incidents
 - a) Classification of urban railway accidents:
 - Classification based on causes:
 - + Accident caused by subjective reasons is the accident occurred due to provisions of laws and related regulations on urban railway transportation of organizations and individuals under Hanoi urban railway Company.
 - + Accident caused by objective reasons is the accident due to force majeure (natural disasters, enemy sabotage) or other causes other than subjective reasons of Hanoi urban railway Company.
 - Classification based on characteristic of urban railway accidents
 - + Operation accidents are the accidents happening when trains in collapse, derail, overturn, crash, hit obstacles or accidents relating to urban railway civil works and equipment causing losses and damages to lives and health of people or damages of property.

- + Other accidents are the accidents relating to people, trains hit people, people jump down or fall down from trains, people throw a stone/clod to trains causing losses and damages to lives and health of people or damages of property
- Classification based on damages caused by urban railway accidents
 - + Less serious accident is accidents causing 01 – 05 people injured or property damages from _____ VND to less than _____ million VNDs;
 - + Serious accident is accidents causing 01 person died or 06– 08 people injured or property damages from _____ VND to less than _____ million VNDs;
 - + Very serious accident is accidents causing 02 persons or more died or 09– 10 people injured or property damages from _____ VND to less than _____ million VNDs;
 - + Extremely serious accident is accidents causing 03 persons or more died or 11 people or more injured or property damages from _____ VND to less than _____ million VNDs;

b) Classification of urban railway incidents:

Classification based on incident causes: urban railway incidents are due to subjective and objective causes.

+ **Subjective cause:** Civil works, signaling telecommunication equipment, electricity, rolling stocks malfunction or other cases due to violation of legal regulations and related regulations on urban railway traffic and organizations and individuals under Hanoi urban railway Company.

+ **Objective cause:** Natural disasters, enemy inflicted devastation or other causes other than objective causes of Hanoi urban railway Company.

Article3 Basic actions of the company staff

When accidents, incidents happens, the staff of the company shall coordinate together and take actions in accordance with the measure regarded to be the best based on the following list to ensure safety for passengers and company staff:

- (1) Rescue and guide passengers to evacuate
- (2) Ensure the safety of themselves and other employees
- (3) Prevent secondary disasters and accidents, incidents from occurring (top priorities given to train protection)
- (4) Support and help victims
- (5) Communicate and notify

- (6) Preserve property
- (7) Keep the witness among passengers
- (8) Other necessary issue

Chapter2: Accidents, incidents prevention

Article4 Establishment of regulations on accidents, incident prevention

The General Director shall prescribe for Accident Handling Council and At-site response committee, necessary members to control and prepare ready to gather members.

Article5 Prevention measures

Department Managers in HQ and Director of OU shall implement the following contents to prevent accidents, incidents from happening.

- (1) Manage and maintain urban railway facilities and equipment properly
- (2) Regulate communication network among the company staffs
- (3) Prepare tools used in emergency
- (4) Prepare tools necessary for passenger protection and carry out training for use of these tools.

Article6 Wide notice to passengers

To smoothly carry out guiding passengers to refuge when accidents or incidents happen, the Director of OU shall widely inform passengers and endeavor to grasp knowledge related to accidents, incidents.

Article7 Education and trainings

- 1. Department Managers of HQ and the Director of OU shall carry out education and training for staffs about initial settlements such as rescuing passengers when accidents, incidents happen.
- 2. Departments of OU shall have plans to execute education and training on restorations when accidents, incidents happen.

Chapter3: Accident, incident response

Part 1: Regulations in case of accidents, accidents

Article8 Classification of Accident Handling Council

- 1. The person who establishes the Accident Handling Council, Chairman of Accident Handling Council and members of Accident Handling Council are as follows.

Classification	the person establish the Council	Chairman of Accident Handling Council	Members of Accident Handling Council (HQ)
Extremely serious accident	General Director of HMC	General Director of HMC	Manager of Safety and Quality Department Manager of Sales and Public relations Manager of Integrated Train Operation Manager of Rolling Stocks Department Manager of Civil Works Manager of Electricity – Signaling Telecommunication Department Manager of Station Equipment, Track Manager of Admin Department Director and Vice Director of OU
Very serious accident	General Director of HMC	General Director of HMC	Manager of Safety and Quality Department Manager of Sales and Public relations Manager of Integrated Train Operation Manager of Rolling Stocks Department Manager of Civil Works Manager of Electricity – Signaling Telecommunication Department Manager of Station Equipment, Track Manager of Admin Department Director and Vice Director of OU

Serious accident	HMC's Deputy General Director in charge of Operation	HMC's Deputy General Director in charge of Operation	Manager of Safety and Quality Department Manager of Sales and Public relations Manager of Integrated Train Operation Manager of Rolling Stocks Department Manager of Civil Works Manager of Electricity – Signaling Telecommunication Department Manager of Station Equipment, Track Manager of Admin Department Director and Vice Director of OU
Not so serious accident	HMC's Deputy General Director in charge of Operation	HMC's Deputy General Director in charge of Operation	Manager of Safety and Quality Department Manager of Sales and Public relations Manager of Integrated Train Operation Manager of Rolling Stocks Department Manager of Civil Works Manager of Electricity – Signaling Telecommunication Department Manager of Station Equipment, Track Manager of Admin Department Director and Vice Director of OU

2. The Manager of Safety and Quality Department receives accident, incident report from the head of OCC and inform the person who in charge of establishment of Accident Handling Council to establish the Accident Handling Council.
3. In case the Chairman of the Accident Handling Council is absent, if the chairman is the General Director, the Deputy General Director in charge of operation shall

be on behalf of the General Director; if the Chairman is the Deputy General Director in charge of operation is absent, the Deputy General Director in charge of safety and quality shall be on behalf to be in charge of the Chairman.

4. The Accident Handling Council shall still be established even though OU's Director and Vice Director are absent.

Article9 Establishment and Dissolution of the Accident Handling Council

1. When urban railway accident happens, the Accident Handling Council must be established immediately in accordance with Article 8, and the person who establishes this council shall immediately notify all over the company.
2. After restoration of accident is finished and safety of the site is confirmed, the Accident Handling Council shall be dissolved.
3. Dissolution of the Accident Handling Council and change of its classification shall be decided by the Chairman of the Accident Handling Council.
4. When the Chairman of the Accident Handling Council dissolves the Accident Handling Council or change its classification, he shall immediately inform entire the company.
5. The Chairman of the Accident Handling Council may limit the assigned members of the Council based on the situation of the accident, incident

Article10 Response in OU

1. The Director of OU and Department Managers of OU shall prescribe the contents of accident, incident responses necessary to deal with accident, incidents, for example, and instructions of evacuation for passengers and staffs seeking shelter, and restoration after incidents, accidents
2. The contents of responding accidents, incidents and communication system of the OU's department must be prescribed in the Rules of Responding accidents, incidents of the departments.
3. The OU's department Managers, after receiving notification of accident, incident shall confirm the contents of accident, incident and immediately together with staff required to respond come to the site.
4. The OU's department Managers shall prepare materials, equipment for restoration and necessary tools to the site of accident, incident to be ready for use at any time.

Article 11 Response in case accident, incident possibly and warningly happens:

1. Handling train operation when having warning of abnormal weather condition like heavy rain, storm, fog, flood, etc. shall be in compliance with the provisions on the rules of train operation.
2. Other departments as Electricity –Signaling Telecommunication, Station

Equipment – Track, Civil Work, Rolling Stocks shall have appropriate measures and comply with the regulations on handling in case that accident, incident possibly or warningly happens, developed by these departments;

Part 2: Accident Handling Council

Article12 Responsibilities of the Accident Handling Council

The responsibilities of the Accident Handling Council are as follows.

- (1) Assist at accident, incident site
- (2) Confirm the place to where the injured or died people is taken and level of injury
- (3) Contact with the families of the victims, arrange waiting place
- (4) Arrange, assist materials, equipment and staff necessary for restoration, clothes and accommodations for persons in charge of restoration.
- (5) Gather, record information of accident, incident.
- (6) Report on the situation to the concerned agencies
- (7) Respond to the accident investigation agency
- (8) Investigate and protect the scene
- (9) Respond to the press agency
- (10) Other necessary contents

Article13 Handling measure till establishment of the Accident Handling Council

1. During the time till establishment of the Accident Handling Council, the OCC Head shall handle emergency works.
2. The OCC Head shall report to the manager of safety and quality department on contents to handle works till the Accident Handling Council is established and hand over works.

Article14 Responsibilities of the members of the Accident Handling Council

1. The Chairman of the Accident Handling Council shall generally manage the Accident Handling Council
2. The manager of the safety and quality department shall generally manage the activities of the Accident Handling Council. In addition, he is responsible for communication of the Accident Handling Council, receiving report from OCC and convey the instruction to OCC.
3. The members of the Accident Handling Council shall receive the instructions of the Chairman of the Accident Handling Council, to direct the staffs of each department and their staff to execute the regulations prescribed in the Attachment1
4. The Director and Vice Director of OU shall gather detail information of the situation from the departments in OU, and report to the Chairman of the Accident Handling Council.

Article15 Communication

1. Communication related to the accident, incident shall be as the Attachment 2.

2. Provision of instructions and information from the Accident Handling Council shall be executed in the prescribed form in order for absolute communication.

Article16 Public announcement

1. Public announcement of accident, incident shall be carried out but the manager of Sales- Public Relations Department or the person who is assigned by the manager of Sales – Public Relations.
2. Public announcement shall be complied with Article 15, sub clause2.

Article17 Investigation of accident, incident site

1. In case accident, incident site is required to be investigated, the Chairman of the Accident Handling Council shall organize and investigate the site.
2. In case the accident investigation agency comes to investigate the site, the Chairman of the Accident Handling Council shall instruct the investigation team to respond appropriately such as protecting the site for investigation of the investigation agency.

Part 3: At-site response committee

Article18 Establishment of at-site response committee ...

1. In case of accident, at-site response committee shall be established to integrate the communication system.
2. Together with setting of information media position with OCC is ensured, at-site response committee shall clearly indicate the marked to clarify the setting position.
3. All staffs of the at-site response committee shall wear the marker to show appearance.

Article19 Responsibilities of the at-site response committee

Responsibilities of the at-site response committee are as follows.

- (1) Ensure safety of passengers and staffs, rescue and instruct evacuation.
- (2) Confirm the place to where the injured or died people is taken and level of injury, others.
- (3) Grasp accident, incident situation and report to the Head of OCC and estimate restoration based on this situation.
- (4) Prevent secondary disasters and accidents, incidents from occurring; Prepare for restoration and carry out restoration
- (5) Protect the site
- (6) Handle site-investigation
- (7) Other necessary contents

Article20 Responsibilities of the members of the at-site response committee

1. The Leader of at-site response committee shall be the manager of OU's department where the accident happens. However, on the mainline, the master of

the station nearest to the accident shall be on behalf of the Leader of the response committee in accordance with appointment of the manager of the station management department. In Depot, the Head of Depot may be on behalf of the leader of the response committee in accordance with appointment of the manager of the rolling stocks department.

2. In principle, the leader of the at-site response committee shall stay in the at-site response committee to unify the committee and report on the site status to OCC and receive instructions from OCC.
3. When performing tasks, the head of the at-site response committee may take actions based on his prediction and experience. However, if necessary, the chairman of the accident handling council shall give instructions. In that case, the leader of the at-site response committee shall report to the head of OCC.
4. The persons in charge in the response committee shall receive instructions from the leader of the at-site response committee and instruct their staffs and together with them to perform the tasks specified in the Attachment 1.
5. The in-charge persons of the at-site response committee shall grasp information of the accident site to report to the leader of the at-site response committee and estimate restoration.
6. In case the accident handling council is established, the in charge person to the at-site response committee shall also report to the in-charge vice director as subclause5.
7. In order to unify communication, all persons working on the accident site shall report thru the leader of the at-site response committee.

Article21 Exempting the leader of the at-site response committee from investigation of responsibility

The leader of the at-site response committee shall be exempted from investigation of responsibility for handling accident, incident in case of not-serious mistakes.

Article22 Dissolution of the at-site response committee

When restoration is finished, after safety is confirmed on the accident site, the leader of the at-site response committee shall report this information and dissolve the committee.

Part 4: Emergency mobilization

Article23 Mobilization of Response staff on occurrence of accident

Department managers of HQ and department managers of OU shall mobilize staff to respond in case of accident

Article24 Appointment of response staff

1. Department managers of HQ and department managers of OU shall regulate in advance the response staffs among their staffs.
2. Department managers of HQ and department managers of OU shall make the list of response staffs with their names, contact system and leave it in the working area to quickly mobilize these staffs.

Article 25 Responsibility of the response staff

When receiving the mobilization notification, if there is no special reason, the response staff shall urgently go to the working place, the site, and receive instructions from the accident handling councilor the in-charge person of the at-site response committee at the site and take actions.

Article26 Mobilization report

In case of mobilizing response staffs, the department managers of HQ and department managers of OU shall be reported to the accident handling council on mobilization status.

Chapter4: Accident/Incident Report

Article27 Initial accident/incident report

1. The person finds out accident shall immediately inform the OCC.
2. Contents to be reported as follows.
 - (1) Accident location (Line, Section)
 - (2) Time
 - (3) Number of death, injury, if any
 - (4) Site situation (Damages of urban rolling stocks and facilities ...)
3. Department Managers in OU shall manage accident location and make initial report in accordance with the prescribed form.

Article28 Report after accident/incident restoration

1. Report after accident/incident restoration shall be made at site by OU's department managers who are mainly in charge of analyzing cause and measures to avoid reoccurrence.
2. Settlement of report after restoration is shown in the attachment 3
3. In case accident report is submitted to the other agencies, the manager of safety and quality department shall be contact and response person.

Attachment 1 : Roles of HQ and departments of OU in case of accidents, incidents

Role	Accident Handling Council (HQ)	At-site response committee (OU)
The person taking highest responsibility	<u>Chairman of Accident Handling Council</u> (Chairman of Accident Handling Council as Article 8)	<u>Leader of At-site response committee</u> (Leader of At-site response committee, Article 19, sub-clause 1)
The person providing detail information	<u>Manager and Vice Manager of OU</u> 1. Related to capture the details of the current situation of the site from the departments at OU under the management 2. Related to the detailed report of the current situation of the site that required for the accident handling council, according to article 14, paragraph 3	—
The team generally managing and investigation	<u>[Safety and Quality Department] The person in charge: The Manager of Safety and Quality Department</u> 1. Related to establishment and control of the Accident Handling Council 2. Related to report on situation and communication from OCC 3. Related to instructions and communication from the Accident Handling Council 4. Related to notes and revision of the Accident Handling Council 5. Related to response to the accident investigation agencies 6. Related to investigation of causes and summary of report	<u>[Safety Department] The person in charge: The Manager of Safety Department</u> 1. Related to notes and revision of the at-site response committee (When the Accident Handling Council is established, the manager of the Safety Department shall be present at OCC) 2. Related to investigation of cause at site 3. Related to site protection 4. Related to investigation of causes and summary of report

Sales- Public Relation Team	<p><u>【 Sales - Public Relation Department 】 The person in charge: The Manager of Sales - Public Relation Department</u></p> <ol style="list-style-type: none"> 1. Related to rescuing passengers 2. Related to arrangement of passenger transport 3. Related to investigation of causes 4. Related report on passenger transport business to the regulator 5. Related to assistance and advice regarding the site 6. Related to responses to the outsiders such as press agency 	<p><u>【 Station Management Department】 Person in charge: The manager of station management department</u></p> <ol style="list-style-type: none"> 1. Related to rescuing, guiding passengers to evacuate 2. Related to the investigation and response to died or injured passengers 3. Related to protection of equipment (facilities) of the station 4. Related to investigation and report on the loss of business facilities 5. Related to passenger transportation business 6. Related to arrange transportation for passengers 7. Related to announcement to passengers and to prevent chaos 8. Related to investigation and report on caused, site protection 9. Related to witness protection
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<p>Operation team</p>	<p><u>【 Integrated train operation department】 Person in charge: The manager of the Integrated train operation department</u></p> <ol style="list-style-type: none"> 1. Related to rescuing passengers 2. Related to train operation schedule 3. Related to investigation of causes 4. Related report on passenger transport business to the train operation regulator 5. Related to assistance and advice at the site 	<p><u>【Train operation management department】 Person in charge: The Manager of Train operation management</u></p> <ol style="list-style-type: none"> 1. Related to rescuing, guiding passengers to evacuate 2. Related to the investigation and response to died or injured passengers 3. Related to protection of operation equipment 4. Related to investigation and report on the loss of operation facilities 5. Related to train operation 6. Related to announcement to passengers and to prevent chaos 7. Related to investigation and report on caused, site protection 8. Related to witness protection <p><u>【OCC】 Person in charge: the Head of OCC</u></p> <ol style="list-style-type: none"> 1. Related to report on the situation from the at-site response committee 2. Related to train operation 3. Related to preparation for reoperation based on the status report 4. Related to restoration for normal operation after re-operation
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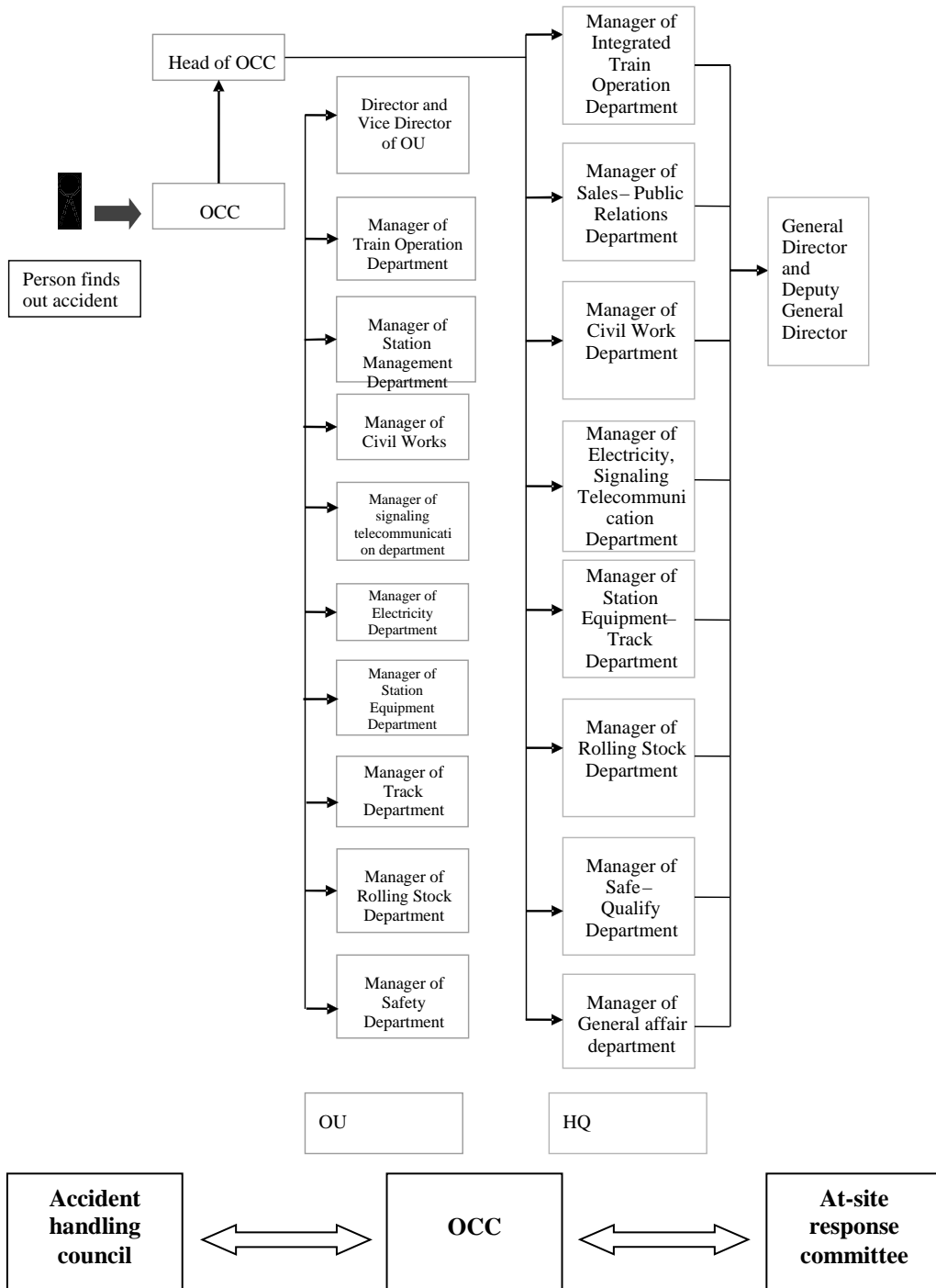
Civil works team	<p><u>【 Civil work department 】</u> <u>Person in charge: The Manager of Civil Work Department</u></p> <ol style="list-style-type: none"> 1. Related to guarantee of restoration equipment and machines and support staff outside of the company 2. Related to investigation of causes 3. Related to assistance and advice regarding the site 	<p><u>【 Civil work maintenance department 】</u> :<u>Person in charge: The Manager of Civil work maintenance department</u></p> <ol style="list-style-type: none"> 1. Related to rescuing, guiding passengers to evacuate 2. Related to protection and restoration of equipment and facilities under its management 3. Related to preparation of equipment and machines for restoration of civil works and facilities under its management 4. Related to investigation and report on losses of civil work and facilities under its management 5. Related to investigation and report on causes and site protection
Rolling stock team	<p><u>【 Rolling stock department 】</u> <u>Person in charge: The Manager of rolling stock management</u></p> <ol style="list-style-type: none"> 1. Related to guarantee of restoration equipment and machines and support staff outside of the company 2. Related to investigation of causes 3. Related to assistance and advice regarding the site 	<p><u>【 Rolling stock department 】</u> <u>Person in charge: The Manager of rolling stock department</u></p> <ol style="list-style-type: none"> 1. Related to rescuing, guiding passengers to evacuate 2. Related to protection and restoration of rolling stock equipment and facilities under its management 3. Related to preparation of equipment and machines for restoration of rolling stock and facilities under its management 4. Related to investigation and report on losses of rolling stock and facilities under its management 5. Related to investigation and report on causes and site protection

<p>Station equipment – track team</p>	<p><u>【Station equipment - Track Department】 Person in charge: The Manager of Station equipment - Track Department</u></p> <ol style="list-style-type: none"> 1. Related to guarantee of restoration equipment and machines and support staff outside of the company 2. Related to investigation of causes 3. Related to assistance and advice regarding the site 	<p><u>【 Station equipment department】 Person in charge: The Manager of Station equipment department</u></p> <p><u>【Track department】 Person in charge: The Manager of Track department</u></p> <ol style="list-style-type: none"> 1. Related to rescuing, guiding passengers to evacuate 2. Related to protection and restoration of station equipment, track and facilities under its management 3. Related to preparation of equipment and machines for restoration of station equipment, track and facilities under its management 4. Related to investigation and report on losses of station equipment, track and facilities under its management 5. Related to investigation and report on causes and site protection
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<p>Electricity Team</p>	<p><u>【 Electricity, Signaling Telecommunication Department】 Person in charge: The Manager of Electricity, Signaling Telecommunication Department</u></p> <ol style="list-style-type: none"> 1. Related to guarantee of restoration equipment and machines and support staff outside of the company 2. Related to investigation of causes 3. Related to assistance and advice regarding the site 	<p><u>【 Electricity 】 : Person in charge: The Manager of Electricity Department</u></p> <p><u>【 Signaling telecommunication】 Person in charge: The Manager of Electricity Department</u></p> <ol style="list-style-type: none"> 1. Related to rescuing, guiding passengers to evacuate 2. Related to guarantee communication and power supply 3. Related to protection and restoration of electrical equipment, and signal telecommunication equipment 4. Related to preparation of equipment and machines for restoration of electrical equipment, and signal telecommunication equipment 5. Related to investigation and report on losses of electrical equipment, and signal telecommunication equipment 6. Related to investigation and report on causes and site protection
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<p>General affair, victim response team</p>	<p><u>【General Affair department】</u> <u>Person in charge: The Manager</u> <u>of General affair Department</u></p> <ol style="list-style-type: none"> 1. Related to assistance of staff in HQ necessary for rescuing passengers 2. Related to grasp situation of died or injured passengers and confirmation of location to where they are taken 3. Related to the visit and condolences to the victims 4. Related to requirements from the victims 5. Related to confirmation and report of safety situation of the staffs 6. Related to preparation of accommodations for restoration activities 	<p>—</p>
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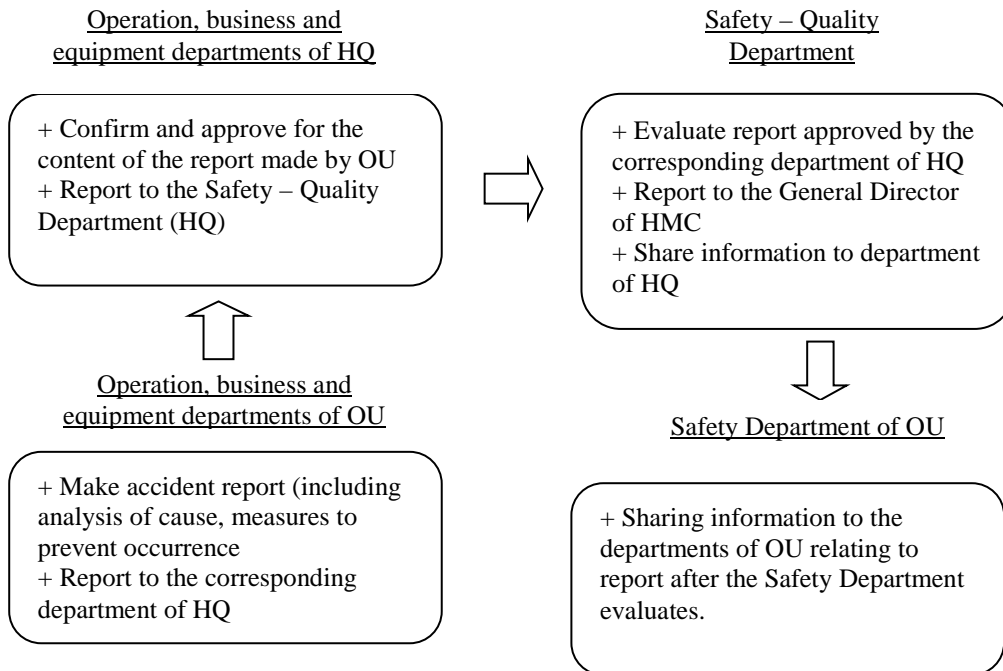
Attachment 2: Organization chart of urban railway accident, incident communication system



If necessary:

- (1) Manager of Safety Department (OU) communicates with other departments of OU without indicating in the above chart.
- (2) Manager of Safety - Quality Department (HQ) communicates with other departments of HQ without indicating in the above chart

Attachment 3: Handling report after restoration of accident - incident





Hanoi Peoples' Committee



Japan International Cooperation Agency

Hanoi Metro Train Operation Rules

**Support Project to Strengthen the Capacity of Hanoi Urban Railway Regulator
and Establish an Operational Organization**

Practitioner : Nguyễn Văn Bằng

Support expert : Kohei Ushida

November 2015

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Hanoi Metro Train Operation Rules

Part 1 General Provisions

Article 1 Scope

This rulebook provides work procedures to ensure safe train operation and the duties of organizations and individuals engaged in the activities of the Metropolitan Railway in the City of Hanoi.

Article 2 Objects

- 1 The objects of this rulebook are organizations and individuals operating the lines of the Metropolitan Railway in the City of Hanoi.
- 2 The organizations and individuals defined in the preceding article are responsible for complying with these rules.

Article 3. Legal basis and related materials

1. Legal basis

- Law on railway;
- Circular No. 05/2015/TT-BGTVT "Regulations on standards of titles of staffs directly serving urban railway train operation ";
- Circular No. 31/2015/TT-BGTVT "Regulations on resting time for employees doing special work in railway transport";
- Drafted Circular No. .../2015/BGTVT "Regulations on dealing with urban railway accidents and incidents".

2. Related materials

- Basic design of Line 2A: Cat Linh – Ha Dong, Line 2: Nam Thang Long – Tran Hung Dao, Line 3 Nhon –Hanoi Station;
- Detailed design of Line 2A: Cat Linh – Ha Dong, Line 3 Nhon –Hanoi Station;
- Training plan of Line 2A: Cat Linh – Ha Dong, version 16;
- National Code on railway operation (QCVN 08:2015/BGTVT);
- National Code on train operation and shunting (QCVN 07:2011/BGTVT);

- National Code on railway signal (QCVN 06:2011/BGTVT)

Article 4 Definitions of Terms

The followings define the terms used in this rulebook.

(1) Terms related to stations

Term	Meaning
Station	A general term for stations and car stops.
Station	A station equipped with switches.
Car stop	A station equipped with no switch.
Station area indicator	An indicator showing the boundary between the inside and the outside of a station as necessary.

(2) Terms related to tracks

Term	Meaning
Main line	A line constantly used for train operation.
Main line	A main line of prime importance in a station yard having two or more main lines with the same running direction.
Service line	A track other than the main line in a station yard.
Side track	A track other than the main line used for e.g. parking trains.
Inspection yard line	A side track in a station yard used for entering and leaving a depot.
Safety siding	A side track to prevent the collision etc. of overrunning trains when two or more trains are entering or leaving a depot at the same time.
Railway track closing	Closing of a specific section of railway track due to construction, trial runs, etc.
Railway track closing construction	Construction requiring railway track closing.
Fouling point	A limit point in a junction or intersection area beyond which trains on each track interfere with each other. "The protection area of a fouling point" means the side where trains do not interfere with each other.

(3) Terms related to trains or cars

Term	Meaning
Train	A group of cars prepared to operate on a main line between stations.

Construction train	A train used for various types of tests or staff education and training before inauguration, or for transporting materials and other necessities when accidents or disasters occur.
Relief train	A train etc. operated to relieve a broken-down train etc.
Parked car	A car temporarily parked in a station yard other than a depot, including one parked on a main line between stations after the last train operation.
Continuous brake	A system having the functions of controlling the brakes of all cars at the same time from the cab and automatically activating emergency brakes when cars are separated.
Number of all shafts	A total number of shafts mounted in all cars connected as a train.
Number of brake shafts	A total number of braking shafts mounted in all cars connected as a train.
Multiple unit control	A method to control the power of two or more cars at the same time from a single cab.
Locking of the controller	To lock the controller installed in a cab by turning its handle to “Off position.”
Maintenance car	A large maintenance machine used for equipment maintenance.

(4) Terms related to staff

Term	Meaning
Driver	A general term for supervisors and drivers belonging to a crew office who possess a train driver’s license.
Station master	A general term for supervisors in charge of the operation management of trains etc. at stations.
Crew	A general term for staff including drivers and conductors.
Station staff (signal staff)	A station staff designated by the station master as a signal staff.
Inspection yard staff (driver)	A staff designated by the head of inspection yard as an operation staff.
Inspection yard staff (signal staff)	An inspection yard staff designated by the head of inspection yard as a signal staff.
Messenger	A person riding with a driver to ensure that the driver does not operate different train when using the messenger method for train departure from a station.

(5) Terms related to ensuring safety between trains

Term	Meaning
Speed control system	An operation method commonly used for keeping an interval between trains using train control devices to automatically ensure safety between trains.
Operation using the backup system	An operation method used when train operation using a speed control system is not workable due to system failures etc. and its backup system automatically operates to ensure safety between trains.
Dispatching system	An operation method that one train exclusively uses one block section to ensure safety when normal operation using a speed control system or its backup system is not workable due to system failures etc.
Messenger method	An operation method used when operating a relief or construction train to ensure the route of a train entering into a section where another train etc. stands.
Block	To prevent the entry of more than one train into a section at the same time so that a train exclusively uses the section.
ATO	A system that a driver operates the departure button to start automatic train operation to the next station.
Shunting sign	A method to guide a train etc. using shunting signs when a driver cannot operate the train etc. alone.

(6) Terms related to signals

Term	Meaning
Safety equipment	A term includes signal devices, interlocking devices, switch and lock movements, and automatic train control devices.
Cab signal	A cab signal with the function of indicating allowable train speeds.
Central control	Automatic or manual control of train routes centralized at the OCC.
Local control	Automatic or manual control of train routes localized at stations.

(7) Terms related to areas

Term	Meaning
Signaled route	An area in which a train etc. can proceed following signal indications.
Route of a train etc.	An area in which the safety of an operating train etc. is ensured.

Protection area of a signal/Approach of a signal	Looking from a signal, the direction protected by the signal is called the “protection area of the signal” and the direction the signal is facing is called the “approach of the signal.”
Inside/Outside of a station	The inside and outside areas of a station are called the inside and outside of the station, respectively.
Halfway between stations	A section between neighboring stations excluding station yards.
In the middle of operation	Operation between starting from a station’s predetermined stop position and stopping at the next station’s predetermined stop position.

(8) Terms related to operation methods

Term	Meaning
One-man operation	Operation that a driver rides and drives a train alone.
Pushing operation	Driving a train etc. in a place other than the cab of the first car.
Backward operation	Proceeding a train in the direction opposite to the first driving direction.
Attention operation	An operation method for a driver to operate a train with special care due to some reason.
Operation control	To operate a train with a limited speed or to stop operation when continuing normal operation is difficult or dangerous due to abnormal weather etc.

(9) Abbreviations used in this rulebook

Abbreviations	Term	Meaning
HQ	Headquarters	A center of operations.
OU	Operation Unit	A unit in charge of train operations
OCC	Operation Control Center	A command center
ATO	Automatic Train Operation (System)	An automatic train operation system
ATP	Automatic Train Protection	An automatic train protection system
CBTC	Communications-based train control	A train control system using radio communication
ATS	Automatic Train Supervision	A train operations control system
Tuyến	Urban railway	An urban railway

Article 5 Staff Directly Related to the Operations of Trains etc.

1 Staff conducting work directly related to the operations of trains etc. shall be as follows:

(1) Persons who operate trains (operation on main lines, operation from Point A to B for maintenance, etc.),

(2) Persons who issue commands when there are deviations from train diagrams (train dispatchers).

(3) Persons who take train protection measures, or who carry out brake operation in emergencies (conductors).

(4) Persons who operate railway signals, or who control train routes and operate switches (station masters, heads of inspection yards).

2 Each OU shall define duty positions for the above work based on the equipment of its line.

Article 6. Condition of staffs directly relating to operation

1. The staffs directly relating to train operation prescribed in point 1, Article 5 shall meet the conditions prescribed in Article 4 of Circular No. 05/2015/TT-BGTVT "Regulations on standards of titles of staffs directly serving urban railway train operation " when working.

2. The staffs directly relating to train operation shall take the following responsibilities while working:

- a. To perform work in accordance with their titles, standards of technical grade, and with the process and rules issued by the company or site operation enterprises;
- b. To obey commands and instructions of the seniors and the head of OCC. However, in case of emergency and unable to receive instructions from the senior and the head of JCC timely, that staff shall provide way of handling to ensure safety for the train;
- c. To wear uniform, badge and mane and title plate.
- d. Based on the equipment and its specifications of their lines, each head of OU shall define the responsibilities, obligations, and work relationships of staff engaged in work related to train operation.

Article 7 Ensuring the Safety of Operation

1 All staff related to operation shall have a responsibility to ensure the safety of trains and passengers.

2 Each OU shall be obliged to develop internal work rules and audit the compliance of staff engaged in work related to train operation with the internal rules.

Article 8 Education and Training of Staff

- 1 All staff shall take courses provided by their organization or offered by the organization's commissioned institutions.
- 2 Staff shall not be able to conduct work related to train operation without meeting required technology and knowledge levels at the time of completion of courses and periodic examinations.

Article 9 Inspection and Reporting

- 1 Staff shall be obliged to take physical and mental examinations within a specified period. In the case where staff fails to meet the condition, supervisors shall not assign them train operation.
- 2 Upon arriving at the workplace, crew shall be obliged to report their physical and mental health and have an alcohol test. Before starting work, they shall check cautions posted on a bulletin board and sign related papers.
- 3 After the end of work, staff shall be obliged to report the status of work implementation.
- 4 During work, staff shall always pay attention to new cautions.

Article 10 Supervision over Staff

- 1 Supervisors or persons providing education shall obtain approval from a competent unit.
- 2 To appropriately supervise staff, supervisors shall take a roll call or make the rounds at the following timing, ask for a report, and give instructions.
- 3 At the time of supervisors' taking a roll call or making the rounds provided in the preceding paragraph, staff shall report to them the status of work, physical and mental conditions, the status of train operation, etc.

Article 11 Persons who operate trains etc.

Persons other than those specified below shall not operate trains etc.

- (1) Drivers shall possess a license issued by a competent authority.
- (2) Persons other than drivers shall not be able to operate trains etc. Apprentice drivers are allowed not to have a license if they are receiving training from an instructor.
- (3) Drivers who conduct operation only in a depot shall possess a license for operation in depots. They shall not conduct operation beyond depot boundaries.

Article 12 Crew

- 1 A driver and a conductor shall be on a train.
- 2 Crew shall not leave their workplaces during operating a train etc.
- 3 In the case of one-man operation, the driver also serves as the conductor.
- 4 Crew shall carry tools needed for conducting work. Each head of OU shall define them in the internal rules specified in Article 3.

Article 13 Operators of Fixed Signals

The following persons shall operate fixed signals:

- (1) Head of OCC, station masters, and heads of inspection yards.
- (2) Persons who maintain fixed signals. The operation is prohibited during the operation of trains etc.

Article 14 Operators of Switches

The following persons shall operate switches.

- (1) Head of OCC, station masters, and heads of inspection yards.
- (2) Persons who maintain switches. The operation is prohibited during the operation of trains etc.

Article 15 Shunting Sign Givers

Shunting sign givers shall be limited to station masters, drivers, conductors, and heads of inspection yards.

Part 3 Operation

Chapter 1 Train Making-up

Article 16 The Maximum Number of Cars per Train

Maximum number of a formed train shall be consistent with transport capacity, traction power and length of cars and its total length shall not be longer the length of platform except case of incidents or accidents.

Article 17 Confirmation of train connection

1. When train is formed, the Depot's staff shall be responsible to confirm train connection among cars to be completed and qualified for safe operation.

2. In case train connection between two trains is damaged or broken down, train driver is responsible to confirm it.

Article 18 Trains/Cars Permitted to Operate on Maine Lines

1 In principle, only trains are permitted to operate on main lines except the following:

- (1) Structure/equipment maintenance cars (Approval shall be obtained from the OCC.)
- (2) Relief trains

2 Under all circumstances, trains operated on main lines shall ensure safety by all means, and follow the commands of the dispatchers of the OCC or station staff in charge of operation.

Article 19 Installation of Fire Extinguishers

Each train car shall be equipped with fire extinguishers and indicate their locations.

Article 20 Tail-end cars of Trains

1 The tail-end car of a train shall be equipped with equipment needed for the cab.

2 The equipment specified in the preceding paragraph is as follows:

- (1) Brake pressure indicator
- (2) Emergency break switch
- (3) Warning system
- (4) Train radio system
- (5) Other necessary equipment

Chapter 2 Train Operations

Section A General Provisions

Article 21 Station Boundaries

1. The area inside the station shall be from the arrival signal post/sign to departure signal post/sign.
2. Station boundary signs shall be placed at all stations.
3. The area inside the station shall be handing area under responsibility of the station master; however, operation of train control device shall be the responsibility of the head of OCC.

Article 22 Operation on Main Lines

- 1 The OCC shall monitor all operation on main lines.
- 2 Cars shall not be able to run on main lines unless they are made up as a train. In exceptional cases, permission and commands shall be received from the head of OCC.

Article 23 Train Operation on the Right

Trains shall be operated on the right side of the railway except in the following cases:

- (1) Operation in station yards
- (2) Signal equipment and train control devices are able to ensure safety.
- (3) In the case of accidents or failures where permission and commands are received from the head of OCC.
- (4) In the case of testing facilities and cars where permission and commands are received from the head of OCC.

Article 24 Train Driving Positions

The driving position shall be located in the front part of the first car. In the case of failures or accidents, however, where commands are received from the head of OCC, driving in the last car is permitted.

Article 25 Operation Using Train Control Devices

Train control devices shall always be active. When their failures are detected, immediately stop the train, report to the head of OCC, and follow his or her commands.

Section B Development of Train Operation Plans

Article 26 General Principles of Train Diagram Development

- 1 Train diagrams are the basis of train operations. They shall meet the following requirements:
 - (1) The absolute safety of train operations shall be ensured.
 - (2) The requirements for passenger transportation shall be met
 - (3) Operation densities and operating speeds shall be appropriate to the infrastructure and equipment capacities of lines.
 - (4) The number of available crew members shall be appropriate for enabling all planned train operations.

- (5) Time zones not to operate trains shall be set in sections where the construction, repair, or maintenance of railway infrastructures is required.
- (6) A high on-time train arrival rate shall be ensured through simple and successful supervision.
- (7) Transit time and distances between stations shall be appropriate.
- (8) Return time at starting stations and terminal stations, and that when using crossovers shall reflect the time required for safe return work and crew position change.
- (9) Train parking shall be appropriately set based on the capacity of depots in the route and the track conditions such as gradients in train parking stations.

2 All workplaces related to train operations shall prepare their own maintenance/technical work implementation plans based on train diagrams to ensure safe and planned operation.

Article 27 Preparation of Train Performance Curves

- 1 In principle, transit time between stations shall be determined based on train performance curves.
- 2 In principle, basic conditions in preparing train performance curves shall be as follows:
 - (1) Conditions for trains
 - a) Prepare conditions using the lowest car performance in the line or on a car performance basis.
 - b) Consider car output, acceleration performance, and brake performance. Also take idle running time of the brake, one of car performance, into consideration.
 - c) Define car performance at an overhead wiring voltage somewhat lower than the specified voltage considering a decrease in acceleration performance due to decrease in voltage.
 - d) Define car performance at the intermediate value between the maximum diameter of new car wheels and the minimum diameter of maximally worn wheels having reached replacement levels.
 - e) The allowable maximum speed determined by equipment shall be strictly observed. When preparing a train performance curve, use a speed making an allowance for the maximum speed in the section.
 - (2) Conditions for train weights
 - a) Calculate total car weights and loads to determine a weight per train set.
 - b) Calculate total loads assuming that the number of passengers reached the train's capacity and using the average body weight of Vietnamese.
 - (3) Conditions for tracks
 - a) Use actual values for train travel distances.

b) Appropriately consider gradient and curve passage resistances.

Article 28 Setting of Train Numbers

1 In principle, a train number shall be given to each train for allowing easy recognition of the following items:

A: Train operation numbers

B: Directions of train operation

C: Types of trains (passenger train, out-of-service train, etc.)

D: Abbreviations of urban railway lines

2 Trains with completely the same train number shall not be set in the same time zone at the same time. In the case where it is unavoidable to set the same train number at the same time, an easy method to distinguish both trains shall be devised.

Article 29 Setting of Transit Time Between Stations and Stop Time at Stations

1 In principle, stop time at stations shall be set in steps of five seconds based on entrainment and detrainment time and volumes adding an allowance.

2 In principle, stop time at stations shall be set considering the entrainment and detrainment time of each time zone, such as rush hours, daytime, and off-peak hours, as necessary.

Article 30 Operation Schedules of Trains

1 In principle, trains shall be operated according to specified time schedules.

2 The head of OCC and crew shall try to restore specified schedules when train operations are disrupted.

3 All Units related to train operation shall prepare and implement their own work plans based on diagrams.

Article 31 Check of Indicator Lights

Drivers shall not start until they check the indicator lights to make sure that the doors are completely closed, except in the case of failures where necessary measures have been taken and safety has been ensured.

Article 32. Standard clock of the system

1. Standard clocks of the system shall be placed in OCC, stations, Depot and technical point related to train operation. These clocks are connected with time synchronous system to ensure synchrony of one source of standard time from the center clock.
2. Staff performing works relating to train operation, before working, shall adjust the clocks to match with the standard clock of the system.

Section C Brake Operation

Article 33 Train brakes

- 1 Drivers shall use the service brake to reduce speed. They shall use the emergency brake in abnormal cases.
- 2 When having used the emergency brake to stop a train, the driver shall report to the head of OCC and follow his or her commands.

Article 34 Conductors' Emergency Brake Operation

- 1 When the need to immediately stop a train arises, the conductor shall promptly take braking action using an emergency brake switch or other means. In this case, the conductor shall report the reason to the driver at once.
- 2 When having used the emergency brake to stop a train, the conductor shall report to the head of OCC and follow his or her commands.

Article 35 Emergency Braking Distances

Each head of OU shall specify the distances to stop a train using the emergency brake depending on the equipment of each line.

Article 36 Brake Tests by Drivers

Drivers shall check the brake function in the following cases:

- (1) When moving cars out of a shed.
 - (2) When the making-up of the train has been changed.
 - (3) When the driving position has been changed.
2. When a train is improved or replaced with a new one, the braking system shall be checked to confirm its function.

Article 37 In the Case of Brake Failures

- 1 When having detected brake failures, drivers shall immediately stop the train. After the stop, they shall report to the head of OCC and receive his or her commands.
- 2 The head of OCC who has received the report shall give commands on operating speeds.

Article 38 Number of Brake Shafts of a Train

- 1 The ratio of the number of brake shafts to the number of all shafts shall be 100%.
- 2 In the case where the condition in the previous paragraph is not satisfied, a safe operating speed shall be set and kept. ATO operation shall be prohibited and manual operation shall be conducted.
- 3 When there is a possibility of being unable to safely operate a train with the reduced speed, arrangements shall be made to merge it with the relief train and move it to a depot or the nearest side track.

Section D Operating Speeds

Article 39 Operating Speeds

The highest operating speed of each line shall be determined as follows:

- 1 Trains shall not be operated at a speed higher than the maximum speed defined by the speed table kept in the cab.
- 2 Trains shall not be operated at a speed higher than the speed specified by the signal equipment system.

Article 40 Operating Speeds of Trains under Various Conditions

- 1 Each OU shall specify operating speeds in detail for the cases defined in Articles 41 to 49.
- 2 When two signals indicate different speed limits, operating speeds shall follow stricter one (lower speed limit).

Article 41 Operating Speeds with an Insufficient Number of Brake Shafts

- 1 When recognizing that the brake function is not ensured, drivers shall switch the operation mode to limited speed operation mode. In the case of Tokyo Metro, for example, it specifies a completely stoppable speed depending on the number of brake shafts and a speed indicated by the cab signal.

For example: In Tokyo Metro, speed is reduced by from 20% to 30% compared to the one displayed in the meter.

2 In the case where the number of brake shafts is less than 50%, the train shall be merged with another train to return to a depot.

Article 42 Speed Limits on Curves, Turnouts, and Downward Gradients

In the case of curves or turnouts, the operating speeds defined in the operation manual for the line shall be followed.

(Operation speed table on the turnouts, curves, and downward gradients of each line should be prepared.)

Article 43 Operating Speeds in the Event of Failures of Trains, Tracks, etc.

1 In the event of failures of trains, tracks, etc., drivers shall change the operation method to either of the following operation methods and ensure operation at a speed not higher than 15 km/h.

- a) Pushing operation
- b) Backward operation
- c) Messenger method
- d) Emergency operation

2 The head of OCC shall determine methods in the event of failures of trains, tracks, etc.

Article 44 Operation Speeds Following Hand Signals

1 When signals cannot be used due to failures etc., drivers shall follow hand signals and operate trains at a speed lower than 15 km/h.

2 When returning to normal operations, drivers shall receive confirmation and approval from the head of OCC.

Article 45 Operating Speeds Following a Slow Speed Signal

During train operation, drivers shall follow slow speed signals installed on tracksides.

Note: Meanings different from speed limit signal is prescribed in Article 49.

Article 46 Operating Speeds for Yard Operation

Operating Speeds for yard operation shall follow the regulations of each line. In the case of Tokyo Metro, for example, the maximum speed is 40 km/h.

Article 47 Operating Speeds Following Shunting Signs

In the case of car shunting, drivers shall follow the operating speeds indicated by shunting sign givers.

Article 48 Operating Speeds in the Event of Switch Failures

In the event of switch failures (the case where switches do not lock, or switches do not interlock with signals.), drivers shall follow the commands of the OCC and operate trains at a speed limit specified for each line.

Article 49 Operating Speeds Following Speed Limit Indicators

When trains run in a speed limit section, they shall run at a speed lower than the speed limit until their tail ends completely pass through the section.

Section E Duties of the Head of OCC

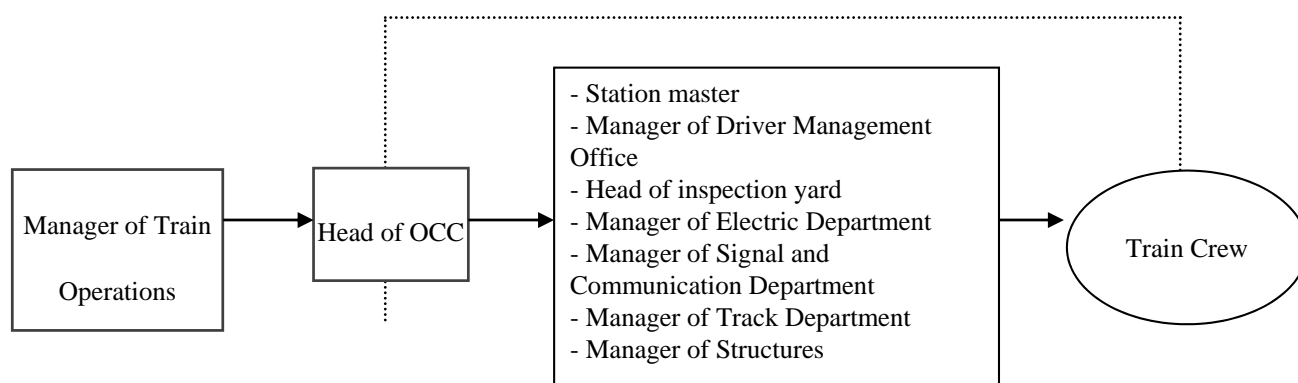
Article 50 Duties of the Head of OCC

The head of OCC shall supervise the operation of all trains to ensure safe and effective train operation, as well as carry out the following work:

- (1) Taking measures in the event of the occurrence of abnormalities and accidents.
- (2) Work related to ensuring safety between trains.
- (3) Work related to route control.
- (4) Work related to blocking.
- (5) Monitoring the failures of station and trackside equipment and sending notice to relevant organizations.
- (6) Work related to power management system.
- (7) Work related to railway track closing.
- (8) Work related to maintenance car operations.
- (9) Other necessary matters.

Article 51 Chain of Command in Train Operation

The diagram below shows the chain of command in train operation:



Note:

- The straight lines indicate the flows of commands.
- The dotted line means that the OCC can directly contact the Train Crew Office through train radios to provide instructions on operation commands. (In almost all cases, the instructions are provided through the dotted line to ensure safe and accurate on-time operation.)

Article 52 Use of Emergency Operation Switches

- 1 The use and replacement of emergency operation switches shall obtain the approval of the head of OCC.
- 2 The OCC may permit drivers to use emergency operation switches in the following cases:
 - a. When using an emergency operation system.
 - b. When using a dispatching system through a train radio.
 - c. Messenger method: Typically used when making up a car/train is needed to move a disabled train standing forward to a depot, or when repair or using a maintenance car is needed due to failures of a portion of a track.
 - d. In the case of backward operation.
 - e. When pushing operation is used: Sitting in a made-up car, a driver performs pushing operation communicating with the driver of disabled train standing forward.
 - f. Operation following hand signals.
 - g. In the case of overrun: It is used in a short distance between stations. The implementation method is the same as that of backward operation.
 - h. Giving a signal for shunting of cars (moving to a storage track, moving in a station yard, depot yard, or main line): Using hand signals for shunting of cars.

Article 53 Moving Disabled Trains to Side Tracks from Main Lines

In the event of car failures affecting other trains, the head of OCC shall give a command to move the car from the main line ahead of time.

Article 54 Commands Given to Drivers and Conductors

Each head of OU shall predetermine items for the head of OCC to give commands to drivers and conductors through train radios etc. The items shall correspond to the following cases:

- (1) When changing the method of operation due to the failures of train control devices, cars, or equipment.
- (2) When restricting train operation speeds.
- (3) When ignorance by drivers and conductors has a significant effect on the safety of train operation.
- (4) When giving drivers and conductors other necessary information.

Article 55 Commands Given by the Head of OCC via Station Masters

In the case of giving commands provided in the preceding article or in the event of train radio failures, the head of OCC may give commands to crew via station masters as necessary. In such cases, station masters shall stop approaching trains to inform the crew of the commands even if they are passing trains.

Section F Train Monitoring

Article 56 Train Monitoring

1 The rules of each OU shall clearly specify the obligations to ensure train safety and monitor train conditions for each type of job provided in the Ministerial Ordinance No. 05/2015/TT-BGTVT for Defining the Job Structures of Staff Directly Engaged in the Operation of Urban Railways.

- a. Driver
- b. Train dispatcher
- c. Assistant safety staff in the train
- d. Station staff engaged in operation

2 The following are train monitoring work:

- a. Check that trains approach a station platform and stop at a predetermined position.

- b. Check of abnormalities while trains are being stopped at a station (through a display screen)
- c. Check if the signal color is appropriate for train departure from the station.
- d. Check if any passenger is caught in the doors.

Section G One-man Operation

Article 57 One-man Operation

- 1 Trains with one-man operation equipment shall be operated by a driver alone.
- 2 In the case of one-man operation, the driver shall also work as an assistant safety staff in the train.

Article 58 Prohibition of One-man Operation

One-man operation shall be prohibited in the following cases (in the case of lines where equipment needed for one-man operation is on board):

- (1) When alarm signals are inoperable.
- (2) When continuing operation with incompletely closed doors due to door failures.
- (3) When indicator lights to show drivers that doors are completely closed do not light up.
- (4) When being operated in the pushing operation mode.
- (5) When it is incapable of applying brakes to all cars at the same time.

Section H ATO Operation

Article 59 ATO Operation

- 1 Trains with ATO operation equipment shall be operated automatically.
- 2 When detecting an abnormality during ATO operation, drivers shall immediately stop the train, report to the head of OCC, and receive his or her commands.
- 3 In ATO operation, the ratio of the number of brake shafts to the number of all shafts shall be 100%. If this condition is not satisfied, manual operation shall be performed.
- 4 Each head of OU of a line with ATO equipment shall predetermine the conditions for prohibiting ATO operation and the methods of operation when it is prohibited.

Article 60 Emergency Brakes in ATO Operation

In the event of requiring emergency brakes, drivers shall manually apply emergency brakes even during ATO operation.

Chapter 3 Railway Track Closing

Article 61 Implementation of Railway Track Closing

Railway track closing shall be made in the following cases:

- 1 When using maintenance cars for structures and equipment
- 2 When closing waterproof gates (including testing)
- 3 When conducting trial runs of trains/cars
- 4 In the case of conducting work immovable to a side track when trains approach.
- 5 When construction is conducted in a track using quickly removable simple temporary equipment.
- 6 When dealing with accidents/traffic disturbances takes time.

Article 62 Time Zones where Railway Track Closing Can Be Made

- 1 Railway track closing shall not be implemented in a time zone from the starting time of train operation to the ending time of train operation.
- 2 When restoration after accidents/traffic disturbances must be made, railway track closing may be implemented following the commands of the head of OCC.

Article 63 Application and Approval of Railway Track Closing

- 1 The head of OCC is responsible for approving railway track closing.
- 2 Application and approval of railway track closing are provided as follows:
 - a. Up to 10 days before implementing railway track closing, a person in charge of maintenance implementation shall prepare a requisition for implementing railway track closing and submit it to the head of OCC.
 - b. If the information provided in the application is appropriate, the head of OCC gives the issue number of the operations notification to the applicant.
 - c. In the case of implementing work in the nighttime after the ending of train operation, enter the work in the night work management system and obtain approval from the head of OCC. (Explanation: to enable the screen installed in the OCC to display the section of implementing railway track closing.)

3 When restoration after accidents/traffic disturbances takes time, the head of OCC shall issue commands/instructions to implement railway track closing.

4 As for implementing railway track closing, the head of OU shall provide separate regulations and clearly define organizational and individual responsibilities.

Article 64 Sections Implementing Railway Track Closing

Sections implementing railway track closing shall be defined as follows:

- 1 In the case of main lines, the unit of railway track closing shall be a section between stations.
- 2 Side tracks and inspection yard lines shall be included in the section.
- 3 When implementing railway track closing after stopping all train operations, a section designated by the head of OCC shall be implemented, regardless of the provisions in the preceding paragraphs 1 and 2.

Article 65 Notification of Railway Track Closing

1 The applicant shall notify railway track closing to relevant parties until two days before implication through operations notifications. The following information shall be listed in the operations notification:

- a. The issue number of the operations notification given by the head of OCC.
- b. Types and reasons of construction.
- c. Date of implementation.
- d. Section of implementing railway track closing.
- e. Actual construction section.
- f. Name of a person responsible for the construction.
- g. Whether to post boards notifying railway track closing.

2 In the case of not notifying railway track closing through operation notifications, the head of OCC shall issue commands to relevant departments after approving the application to notify the implementation of railway track closing.

Article 66 Prohibition of the Entry of Trains into Railway Track Closing Sections

1 The head of OCC shall use either of the following methods to prohibit the entry of trains into railway track closing sections.

- a. Turn signals located outside the railway track closing section to STOP.
- b. Shut off the power to unable train operation after the ending of train operation.

2 Station masters shall not allow trains to enter into the railway track closing section from the time they receive the commands of railway track closing from the head of OCC to the time they receive the commands of terminating the railway track closing.

Article 67 Operation of Maintenance Cars

- 1 Maintenance cars can run only the sections implementing railway track closing.
- 2 Each OU shall define that maintenance cars can run only the sections implementing railway track closing and also define the operation of maintenance cars in the sections.

Article 68 Posting of Boards Notifying Railway Track Closing

- 1 When implementing railway track closing, boards shall be posted in the OCC and stations to notify railway track closing sections.
- 2 When boards notifying railway track closing are posted, drivers shall not start train operation. In this case, drivers report to the OCC and receive commands from it.

Article 69 Preparation of Railway Track Closing Records

- 1 The head of OCC shall enter necessary information into railway track closing records and take the procedure for implementing railway track closing.
- 2 Railway track closing records shall be kept in storage for three years after the date of implementation.

Article 70 Completion of Railway Track Closing Procedures

The procedures complete when all necessary procedures and measures specified in this rulebook have been implemented and entry into railway track closing records has been finished.

Article 71 Approval Procedures for Starting Railway Track Closing Construction

The relevant parties implementing railway track closing construction shall not start the construction before asking the head of OCC to confirm the completion of railway track closing procedures and whether to start construction.

Article 72 Reporting of the Completion of Railway Track Closing Construction

When confirming that the construction has been completed and there is no obstruction in starting train operations, the person in charge of construction shall report the results to the head of OCC.

Article 73 Termination of Railway Track Closing

Upon receiving the report of the completion of the construction from the person in charge of the construction, the head of OCC shall enter necessary information into railway track closing records and terminate the railway track closing. After termination, he or she shall notify relevant departments of the results.

Article 74 Termination of the Prohibition of the Entry of Trains into Railway Track Closing Sections

- 1 After terminating railway track closing, the head of OCC shall terminate the prohibition of the entry of trains into railway track closing sections.
- 2 In the case where station masters implemented the prohibition of entry, they shall terminate the prohibition of entry, and report the measures to the head of OCC.

Article 75 Removal of Boards Notifying Railway Track Closing

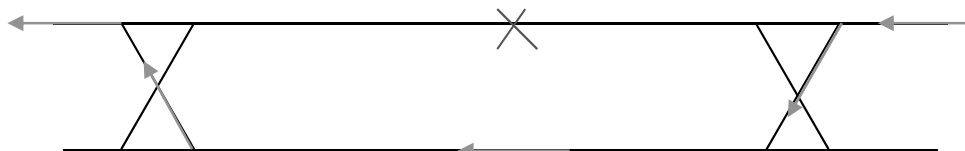
- 1 After terminating railway track closing, the head of OCC shall instruct relevant station masters to remove the boards notifying railway track closing.
- 2 After removing the boards, the station masters shall report the measures to the head of OCC.

Part 4 Ensuring the Safety between Trains

Chapter 1 General Provisions

Article 76 Operation Methods of Trains

- 1 Using train control devices, trains shall be operated on a double-track configuration. In the event of failures, however, operation methods can be changed by the commands of the head of OCC.
 - (1) The operation method when one of two tracks is suspended and train control devices make single-track operation possible.



(2) The operation method when train control devices are out of order and the back-up system is normally functioning.

(3) The operation method (dispatching system) in which the head of OCC designates a block section when train control devices are out of order and the back-up system is also disabled, and train positions can be confirmed by OCC.

(4) Emergency operation when the above methods No. 1 to 3 are unusable.

Chapter 2 Speed Control Systems

Article 77 Speed Control Systems

Speed control systems shall be able to automatically ensure safety between trains using train control devices.

2. Distance between trains shall be maintained by Automatic train protection (ATP).

Article 78 Conditions for Speed Control Systems

1 In the case of using speed control systems, stop signals are automatically indicated under the conditions where there is a possibility of train collisions. Emergency brakes and service brakes shall be automatically activated when absolute stop signals and stop signals are indicated, respectively.

2 In the case of signaling systems using track circuits, absolute stop signals or stop signals are automatically indicated if any of the following conditions applies:

(1) Conditions for absolute stop signals:

- a. When trains or cars stand on track circuits where trains stand.
- b. When switches related to track circuits where trains stand are not open to traffic in the proper direction.
- c. When trains or cars on other tracks violate a fouling point at a junction or intersection area.
- d. In the event of track circuit failures
- e. When a track circuit in the approach of a section indicating absolute stop signals is short, the track circuit and the section require absolute stop signals.
- f. In other cases where equipment specifications require the indication of absolute stop signals.

(2) Conditions for stop signals

- a. A track circuit in the approach of a track circuit indicating absolute stop signals

- b. When a track circuit in the approach of a section indicating stop signals is short, the track circuit and the section require stop signals.
- c. In other cases where equipment specifications require the indication of stop signals.
- 3 In the case of wireless train control devices, absolute stop signals or stop signals shall be indicated in any of the following conditions:
 - a. When a train speed exceeds the speed given by a stop limit braking pattern.
 - b. When related switches in the train route is not open to traffic in the proper direction.
 - c. When trains or cars on other tracks violate a fouling point at a junction or intersection area.
 - d. In the event of wireless device failures (including the blocking of communication)
 - e. When train positions are unknown.
 - f. In other cases where equipment specifications require the indication of absolute stop signals or stop signals.

Article 79 Braking signal compliance

Treatment of train driver in case of emergency braking light or normal braking light shall be as follows:

- 1 In any of the following cases, drivers shall report to the head of OCC after the train has stopped and receive his or her commands.
 - (1) When an absolute stop signal is indicated.
 - (2) When one minute has passed after the indication of a stop signal.
- 2 When receiving a report specified in the preceding paragraph, the head of OCC may issue a command for changing the operation method as necessary.

Chapter 3 Operation Using Back-up Systems

Article 80 Operation Using Back-up Systems

In the case where operation using a speed control system is not possible, but its back-up system normally works, and safety between trains is automatically ensured, the driver may operate the train using the back-up system.

Article 81 Operation Using Back-up Systems

Each head of OCC shall predetermine the details of the operation using back-up systems as follows:

- (1) Criteria for judging that the operation using back-up systems is practical.

- (2) Commanders in charge of procedures for changing operation methods.
- (3) Boundaries of operation sections and implementation sections.
- (4) Operating speeds.
- (5) Implementation and timing to restore to predetermined operation methods.
- (6) Notification to trains running in sections for which operation methods have been changed, and information and methods to be confirmed by crew.
- (7) Measures to be taken by stations included in the sections for which operation methods have been changed.
- (8) Operation manuals and procedure check sheets for implementing such operation.

Chapter 4 Operation Performed by Setting a Block Section for Ensuring Safety (Dispatching System)

Article 82 Operation Performed by Setting a Block Section for Ensuring Safety

The operation performed by setting a block section means an operation method that a train solely uses a block section when normal operation using speed control systems or back-up systems is not possible.

Article 83 Operation Method Performed by Setting a Block Sections (Dispatching System)

1 The operation method performed by setting a block section (dispatching system) used when systems to ensure safety between trains are out of order is defined as follows:

- (1) The operation method performed by setting a block section (dispatching system) may be used when equipment on the vehicle side of train control devices is out of order and shall not be performed if train radio is unusable.
- (2) The boundaries of block sections are defined below. Checking the locations of preceding trains, the head of OCC shall issue commands for designating a block section.
 - a. In the case of stations, the boundary is where a starting signal at the most advanced point in the protection area is located.
 - b. In the case of car stops, the boundary is where a starting signal is located.
- (3) When the operation method performed by setting a block section (dispatching system) is used, it shall not be changed halfway between stations. In this case, an emergency operation method shall be used to the adjacent station.
- (4) More than two trains shall not be operated in a block section at the same time.

Article 84 Details of Operation Method Performed by Setting a Block Section (Dispatching System)

Each head of OU shall predetermine the details of ensuring safety by setting block section.

- (1) Criteria for judging that operation to ensure safety by setting a block section are practical.
- (2) Procedures and commanders for changing operation methods.
- (3) Boundaries of operation sections and implementation sections.
- (4) Operating Speeds
- (5) Implementation and timing to restore to predetermined operation methods.
- (6) Notification to trains running in sections for which operation methods have been changed, and information and methods to be confirmed by crew.
- (7) Measures to be taken by stations included in the sections for which operation methods have been changed
- (8) Operation manuals and procedure check sheets for implementing such operation

Article 85 Records of Operation Performed by Setting a Block Section (Dispatching System)

The head of OCC shall prepare records to avoid operational failures when using the operation method performed by setting a block section (dispatching system). The records shall include the following:

- (1) Command number.
- (2) Train number as a command object.
- (3) Name of the OCC staff issuing commands to the driver.
- (4) Name of crew who received the commands.
- (5) Locations of preceding trains.
- (6) Operation method performed by setting a block section (dispatching system)

Chapter 5 Emergency Operation

Article 86 Emergency Operation

Emergency operation means the operation depending only on the carefulness of drivers carried out when none of the operation methods using speed control systems, back-up systems, or dispatching systems works.

Article 87 Implementation of Emergency Operation

In either of the following cases, the head of OCC may issue a command to change the operation method to emergency operation.

- (1) Failures of train control devices, and when being unable to operate trains using back-up systems or by setting a block section (dispatching system)
- (2) When a train once stopped following the stop signal sent by a preceding train restarts to move to a section ahead for relieving disabled trains or other purposes.

Article 88 Performing Emergency Operation

Each head of OU shall predetermine the details in performing emergency operation.

- (1) Procedures and commanders for changing operation methods.
- (2) Procedures to restore the operation using predetermined train control devices
- (3) Operation of system switches to ensure safety between trains.
- (4) Procedures for checking routes at the time of approaching and departing stations and methods for instructing trains

Article 89 Measures to Be Taken by Drivers in Emergency Operation

When driving a train by emergency operation, drivers shall take care of the following:

- (1) When performing emergency operation, drivers shall turn the switch for ensuring safety between trains to OFF after obtaining the approval of the head of OCC.
- (2) Trains in an emergency operation mode shall be operated at a speed stoppable within a line-of-sight distance, and at a speed not more than 15 km/h with extreme care even in the case of good visibility.
- (3) During emergency operation, drivers shall operate a train at a speed specified in the previous paragraph regardless of cab signal indication.
- (4) When a train approaches a preceding train, the driver shall stop the train at a distance not less than 50 m. When the preceding train has started operation, the driver shall not start operation until reporting to the head of OCC after a lapse of not less than one minute.
- (5) When the cab signal indicates proper signals to show that there is no reason for continuing emergency operation, the driver shall temporarily stop the train, report to the head of OCC, and receive his or her commands.

Chapter 6 Messenger Method

Article 90 Implementation of the Messenger Methods

1 The messenger method means an operation method to operate a train in a section where other trains etc. stand.

2 In the following cases, the messenger method shall be implemented.

(1) When operating a relief train from opposite direction to relieve a train standing halfway between stations due to failures etc.

(2) When making and implementing a plan to operate a construction train in a section where a construction train operated for emergency repair stands.

3 Trains waiting for relief or preceding construction trains shall not move from where they stopped.

Article 91 Operation Using the Messenger Method

Each head of OU shall predetermine the details of operation using the messenger method.

(1) Procedures and commanders for changing operation methods.

(2) Roles of messengers.

(In the case of Tokyo Metro, messengers wear a white armband lettered "Messenger." They are designated by the head of OCC.

3 Messengers shall have authority and expertise sufficient for performing their duties. The head of OCC determines a person in charge of implementing the messenger method for a certain section.

Explanation: Only one messenger is designated for one area. After two train sets have been coupled, the head of OCC issues a command to remove the armband.

Article 92 Messenger Method Records

The head of OCC shall prepare a confirmation slip format used for inspection when implementing the messenger method. A person in charge of implementing the messenger method shall submit the records before performing his or her duties.

Article 93 Conditions for Implementing the Messenger Method

1 Messengers shall make arrangements with the station masters of both sides of a section where the messenger method is implemented.

2 Drivers operating a train in the section where the messenger method is implemented shall not operate the train before making sure that the messengers are on board.

3 Messengers shall not allow the following train to enter into the section where the messenger method is implemented before making sure that the train has returned to either of the stations of both sides of the section where the messenger method is implemented.

Part 5 Other Operating Methods

Chapter 1 Backward Operation

Article 94 Backward Operation of Trains

Trains shall not be operated in the backward operation mode, except in the following cases where commands are received from the head of OCC.

- (1) In the event of the failures of tracks, overhead contact lines or cars
- (2) When operating construction trains or relief trains.
- (3) Operation for facility or car tests etc.
- (4) When returning trains standing between stations due to accidents etc. to a backward station

Article 95 Work of Crew

1 Each head of OU shall predetermine the following details of the work of crew when operating trains in the backward operation mode.

- (1) Driving positions
- (2) Operation of train indicators
- (3) Whistle signs
- (4) Operation to be performed when a train approaches a station

2 Trains shall be operated at a speed stoppable within a line-of-sight distance, and at a speed not more than 15 km/h with extreme care even in the case of good visibility.

Article 96 Responsibilities of the Head of OCC

1 Before starting backward operation, the head of OCC shall make sure that trains etc. are not standing in the section using a traffic information display etc.

2 A train shall not be moved backward before stopping the following train short of the backward operation section and making sure that the following train has been stopped at a position it would never collide with the train moving backward.

3 In the case of performing backward operation and train control devices enable ensuring safety, operation shall be made using these devices as much as possible.

Chapter 2 Pushing Operation

Article 97 Pushing Operation of Trains

In principle, the pushing operation of trains is prohibited except in the following cases where commands are received from the head of OCC:

- (1) In the event of the failures of tracks, overhead contact lines, or cars.
- (2) When operating construction trains or relief trains.

Article 98 Operation Following Pushing Operation Signs

When starting operation following pushing operation signs, relevant parties shall make arrangements beforehand with each other on sign systems without fail.

Article 99 Responsibilities of Crew

When operating trains in the pushing operation mode, the crew shall comply with the followings:

- (1) The following speeds shall be used:

Condition	Speed
When the foremost cab satisfies all the following conditions: - Being able to check the signals of train control devices. - Being able to apply the brakes to all cars.	Not more than 25 km/h
When performing operation following shunting signs in a state of pushing operation.	Not more than 15 km/h
In the cases other than the above.	

(2) Pushing operation shall be performed following pushing operation signs. In this case, notice over the intercom shall be the rule. When it is unusable, measures for sign givers to clearly convey their intention, such as car buzzer signs, train announcements, signal lamps, etc., shall be taken.

(3) In the event of being unable to confirm pushing operation signs, operation shall immediately be stopped.

Chapter 3 Shunting Operation

Section A General Provisions

Article 100 Shunting Operation

The shunting operation shall be performed following shunting signals or shunting signs.

Section B Yard Operation

Article 101 Meaning of Yard Operation

1 The yard operation means the operation method to operate trains following the indication of shunting signals.

2 This operation method applies to the following cases:

(a) Operation in station yards.

(b) Operation in inspection yards. This rule does not apply to workshop tracks not obstructing operation in inspection yards.

Article 102 Brakes of Cars Operated in Yards

1 Brakes of cars operated in yards shall be as follows:

(1) They shall be able to control all cars at the same time from the cab.

(2) The ratio of the number of brake shafts to the number of all shafts shall be 100%.

2 When the number of brake shafts is reduced due to accidents etc., but the ratio remains to be not less than 50%, the train may be operated at a speed not more than 15 km/h.

Article 103 Driving Position when Performing Yard Operation

When performing the yard operation, the driving position shall be located in the cab of the first car.

Article 104 Operation of Train Control Devices when Performing Yard Operation

1 When performing yard operation, train control devices shall be used.

2 Regardless of the provision in the preceding paragraph, when performing yard operation in a section not equipped with train control devices, cars shall be operated accordingly from the end portion of the terminating equipment of train control devices.

3 The head of OU shall predetermine the details of operation in sections unequipped with train control devices.

Article 105 When Train Control Devices in Yard Operation Sections Are Unusable

When train control devices in yard operation sections are unusable due to failures or other reasons, the following measures shall be taken:

- (1) In the case where shunting signals are installed on the ground, operation may be performed at a speed of yard operation using the emergency operation switch and following shunting signal indications.
- (2) In the case where shunting signals are not installed on the ground or shunting signals are out of order, operation may be performed following shunting signs at a speed indicated by shunting signs.

Section C Operation Following Shunting Signs

Article 106 Meaning of Operation Following Shunting Signs

Operation following shunting signs means the operation method for the movement, release, or coupling of cars following shunting signs.

Article 107 Operation of Train Control Devices When Operating Trains Following Shunting Signs

- 1 When operating trains following shunting signs, train control devices shall not be used.
- 2 The head of OU shall predetermine the details of operation following shunting signs.

Article 108 Operation Following Shunting Signs and the Signs

When driving following shunting signs, drivers shall not operate trains before receiving shunting signs.

Article 109 Preparation before Starting Operation Following Shunting Signs

- 1 Before operation following shunting signs is started, shunting sign givers shall prepare the following:
 - (1) Shunting sign givers shall check the following points:
 - a. Tracks on which trains are to be operated are trouble-free.
 - (a) Switches in operation sections are open to traffic in the proper direction.
 - (b) Presence or absence of parked cars. If there are parked cars, check distances to them.

(c) The length of used tracks are long enough to operate. Especially when operation is performed near the end portion of a track, check the distance from a stop position to the end portion of the track.

b. When operation following shunting signs is performed due to pushing operation etc. and shunting signals are usable, shunting sign givers may use shunting signals to check routes. In this case, the section where shunting signals can be used shall be up to the installation points of car stop indicators.

(2) Shunting sign givers shall notify the driver of the following information in advance:

a. Operation sections.

b. Tracks on which trains are to be operated are trouble-free.

(a) Switches in operation sections are open to traffic in the proper direction.

(b) Presence or absence of parked cars. If there are parked cars, check distances to them.

(c) The length of used tracks are long enough to operate, especially when operation is performed near the end portion of a track, check the distance from a stop position to the end portion of the track.

c. Operating speeds, as necessary.

(3) Shunting sign givers shall make arrangements with drivers and relevant parties in advance on the following:

a. Sequence of work.

b. Work methods.

Article 110 Operation of Signals Related to Operation Following Shunting Signs

In principle, fixed signals shall not be used when operating trains following shunting signs. The fixed signal operators specified in Article 12, therefore, shall indicate stop signals on shunting signals related to tracks to be used and set levers related to routes at the normal position.

Article 111 Prohibition of Shunting

1 In principle, shunting operation is prohibited in the following cases:

(1) In the case where shunting operation extends beyond the boundary of the station in the direction of train movement.

(2) In the case of performing shunting operation by stopping other trains outside the station.

2 An exceptional case is when there is an emergent reason such that the head of OCC has commanded to open a track for train movement. Fully checking shunting sections, the head of OCC

shall not issue a command to perform shunting before stopping trains moving in the approach of the section.

Article 112 Shunting of Trains

The shunting of trains shall be considered as the shunting of cars.

Section D Configuration of Routes

Article 113 Configuration of Routes

The head of OCC shall configure train routes through central control. In the following cases, however, station masters shall configure them through local control.

- (1) When central control is unworkable, or when the head of OCC approves the necessity.
- (2) Regardless of the provision in the preceding paragraph, the heads of inspection yards shall configure train routes in their inspection yards. In the case where equipment specifications require that the OCC configures train routes in inspection yards, the head of OCC carries out the configuration.

Article 114 Central Control and Local Control

- 1 Switching from central control to local control and vice versa shall be performed by the command of the head of OCC.
- 2 The head of OCC and station masters or the heads of inspection yards shall record the following:
 - (1) Starting and ending time of local control.
 - (2) Implemented items (reasons for switching etc.)

Section E Operation of Switches

Article 115 Normal Positions of Switches

The normal positions of switches are defined as those open to traffic in the following directions:

- (1) In the case of switches enabling branching to a main line and another main line, the direction of the primary main line is normal.
- (2) In the case of switches enabling branching to a main line and a side track, the direction of the main line is normal.

(3) In the case of switches enabling branching to a main line or a side track and a safety siding, the direction of the safety siding is normal.

(4) In the case of switches enabling branching to a side track and another side track, the direction of the primary side track is normal.

Article 116 Normal Position Restoration of Switches

When switches are set to a reverse position to pass trains etc., they shall be restored to their normal positions immediately after the passing of the trains, except when train control devices are used.

Article 117 Measures to Be Taken When Broken Switches Are Locked

1 When switches installed in train routes cannot be locked due to failures or other reasons, station masters shall use a special key bolt to lock the tongue rail before the passing of trains. If all of the following conditions are satisfied, the switches are considered as being locked using a key bolt.

(1) When using an independent lever or a hand-turned wheel to throw a switch and confirming that the switch has been completely thrown by means of an indicator light etc.

(2) When turning the power of the switch to OFF or taking other measures to make the tongue rail completely immovable after taking the procedures described in the preceding paragraph.

2 When using a key bolt to lock a switch, station masters shall report the measures to the head of OCC, who shall notify it to drivers. Station masters notify it to drivers as necessary.

Article 118 Check of Switches Incapable of Being Locked

As for switches incapable of being locked by interlocking devices, switch operators shall make sure that they are open to traffic in the proper direction before the passing of trains.

Section F Parking of Cars

Article 119 Parking Positions of Cars

1 Cars shall be parked in the protection area of a fouling point and in a track with a gradient that trains with released brakes cannot move by themselves.

2 The preceding paragraph is inapplicable to the case where a system is developed to assign a monitor to stop trains as necessary or measures such as power shutdown, attaching hand scotches, etc. are taken.

Article 120 Parking of Cars

When parking cars, the following measures shall be taken:

- (1) To prevent train rolling, drivers shall secure brakes and lock the controller, and use hand scotches as necessary.
- (2) When being engaged in shunting operation, shunting sign givers shall check the use of hand scotches specified in the preceding paragraph.

Article 121 Scotch Blocks

When cars are parked on tracks equipped with scotch blocks, station masters or the heads of inspection yards shall take the following measures:

- (1) Parked cars are present. → Close
- (2) Parked cars are absent. → Open

Attach the pictures of the usage conditions of scotch blocks.

Part 6 Signals

Chapter 1 General Provisions

Article 122 Relation between Railway Signals and Operation

Drivers shall operate trains in accordance with the conditions indicated by railway signals.

Article 123 Types of Railway Signals

1 Types of railway signals are as follows:

(1) Signals

Devices to indicate operational conditions for trains etc. operating in a certain section using shapes, colors, sounds, etc.

(2) Signs

Intentions of sign givers indicated to the other staff or between staff using shapes, colors, sounds, etc.

(3) Sign markers

Devices to indicate positions, directions, conditions, etc. using shapes, colors, etc.

2 These shapes and colors shall be predetermined before use.

Article 124 Indication Systems

In case that daytime and nighttime railway signals are differently indicated, they shall be indicated following the table below. The methods capable of conveying clear messages to the other parties shall be used.

Condition	Indication system
From sunrise to sunset	Daytime system
From sunset to sunrise	Nighttime system
In tunnels	
In above-ground sections where signal indication and identification are difficult due to bad weather etc.	

Article 125 Relation between Proceed Signals and Operation Speeds

- 1 When signals indicate a signal to proceed, trains shall be operated at a speed not more than the corresponding speed.
- 2 Each head of OU shall predetermine the details of the relation between proceed signals and operation speeds.

Article 126 Indication of Caution Signals

- a When wayside signals indicate caution signals, trains or cars shall proceed anticipating that the next wayside signal would indicate a stop signal or a caution signal.
- 2 In the case where operation is performed following shunting signals and no shunting signal is installed forward, trains shall be operated anticipating stopping before proceeding to a car stop indicator or a car stop marker.

Article 127 Use of Hand Signals to Indicate Proceed Signals

When receiving a proceed signal indicated by a hand signal, drivers shall take the following measures:

Condition	Measure
When having received advance notice of indication by a hand signal.	Proceed beyond the indication position.
When having received no advance notice of indication by a hand signal.	Stop temporarily at the position of an entering signal indicator or starting signal indicator, and

	proceed after receiving a notice of indication by a hand signal.
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Article 128 In the Case Where Signals Used for Slowing Down the Speeds of Trains etc. Are Indicated

When receiving signals used for slowing down the speeds of trains etc., drivers shall take the following measures:

Signal type	Measure
Slow speed signal	Proceed beyond the indication point at a speed slower than the specified speed.
Slow speed notifying signal	Proceed beyond the indication point anticipating slow speed signal indication forward.
Speed limit termination signal	Remove the speed limit after the tail-end car of the train has passed the indication point.

Article 129 In the Case Where Speed Limit Indicators Are Installed

When trains etc. enter into a section with a speed limit indicator, drivers shall take the following measures:

Condition	Measure
When the first car of a train enters into a section with a speed limit indicator.	Enter into the section with the speed limit indicator at a speed lower than the specified speed limit.
When the tail-end of a train has passed a section with a speed limit indicator.	Remove the speed limit.

Article 130 Relation of Absolute Stop Signal and Stop Signal Indication to Train Operation

1 When the cab signal or a wayside signal indicates an absolute stop signal or a stop signal, the driver shall take in principle the following measures:

- (1) In the case of an absolute stop signal, the driver shall immediately use the emergency brake to stop the train anticipating that trains etc. stand or the track is broken within a braking distance.
- (2) In the case of a stop signal, the driver shall immediately stop the train using service brake anticipating that there is an absolute stop signal section ahead.

2 The train being stopped following the provision specified in the preceding paragraph shall not proceed unless any of the following conditions applies:

- (1) When the cab signal or a wayside signal indicates a proceed signal.

(2) When the train is in a station yard, it may proceed upon receipt of a command to proceed from the head of OCC or the station master.

(3) In places other than the one described in the preceding paragraph, the train may proceed upon the receipt of a command to proceed in the emergency operation mode from the head of OCC.

3 Each head of OU shall predetermine the details of operation following stop signals.

Article 131 Stop Signals Indicated by Means Other than Cab Signals or Wayside Signals

1 Trains shall immediately stop when stop signals are indicated by means of hand signals or special signals other than cab signals or wayside signals.

2 The trains having stopped following the provision in the preceding paragraph shall not proceed until a proceed signal is indicated or other instructions are given.

3 Each head of OU shall predetermine the details of operation in the case where stop signals other than cab signals or wayside signals are indicated.

Article 132 Prohibition of Using a Signal for More than One Route

A signal shall not be used for more than one route, except where a single signal is capable of clearly distinguish indications for different routes by attached route indicator etc.

Article 133 In the Case of the Display Faults or Failures of Signals

1 In the case of the display faults or failures of signals, drivers shall take the following measures:

Condition	Measure
When signals are not indicated due to the failures etc. of the cab signal or wayside signals.	Drivers shall immediately stop the train, report to the head of OCC, and receive his or her commands.
When information is not displayed on the information devices attached to signals.	
When incorrect information was indicated.	
When a signal and a hand signal indicate different signals.	Drivers shall follow a signal putting a greater limit on the operation of trains etc. When having received a notification of using a hand signal, drivers shall follow the indication of the hand signal.

2 Each head of OU shall predetermine the details of operation in the case of the display faults or failures of signals.

Article 134 Halting the Use of Cab Signals

- 1 When performing the following operation independently of the indication of the cab signal, drivers shall take measures such as extinguishing the display.
 - (1) Operation using a back-up system in place of the speed control system.
 - (2) Operation by setting a block section to ensure safety.
 - (3) Messenger method.
- 2 The display of the cab signal shall also be extinguished when performing yard operation.
- 3 Each head of OU shall predetermine the details of operation in the case of halting the use of cab signals.

Article 135 Halting the Use of Wayside Signals

- 1 When halting the use of wayside signals, the following measures shall be taken:
 - (1) The head of OCC shall notify the halting of use to drivers
 - (2) The display of wayside signals whose use is to be halted shall be extinguished.
 - (3) To make the halting of use clearly known, measures such as covering shall be taken.
- 2 Each head of OU shall predetermine the details of operation in the case of halting the use of wayside signals.

Article 136 Signal Check by Drivers and Conductors

- 1 Drivers shall check and follow the indications of signals.
- 2 When starting a train, conductors shall check the indication of the route's starting reaction indicators.
- 3 When performing pushing operation, a crew member riding in the foremost part shall check and follow the indication or indication status of route and railway signals.
- 4 Each head of OU shall predetermine procedures for drivers and conductors to correctly and clearly check signals etc. Drivers and conductors shall comply with the procedures to prevent signal misidentification.

Chapter 2 Wayside Signals

Section A General Provisions

Article 137 Meaning of Wayside Signals

Wayside signals mean the devices installed at a predetermined location on the ground to indicate signals.

Article 138 Types of Wayside Signals

Wayside signals shall be classified into shunting signals and route indicators.

- (1) Shunting signals shall indicate signals for cars performing yard operation.
- (2) In the case of the shared use of a shunting signal for a track branching into more than one route, route indicators shall be attached to the shunting signal to indicate car routes.

Article 139 Indication by Wayside Signals

The head of OU of a track equipped with wayside signals shall predetermine the details of the types and indication systems of wayside signals.

Section B Operation of Signals

Article 140 Normal Positions of Signals

The normal positions for signal indication are as follows:

- (1) Normal positions of shunting signals

Indicate stop signals.

- (2) Normal positions of route indicators

Indicated when a shunting signal equipped with relevant route indicator indicates a proceed signal, and not indicated when it indicates a stop signal.

Article 141 Timing to Indicate a Proceed Signal on the Cab Signal through Manual Route Control

The timing to indicate a proceed signal on the cab signal shall be immediately before starting train operation.

Article 142 Conditions for Indicating Proceed on Shunting Signals

The signals to indicate proceed on shunting signals shall be indicated on a shunting signal in the approach of the shunting signal indicating a stop signal.

Article 143 Timing to Indicate an Instruction to Proceed on Shunting Signals

The timing to indicate instructions to proceed on shunting signals shall be immediately before starting yard operation.

Article 144 In the Case of Temporarily Halting Passing Trains

To temporarily halt a train passing a station, use a train radio to instruct the train to stop. In the case of manual route control, however, set the departure route as the normal position, and indicate a stop hand signal to the train as necessary.

Article 145 Measures to Be Taken In the Event of the Failures of Interlocking Devices

When interlocking devices are unusable due to failures, the following measures shall be taken:

Person in charge	Measure
Station master	Report to the head of OCC and receive his or her instructions.
Head of OCC	Instruct the station master to stop the use of the cab signal or the wayside signal, and use hand signals for train operation.

2 When indicating a proceed signal using a hand signal, the route shall be set to the proper direction for the train to proceed.

3 Each head of OU shall predetermine the details of measures to be taken in the event of the failures of interlocking devices.

Article 146 Measures to Be Taken in the Event of the Failures of Route Indicators

When route indicators are unusable due to failures, the following measures shall be taken:

Person in charge	Measure
Head of OCC or head of inspection yard	Notify drivers that route indicators are out of order and unusable.
Driver	Except the case of being notified as in the preceding paragraph, when route indicators are incapable of indicating routes, drivers shall halt the train in its approach, and receive instructions from the head of OCC or the head of inspection yard.

Article 147 In the Case of the Failures of Shunting Signals

When a shunting signal is unusable due to failures, shunting sign givers shall take the following measures:

(1) Check that relevant switches in the section on the route are open to traffic in the proper direction.

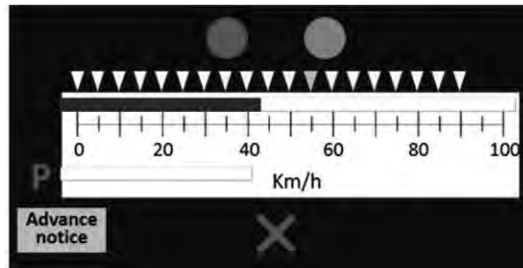
- (2) Check that trains are absent in the section to be operated and the route is trouble-free.
- (2) After completing the above measures (1) and (2), report measures to the driver, and perform shunting operation following shunting signs.

Chapter 3 Cab Signals

Article 148 Indication Systems of Cab Signals

Each head of OU shall predetermine the details of the types and indication systems of signals given by cab signals.

Type of signal		Indication	Cab signal indication	Speed (km/h)
Stop signal	Signal 02	x	-	Stop (emergency brake)
	Signal 01	●	0	Stop (service brake)
P			Allowable speed in overrun protection sections	
Proceed signal		●	25 - 90 (km/h)	25 - 90 (km/h)



Article 149 Automatic Speed Control Using Train Control Devices

Trains shall be operated at an automatically controlled speed using train control devices.

Chapter 4 Signals for Work-site

Article 150 Meaning of Signals for Work-site

Signals for work-site mean the signals temporarily installed for signal indication at a place where trains are incapable of being operated at a normal speed due to track failures or other reasons.

Article 151 Types and Usage of Signals for Work-site

The types of signals for work-site shall be as follows:

Type of signal	Meaning	Usage
Slow speed signal	A signal to indicate a slow speed signal for trains entering into a slow speed zone.	Installed at the starting point of a slow speed zone.
Slow speed notifying signal	A signal installed with a slow speed signal to notify that a slow speed signal is installed forward.	It shall be installed in the approach of a slow speed signal. The installation point shall be located at a position enabling trains to reduce a speed to that not higher than the speed indicated by a slow speed signal before entering into the slow speed zone after checking the indication of a slow speed notification signal.
Speed limit termination signal	A signal to notify trains etc. leaving a slow speed zone of the end of the zone.	Installed at the end of a slow speed zone.

Article 152 Indication System of Signals for Work-site

Each head of OU shall predetermine the details of indication systems of signals for work-site by type.

Article 153 Speed Control in the Case of Using Train Control Devices to Indicate Signals for Work-site

In the case of using train control devices to indicate signals for work-site, the following speed control shall be implemented

- (1), Start speed control from a position capable of reducing the speed to that not higher than the specified slow operation speed before entering into a slow speed zone.
- (2) Control speed to that not higher than the specified slow operation speed until the tail-end of the train leaves from the slow operation section.
- (3) Indicate operation speed information required for the above paragraphs (1) and (2) on the cab signal.

Article 154 Specification of Use Periods, Areas, and Speeds of Signals for Work-site

Persons in charge of operation shall specify the use periods, areas, and speeds of signals for work-site. In emergency cases, however, the head of OCC may issue a command to specify the above.

Article 155 Speed Indication by Slow Speed Signals

When slow speed signals are installed, speed limits shall be indicated to slow down the speeds of trains etc.

Chapter 5 Hand Signals

Section A General Provisions

Article 156 Meaning of Hand Signals

Hand signals are the means of indicating signals using flags or signal lamps. Hand signals shall be indicated in the following cases:

- (1) When signals are unusable.
- (2) When indicating signals are needed in areas with no signals.

Article 157 Names and Sighting Distances of Hand Signals

The names of hand signals shall be as follows:

Name of hand signal	Meaning
Stop hand signal	Stop signal
Slow speed hand signal	Slow speed signal
Proceed hand signal	Proceed signal

- 2 the flags and signal lamps used for hand signals shall be visible at a distance not less than 400 m.

Article 158 Indication Systems of Hand Signals

Each head of OU shall predetermine the details of the indication systems etc. of hand signals by type.

Article 159 Indication of Stop Signals Using Hand Signals

Stop hand signals shall be indicated in any of the following cases:

- (1) When train control devices are unusable in station yards due to failures or other reasons, or cab signals are unusable at stations. In such cases, stop hand signals shall be indicated at the boundaries of stations or at the positions of starting signal indicators.
- (2) When train protection is implemented.
- (3) When indicating limit positions for trains to temporarily stop.
- (4) When indicating limit positions for relief trains being operated using the messenger method to temporarily stop.
- (5) When trains being operated backward in a double-track section by backward operation enter into stations. In the case of backward operation, however, train control devices may be used to ensure the same safety level as in the case of normal operation.

Article 160 Indication of Proceed Signals Using Hand Signals

When indicating a proceed signal using a hand signal for train departure in the case of preceding paragraph, the following measures shall be taken:

Person in charge	Measure
Head of OCC, or Station master under the instructions of the head of OCC	Check the following as necessary: (1) Check that relevant switches in sections on the route are open to traffic in the proper direction. (2) Check that trains are absent in operation sections and the route is trouble-free. (3) In the event of the failures of switches, check that necessary locking has been completed. (4) Check that notification to the head of OCC and drivers has been completed.
Driver	When having received a notification of using hand signals and a proceed signal is indicated by a hand signal, trains may proceed beyond the indication point.

Article 161 In the Case of Substituting Devices etc. for Hand Signals

When indicating hand signals, the head of OU of a line where indication using devices is available instead of using sign givers shall predetermine the details of the methods of indication using relevant devices.

Article 162 Indication of Slow Speed Signals Using Hand Signals

1 Slow speed signals using hand signals are indicated to temporarily slow down the speed of trains etc.

2 In the case of preceding paragraph, drivers shall be notified of slow speed zones and speeds in the slow speed zone.

Chapter 6 Special Signals

Article 163 Meaning of Special Signals

Special signals mean the signals indicated by flames, sounds, or lights in the following cases:

- (1) When the need for stopping particularly trains etc. at unexpected points arises.
- (2) When signal indications are unrecognizable due to weather conditions or other reasons.

Article 164 Types and Indication Systems of Special Signals

- 1 Each head of OU shall predetermine the details on the types and indication system etc. of special signals.
- 2 In principle, the following systems shall be used for indicating special signals. The systems shall ensure the indication of special signals under all circumstances.

Type	Indication system
Fusee signal	A system to stop trains etc. using warning flares.
Alarm signal	A system to stop trains etc. using communication devices such as a radio.
Flashing light signal	A system to stop trains etc. using red lights installed on the ground.

- 3 Each head of OU shall educate staff to be able to handle without fail special signals used in the lines under his or her control.

Article 165 Measures to Be Taken on the Trains etc. Stopped Following Special Signals Indicating Stop Signals

In the case where trains stopped following special signals indicating stop signals, the following measures shall be taken:

Conditions at the time of stoppage	Measure

When trains stop during operation following special signals indicating stop signals.	Drivers shall report to the head of OCC and receive his or her commands.
In the case of fusee signals: when the burning of warning flares ends, or when drivers find burn-out warning flares during operation.	
When trains stop in a station yard following a special signal indicating a stop signal.	Drivers shall report to the head of OCC and receive instructions from the station master.
When trains stop in a depot following a special signal indicating a stop signal.	Drivers shall report to the head of inspection yard and receive instructions from the station master.

Article 166 Specifications of Warning Flares

In principle, warning flares used for fusee signals shall satisfy the following specifications:

- a. Regardless of in the daytime, in the nighttime, or in a tunnel, warning flares shall be recognizable as fusee signals.
 - b. In above-ground sections, they shall be usable in the rain as well as in the wind.
 - c. They shall keep burning for a length of time.
 - d. Their “manufacturing date” and “expiration date” shall be specified on the products.
2. In case smoky candle is not used, similar or equivalent signal shall be used.

Article 167 Storage of Warning Flares

1 Warning flares used for fusee signals shall be stored as follows:

- (1) They shall not be stored in a place such as flammable or humid environment that deteriorates the quality and functions of warning flares.
- (2) They shall be stored in a place that is easy to take them out.
- (3) In the case of equipping them in the cab, in particular, specify the locations of storage to enable immediate usage in an emergency.

2 Each head of OU shall predetermine the following items on the storage of warning flares:

- (1) Locations of storage and locations to be equipped with warning flares.

(2) Minimum numbers to be stored in each place provided in the preceding paragraph.

Chapter 7 Signs

Section A Departure Signs

Article 168 Meaning of Departure Signs

Departure signs mean the signs that station masters or conductors give to drivers when trains depart the station.

Article 169 Departure Sign Systems

Each head of OU shall predetermine the details of departure sign systems etc.

Examples:

1 The following departure sign systems shall be used except one-man operation trains:

Sign type	Sign system
Buzzer	Moderate buzzer sound – Voice
Signal lamp	Green flags or green lights are indicated.
Notice over the intercom	Voice “Departure ready.”

2 Notice over the intercom shall be used when buzzer systems are unusable.

Article 170 Cases for Giving Departure Signs

1 Departure signs shall be given to drivers in the following cases:

Sign giver	Meaning of sign
Conductor (limited to the train he or she serves as a crew member)	At a departure time of a train and when no problem is found with the departure, or in the case where the station master needs to indicate a train departure sign and the conductor receives a train departure sign from the station master.
Station master	In the case where the station master takes measures to “ensure safety between trains” and the “safety of train routes”, and when the station master has taken all predetermined measures and no problem is found with the departure of the train.

2 Regardless of the provisions in the preceding article, departure signs shall be given to drivers when particularly essential.

Article 171 Procedures to Cancel Departure Signs

When cancelling departure signs, the station masters shall immediately take measures to stop the train and report the reason to the driver.

Article 172 Restart of Operation after a Halt

- 1 When a train restarts after an operation halt due to accidents etc., the driver shall use an intercom etc. to receive a verbal departure sign.
- 2 When there is a need to notify crew members other than the driver that the reason for stopping the train has vanished, the driver shall use an intercom etc. to verbally notify them of the status.

Section B Train Departure Signs

Article 173 Meaning of Train Departure Signs

Departure signs mean the signs given in the following cases:

Sign giver	Meaning of sign
Station master	When instructing a conductor on a time to give a departure sign. (Limited to the train he or she serves as a crew member)
	In the case where the station master takes measures to “ensure safety between trains” and the “safety of train routes”, and when the station master has taken all predetermined measures and no problem is found with the departure of the train.
In the case where operation to secure safety by setting a block section provided in Articles 82 - 85 (dispatching system), sign givers shall be the commander in charge of procedures for changing operation methods.	When the commander in charge of procedures for changing operation methods has taken all predetermined measures and instructs the crew to depart the train.

Article 174 Train Departure Sign Systems

Each head of OU shall predetermine the details of train departure sign systems etc.

Examples:

The following departure sign systems shall be used:

(1) When the station master gives the sign to the crew as provided in Article 173, he or she raises one arm high, and move it from side to side or hold up a green light high.



(2) When the commander in charge of procedures for changing operation methods as provided in Article 173 uses a train radio to give the sign, verbally convey “Departure ready.”

Article 175 Cancellation of Train Departure Signs

Each head of OU shall predetermine the details of the methods of cancelling train departure signs.

Examples:

The cancelling methods of departure signs are as follows:

(1) Raising both arms high and moving them from side to side, or holding up a red light high and moving it from side to side.



(2) When using a train radio to give the sign to the crew, verbally convey “Wait departure”

Section C Notice over the Intercom

Article 176 Meaning of Notice over the Intercom

Notice over the intercom means the notification between crew members carried out using the train intercom in place of signs.

Article 177 Terms Used for Notice over the Intercom

Each head of OU shall predetermine the terms used for notice over the intercom.

Example:

The following table shows the terms and their meanings used for notice over the intercom.

Type of Term	Meaning
Departure sign used when indicator lights are out of order	“Departure ready.”
Cancellation of a departure sign	“Wait departure.”
To stop a train	“Stop”
To bring a train to a sudden stop	“Stop short”
Correction of the stop position	Conductor “Correct stop position”
	Driver “Correct stop position.”
Restart after an operation halt	Driver “Departure ready?”
	Conductor “Departure ready.”
No obstruction to pushing operation	“Pushing operation ready”

Section D Whistle Signs

Article 178 Meaning of Whistle Signs

Whistle signs mean the signs using whistles.

Article 179 Whistle Sign Systems

Each head of OU shall predetermine the details of whistle sign systems.

Example: The following table shows the types and systems of whistle signs.

No	Type of Sign	System of sign
1	When warning dangers or emergency accidents occurred.	— — — — —
2	When calling someone’s attention.	—

3	When notification of an approaching train is needed.	————
4	When calling technicians or electricians to the train.	———— ———— ————
5	When train protection is needed.	— ———— —
6	When terminating train protection.	———— —
7	When trains etc. controlled from more than one places shift to powering.	———— ————
8	When trains etc. controlled from more than one places shift to coasting on the way.	———— — —
9	When urging to secure brakes.	— — —
10	When starting backward operation.	— — —

Sing system

- Long slow whistle
- Moderate whistle
- Short sharp whistle

Section E Car Buzzer Signs

Article 180 Meaning of Car Buzzer Signs

- 1 Car buzzer signs mean the signs exchanged between crew members using car buzzers.
- 2 Car buzzer signs are used in the following cases:
 - (1) When a conductor serving as a crew member sends a departure sign to the driver.
 - (2) In the case where crew members communicate with each other when intercoms are unusable.

Article 181 Car Buzzer Sign Systems

Each head of OU shall predetermine the systems of car buzzer signs.

Example;

Car buzzer sign systems shall be as shown in the following table:

Classification	Car buzzer sign	Sign system
From a driver to a conductor or a driver in the rear.	Is there any hindrance to departure?	—
	Correct the stop position.	. — .
	Buzzer testing	. . — —
	Operate the emergency brake switch.
	Cancellation of the sign.	— — —
	Depart.	—

From a conductor or a driver in the rear to a driver.	Correct the stop position.	— .
	Buzzer testing.	. . — —
	Stop short.
	Cancellation of the sign.	— — —

In the table — Moderate buzzer sound ▪ Short sound buzzer

Section F Pushing Operation Signs

Article 182 Meaning of Pushing Operation Signs

Pushing operation signs mean the signs exchanged between train crew members when performing pushing operation.

Article 183 Pushing Operation Sign Systems

- 1 Each head of OU shall predetermine the systems of pushing operation signs.
- 2 Systems enabling crew members to communicate with each other without fail shall be used for pushing operation sign systems.

Example:

Pushing operation signs are indicated through notice over the intercom. When the intercom is unusable, however, the train buzzers, the train announcement system, and signal lamps are used.

Type of sign	Meaning of sign	Sign system
Buzzer	Is pushing operation ready?	. . —
	Pushing operation is ready.
Sign lamp	No hindrance to pushing operation.	Green lamp
	Stop.	Red lamp

In the table — Moderate buzzer sound ▪ Short sound buzzer

Section G Shunting Signs

Article 184 Meaning of Shunting Signs

Shunting signs mean the signs that sign givers give to drivers when performing shunting operation.

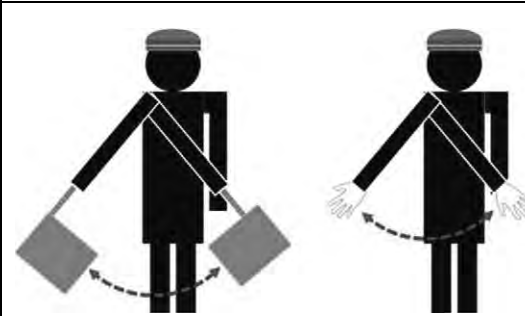

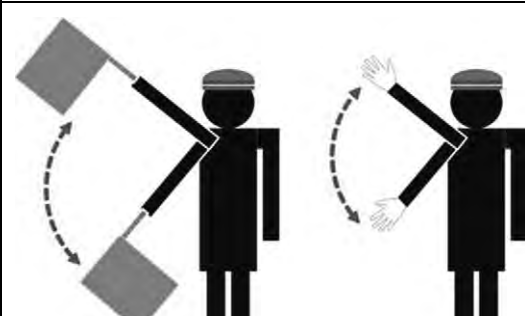

Article 185 Shunting Sign Systems

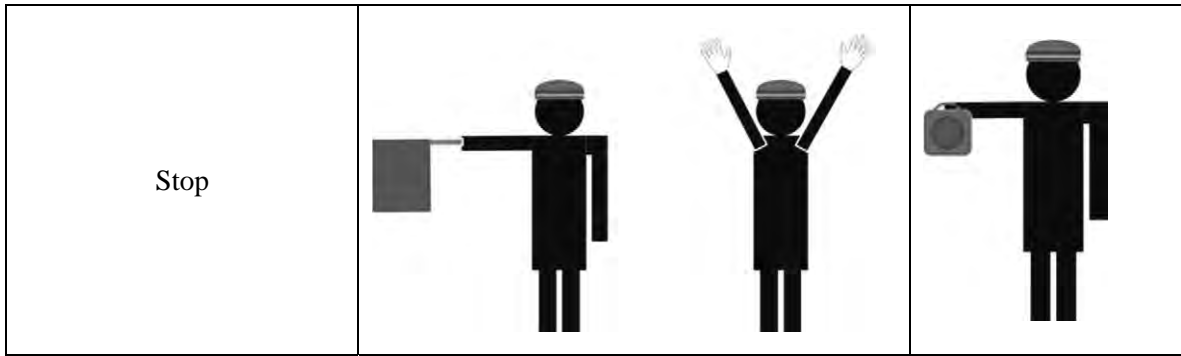
- 1 Each head of OU shall predetermine the systems of shunting signs.
- 2 In principle, sign givers shall continuously indicate shunting signs. When drivers cannot identify signs during operation following shunting signs, they shall immediately take measure to stop operation.

Example:

The types and systems of shunting signals shall be as shown in the following table:

Type of sign	Sign system	
	Daytime	Nighttime
Proceed to the sign giver	Move a green flag from side to side. If it is unavailable, one arm may be moved from side to side in place of it.	Move a green lamp from side to side.
Leave from the sign givers	Move a green flag up and down. If it is unavailable, one arm may be moved up and down in place of it.	Move a green lamp up and down.
Stop	Indicate a red flag. If it is unavailable, both arms may be raised high in place of it.	Indicate a red lamp.

Type of sign	Sign system	
	Daytime	Nighttime
Proceed to the sign giver		
Leave from the sign giver		



Section H Movement Prohibition Signs

Article 186 Meaning of Movement Prohibition Signs

Movement prohibition signs are the signs indicated in the following cases:

- (1) When movement prohibition is needed for coupling or decoupling cars.
- (2) When movement prohibition is needed for car inspection.

Article 187 Indication of Movement Prohibition Signs

In the case provided in the preceding paragraph, staff members in charge shall perform duties as follows:

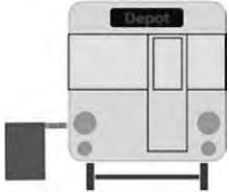
- (1) He or she shall indicate a sign of “prohibit movement” before the start of the work concerned.
- (2) He or she shall indicate a sign of “remove movement prohibition” at the completion of the work.

Article 188 Movement Prohibition Sign Systems

Each head of OU shall predetermine the types and systems of movement prohibition signs.

Example:

The types and systems of movement prohibition signs shall be as shown in the following table:

Type of sign	Sign system	Picture
Prohibit movement	Indicate a red flag.	
Remove movement prohibition.	Remove the red flag.	Remove the flag.

Section I Stop Position Indication Signs

Article 189 Meaning of Stop Position Indication Signs

Stop position indication signs mean the signs that station masters or the heads of inspection yards give when they need to indicate the stop positions of trains etc. to drivers.

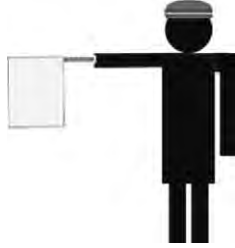

2 Signs shall be indicated at stop positions.

Article 190 Systems of Stop Position Indication Signs

Each head of OU shall predetermine the systems of stop position indication signs.

Example:

The systems of stop position indication signs are as follows:

Sign system	
Daytime	Nighttime
	
Indicate a white flag.	Indicate a white lamp.

Chapter 8 Indicators

Section A Train Indicators



Article 191 Train Indicators

Trains shall be equipped with train indicators.

Article 192 Indication Systems of Train Indicators

The types and indication systems of train indicators are as follows:

Front indicator	Rear Indicator
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<p>Indicate one or more white lam on the front surface of the first car.</p>	<p>Indicate a red lamp respectively on each side of the rear face of the tail-end (two in total).</p>
	

Article 193 Maintenance of Train Indicators

The maintenance of train indicators shall be performed by train crew.

Article 194 Measures Taken When Train Indicators Are Defective

In the case where station masters have noticed or have been notified that train indicators are defective, they shall take the following measures:

- (1) They shall stop the train and have the crew maintain the indicators.
- (2) When they have noticed the defectiveness after the train’s departure or passing, they shall immediately report it to the head of OCC.

Article 195 Measures Taken by the Head of OCC When He or She Receives the Report of the Defectiveness of Train Indicators

The head of OCC who has received the report of the defectiveness of train indicators shall immediately notify the crew of the train concerned of the defectiveness. In the case where the rear indicators are defective, also notify the driver of the following train of it.

Article 196 Check of Rear Indicators When Trains Stop in Operation

When a train stops in operation, the conductor shall check that the rear indicators are well maintained.

Section B Shunting Motor Car Indicators

Article 197 Shunting Motor Car Indicators

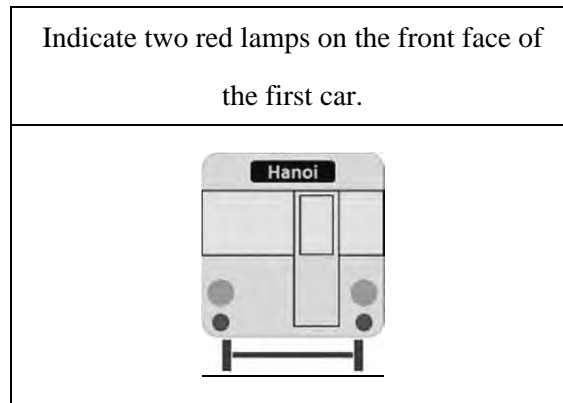
Shunting cars shall have shunting motor car indicators equipped.

Article 198 Indication Systems of Shunting Motor Car Indicators

Each head of OU shall predetermine the indication systems of shunting motor car indicators.

Example:

The indication system of shunting motor car indicators shall be as follows:



Section C Track Circuit Indicators

Article 199 Installation of Track Circuit Indicators

Lines equipped with track circuits shall have track circuit indicators installed and indicate the boundaries of the circuits to trains approaching them.

Article 200 Indication Systems of Track Circuit Indicators

Each head of OU of lines equipped with track circuits shall predetermine the indication systems of track circuit indicators.

Section D Entering Signal Indicators

Article 201 Installation of Entering Signal Indicators

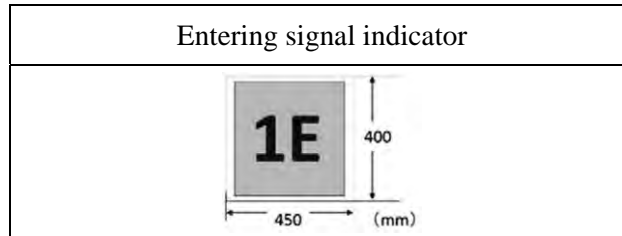
- 1 In lines equipped with track circuits, entering signal indicators shall be installed to indicate the station boundary to a train approaching the station.
- 2 In lines unequipped with track circuits, indicators etc. showing the station boundary shall be installed in place of entering signal indicators for a train approaching the station.

Article 202 Indication Systems of Entering Signal Indicators

Each head of OU of lines equipped with track circuits shall predetermine the indication systems of entering signal indicators.

Example:

The system of entering signal indicators shall be as follows:



Use a reflector. (Unit in mm)

Section E Starting Signal Indicators

Article 203 Installation of Starting Signal Indicators

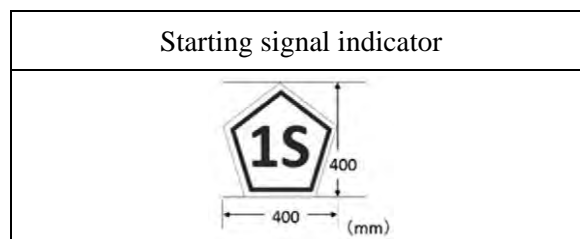
- 1 In lines equipped with track circuits, starting signal indicators shall be installed to indicate the station boundary to a train proceeding from the station.
- 2 In lines unequipped with track circuits, indicators etc. showing the position of hand signals shall be installed in place of entering signal indicators for a train proceeding from the station.

Article 204 Indication Systems of Starting Signal Indicators

Each head of OU of lines equipped with track circuits shall predetermine the indication systems of starting signal indicators.

Example:

The systems of starting signal indicators shall be as follows:



Use a reflector (Unit in mm)

Section F Train Stop Indicators

Article 205 Installation of Train Stop Indicators

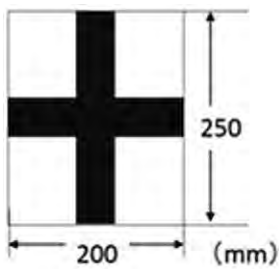
When it is needed to indicate a train stop limit, train stop indicators shall be installed.

Article 206 Indication Systems of Train Stop Indicators

Each head of OU shall predetermine the indication systems of train stop indicators.

Example:

The indication systems of train stop indicators shall be as follows:



A white square board with a black cross figure, or a white reflector with a black cross figure

Article 207 Usage of Train Stop Indicators

Trains approaching a track with an installed train stop indicator shall not stop beyond the indicator.

Section G Car Stop Indicators

Article 208 Installation of Car Stop Indicators

Car stop indicators shall be installed at the end points of yard operation sections where car stop limits need to be indicated for tracks without shunting signals.

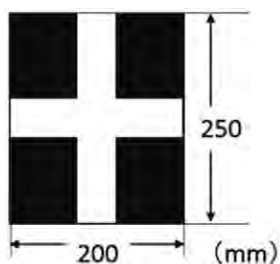
Article 209 Indication Systems of Car Stop Indicators

Each head of OU shall predetermine the indication systems of car stop indicators.

Example:

Indication systems of car stop indicators shall be as follows:

A black square board with a white cross figure, or a black reflector with a white cross figure



Article 210 Restrictions Imposed by Car Stop Indicators

Cars operated in yards shall not stop beyond car stop indicators.

Section H Car Stop Markers

Article 211 Installation of Car Stop Markers

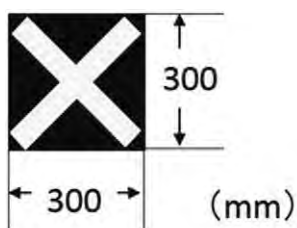
Car stop markers shall be indicated at the ends of tracks where the end points need to be indicated.

Article 212 Indication Systems of Car Stop Markers

Each head of OU shall predetermine the indication systems of car stop markers.

Example:

The indication system of car stop markers shall be as follows:



A white square board with a black X-shaped figure or a white reflector with a black X-shaped figure

Section I Starting Reaction Indicators

Article 213 installation of Starting Reaction Indicators



Starting reaction indicators shall be installed to indicate route opening conditions to station masters or conductors.

Article 214 Indication Systems of Starting Reaction Indicators

Each head of OU of lines equipped with starting reaction indicators shall predetermine the indication systems of the starting reaction indicators.

Example:

The indication systems of starting reaction indicators shall be as follows:

Indication system	
When the train route is open to traffic	When the train route is not open to traffic
	

Article 215 Confirmation and Usage of Starting Reaction Indicators

Stations equipped with starting reaction indicators shall take the following procedures:

Person in charge	Procedures
Conductor	Before giving a departure sign to the driver, the conductor shall check the indication of the starting reaction indicator.
Station master	Before giving a train departure sign to the crew, the station master shall check the indication of the starting reaction indicator.

Section J Contact Wire Terminal Indicators

Article 216 Installation of Contact Wire Terminal Indicators

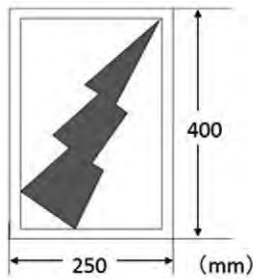
In the case where the contact wire terminal is located before the end of a track and when indicating the contact wire terminal is required, contact wire terminal indicators shall be installed.

Article 217 Indication Systems of Contact Wire Terminal Indicators

Each head of OU shall predetermine the indication systems of contact wire terminal indicators .

Example:

The indication systems of contact wire terminal indicators shall be as follows:



A white rectangular board with a red lightning-shaped figure or a white rectangular reflector with a red lightning-shaped figure

Section K Point Indicators

Article 218 Installation of Point Indicators

Switches shall be equipped with point indicators.

Article 219 Indication Systems of Point Indicators

Each head of OU shall predetermine the indication systems of point indicators.

Example:

(1) When switches are at their normal positions:

- Daytime: A blue circular plate with a single white horizontal line respectively on the forward and backward facing sides.

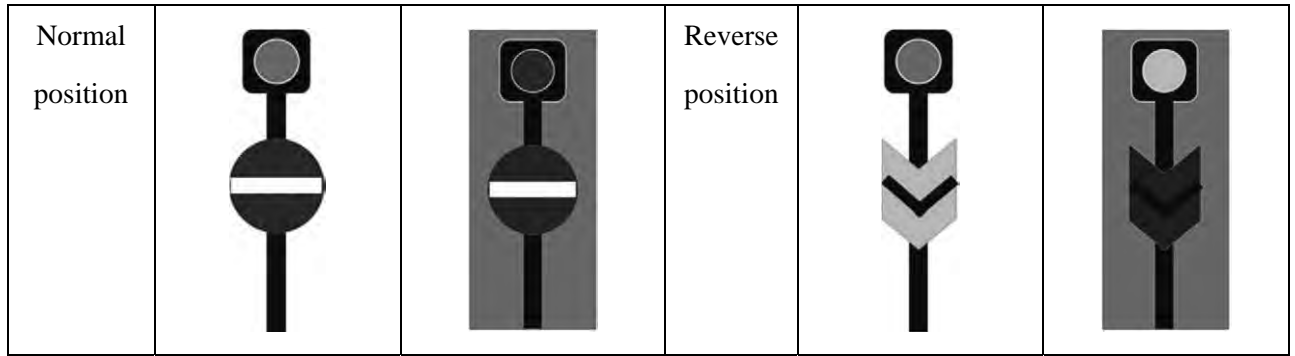
- Nighttime: A purple lamp respectively on the forward and backward facing sides.

(2) When switches are at their reverse positions:

- Daytime: A yellow herringbone-shaped plate with a single black herringbone line in the center on the forward and backward facing sides.

- Nighttime: A yellow lamp respectively on the forward and backward facing sides.

	Indication system			Indication system	
	Daytime	Nighttime		Daytime	Nighttime



Section L Miscellaneous Indicators

Article 220 Installation of Station Area Indicators

Station area indicators shall be installed on the boundaries of stations where showing the boundary between the inside and outside of a station is required.

Article 221 Indication Systems of Station Area Indicators

Each head of OU shall predetermine the indication systems of station area indicators.

Article 222 Installation of Fouling Point Indicators

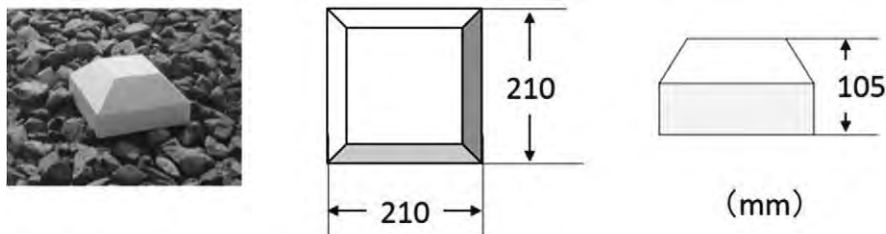
Fouling point indicators shall be installed at a limit point in a junction or intersection area beyond which trains on each track interfere with each other.

Article 223 Indication Systems of Fouling Point Indicators

Each head of OU shall predetermine the indication systems of fouling point indicators.

Example:

The indication systems, colors, and shapes of fouling point indicators shall be as follows:



Article 224 Installation of Speed Limit Indicators

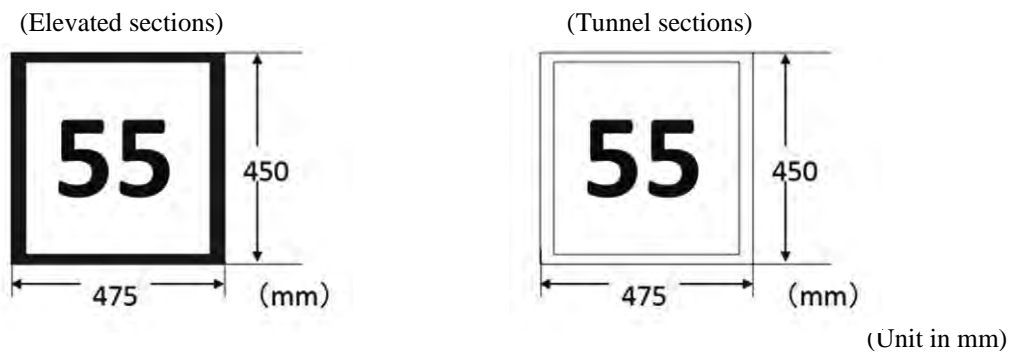
Speed limit indicators shall be installed at the start points of speed limit sections as necessary.

Article 225 Indication Systems of Speed Limit Indicators

Each head of OU shall predetermine the indication systems of speed limit indicators.

Example:

Speed Limit indicators shall be used for indicating track speed limits. Speed limits are specified in 5 km/h units. Their indication systems, colors, and shapes shall be as follows:



Note: 1 Figures show speed limits.

2 Use a reflector.

Article 226 Installation of Temporary Stop Indicators

Temporary stop indicators shall be installed at locations where cars need to temporarily stop.

Article 227 Indication Systems of Temporary Stop Indicators

Each head of OU shall predetermine the indication systems of temporary stop indicators.

Article 228 Installation of Powering Indicators and Coasting Indicators

1 Powering indicators and coasting indicators shall be installed as necessary as a drivers' guide to operation.

2 Powering indicators and coasting indicators shall be installed in the following locations:






Indicator	Installation location
Powering indicator	Start points of powering sections between stations
Coasting indicator	Start points of sections where coasting is considered to be appropriate.

3 In the case of manual operation and when operation is performed in accordance with train performance curves, operation shall be properly performed using the installation positions of each indicator as a guide.

Article 229 Indication Systems of Powering Indicators and Coasting Indicators

Each head of OU shall predetermine the indication systems of powering indicators and coasting indicators.

Example:

	Powering indicator and coasting indicator				
	Second phase control section	Third phase control section	Forth phase control section	Constant speed control	Coasting indicator
Indication system					

Article 230 Installation of Braking Indicators and Brake-releasing Indicators

1 As a guide to drivers' operation, braking indicators and brake-releasing indicators shall be installed as necessary.

2 The installation locations of braking indicators and brake-releasing indicators are as follows:

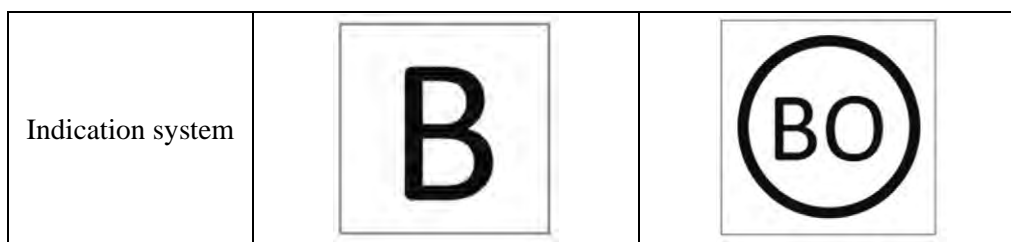
Indicator	Installation location
Braking indicator	Point to start applying train brakes
Brake-releasing indicator	Point to start releasing train brakes

Article 231 Indication Systems of Braking Indicators and Brake-releasing Indicators

Each head of OU shall predetermine the indication systems of braking indicators and brake-releasing indicators.

Example :

	Braking indicator and break-releasing indicator	
	Braking indicator	Break-releasing indicator



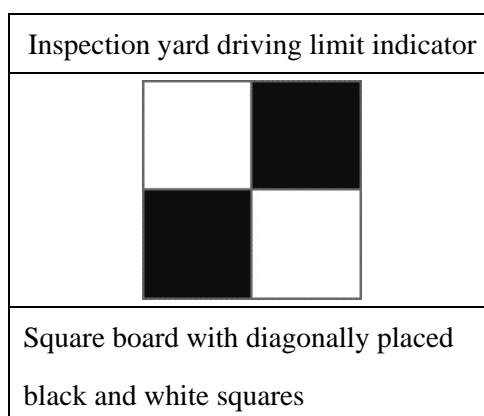
Article 232 Installation of Inspection Yard Driving Limit Indicators

When inspection yard staff (signal staff) needs to indicate driving limits in inspection yards and station yards, inspection yard driving limit indicators shall be installed.

Article 233 Indication Systems of Inspection Yard Limit Indicators

Each head of OU shall predetermine the indication systems of inspection yard driving limit indicators.

Example:



Article 234 Installation of Stop Position Indicators

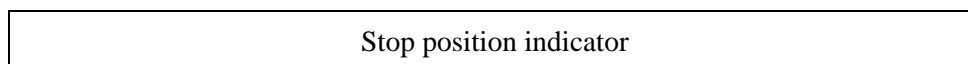
Stop position indicators shall be installed at locations where the stop positions of the foremost parts of trains etc.

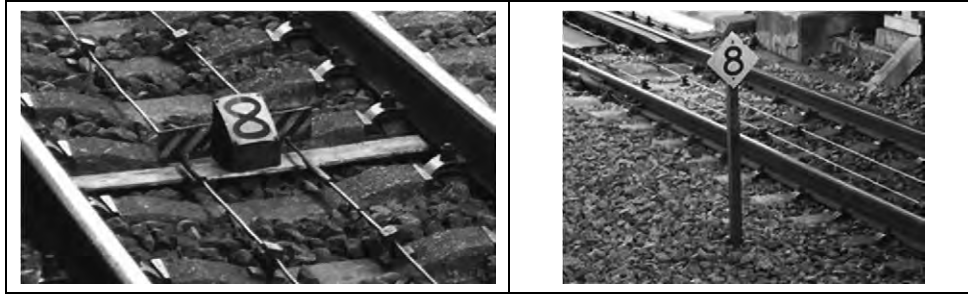
Article 235 Indication Systems of Stop Position Indicators

Each head of OU shall predetermine the indication systems of stop position indicators.

Example:

A square board indicating a number equal to the number of train cars shall be used.





Article 236 Installation of Speed Indicators

In the case where specifying a track speed for yard operation cars is required, speed indicators are installed at the same locations as shunting signals to specify the speed.

Article 237 Indication Systems of Speed Indicators

Each head of OU shall predetermine the indication systems of speed indicators.

Article 238 Installation of Train Control Device Start Point Switching Indicators and Train Control Device End Point Switching Indicators

1 When the switching operation of train control devices are required, train control device start point switching indicators and train control device end point switching indicators shall be installed to clearly indicate the operation points.

2 The installation locations of train control device start point switching indicators and train control device end point switching indicators shall be as follows:

Indicator	Installation location
Train control device start point switching indicator	Start points of sections where train control devices are installed.
Train control device end point switching indicator	End points of sections where train control devices are installed.

Article 239 Indication Systems of Train Control Device Start Point Switching Indicators and Train Control Device End Point Switching Indicators

Each head of OU shall predetermine the indication systems of train control device start point switching indicators and train control device end point switching indicators.

Article 240 Installation of Slow Speed Zone End Point Indicators

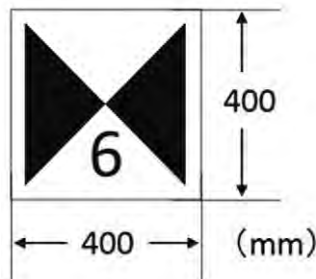
A slow speed zone end point indicator shall be installed in the track at a distance not less than the length of trains passing the zone to notify the driver that the tail-end car has passed the zone.

Article 241 Indication Systems of Slow Speed Zone End Point Indicators

Each head of OU shall predetermine the indication systems of slow speed zone end point indicators.

Example:

The indication systems, colors, and shapes of slow speed zone end point indicators shall be as follows:



Article 242 Installation of Contact Wire Section Indicators

Contact wire section indicators shall be installed in locations where indicating the connection points of overhead contact wires is required.

Article 243 Indication Systems of Contact Wire Section Indicators

Each head of OU shall predetermine the indication systems of contact wire section indicators.

Article 244 Installation of Track Circuit Boundary Indicators

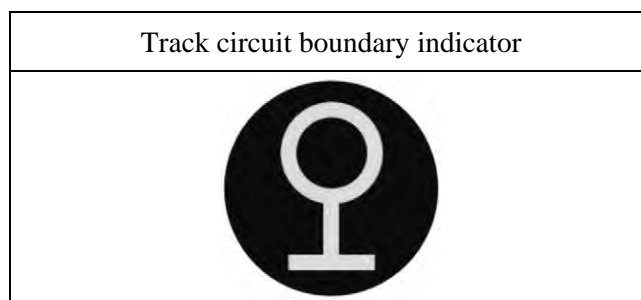
Track circuit boundary indicators shall be installed as necessary to accurately handle the movement of overrun trains at stations where track circuit boundaries exist in their platform sections.

Article 245 Indication Systems of Track Circuit Boundary Indicators

The indication systems of track circuit boundary indicators shall be predetermined.

Each head of OU shall predetermine the indication systems of track circuit boundary indicators.

Example:



Part 7 Handling of Accidents

Chapter 1 General Provisions

Article 246 Emergency Restoration Systems

- 1 Systems in the event of the occurrence of accidents shall be in compliance with this standard practice and rules provided separately.
- 2 The term “accidents” means “driving accidents,” “electrical failures,” “disasters,” etc.

Article 247 Measures Taken in the Event of the Occurrence of Accidents

- 1 When accidents occur, rescue is the highest priority. If exceptional circumstances occur, however, the best and safest measures shall be taken judging the situation correctly.
- 2 When performing restoration work, all persons in charge shall cooperate with each other to restart operation earlier and prevent collateral accidents, and successively report to the head of OCC on estimated restoration time and the progress status of work.
- 3 The head of OCC shall notify relevant parties of the report mentioned in the preceding paragraph and share information with them. When the restoration is finished, he or she shall quickly report the results to the relevant parties and issue commands to prepare restarting operation.

Article 248 Chain of Command in the Event of the Occurrence of Accidents

Each head of OU shall predetermine the chain of command in the event of the occurrence of accidents separately from that in train operation.

Article 249 In the Event of Accidents Occurred in Stations

- 1 In the event of accidents occurred in stations, the following measures shall be taken:

Person in charge	Measure
Station master	The station master shall quickly issue instructions to relevant staff, report the accidents to the head of OCC, and receive his or her instructions as necessary.
Head of OCC	When judging from the status of the accidents that relief to technical departments is needed, the head of OCC shall report the results to relevant persons in charge and instruct them to carry out relief.

- 2 Each head of OU shall predetermine the details of measures to be taken in the event accidents occurred in stations.

Article 250 In the Event of Accidents Occurred between Stations

- 1 In the event of accidents occurred between stations, the following measures shall be taken:

Person in charge	Measure
Crew	The crew members shall take temporary measures, and if they anticipate that restoration takes a long time, they shall report the anticipation to the head of OCC and ask for relief as necessary.
Head of OCC	When receiving the report from the crew, the head of OCC shall issue necessary commands to neighboring station masters. To ask for relief, the head of OCC shall notify the relevant heads of technical districts etc. of the situation and instruct them to take relief measures.

- 2 Each head of OU shall predetermine the details of measures to be taken in the event of accidents occurred between stations.

Article 251 Measures Taken in the Event of Accidents for a Long Time

Each head of OU shall predetermine the measures to be taken for trains in the event of accidents for a long time.

Chapter 2 Accidents of Trains etc.

Article 252 Abnormality Reporting by Crew

- 1 Crew members who have noticed the abnormalities of the operation of trains etc. or facilities shall report them to the head of OCC. In the case of abnormalities occurred in station yards, however, they report them to station masters as necessary.

2 The crew members who have made the above report shall report the accurate status to their immediate managers after their works on the train etc.

Article 253 Means of Reporting Accidents

- 1 Each head of OU shall predetermine the means of reporting accidents.
- 2 The two or more means of reporting accidents shall be defined considering their effectiveness and certainty, and their order of priority shall be clarified.

Article 254 In the Event of the Occurrence of Fatal Accidents

- 1 In the event of the occurrence of fatal accidents during train operation or when finding casualties on tracks, crew members shall immediately stop the train.
- 2 In such a case, the crew members shall report the status to the head of OCC or station masters, and ask for the relief of staff through whistle signs etc.
- 3 In all cases, measures shall be taken giving the highest priority to life saving.
- 4 Each head of OU shall predetermine the measures to be taken in the event of the occurrence of fatal accidents.

Article 255 Procedures Taken for Operating Relief Trains

1 When operating relief trains to move trains disabled during operation, the following procedures shall be taken:

Person in charge	Procedure
Crew	a Facing the direction of approaching relief train, implement train protection at a distance not less than 50 m away from the disabled train. b Disabled trains etc. shall not be moved from the location before the arrival of a relief train.
Head of OCC	a In principle, use the following train as a relief train to guide and merge the disabled train. b In the case where there is no following train and when moving a separated train, use the messenger method to operate the relief train.

2 Each head of OU shall predetermine the details of the procedures for operating relief trains.

Article 256 Procedures Taken When Trains etc. Are Separated

1 Each head of OU shall predetermine the procedures to be taken when trains etc. are separated.

2 Procedures for the following conditions shall be specified:

- (1) When cars with operative continuous brakes are separated.
- (2) When cars without operative continuous brakes are separated.

Article 257 Measures Taken for Runaway Cars

1 Each head of OU shall predetermine the measures to be taken when cars run away.

2 Procedures for the following conditions shall be specified:

- (1) Measure to stop runaway cars shall be specified.
- (2) Measures to be taken when stopping runaway cars is unworkable.

Article 258 Arrangements for Rolling Prevention

When trains stop due to failures or other reasons, the crew shall arrange rolling prevention as necessary.

Article 259 In the Case Where Drivers Leave their Cabs

Procedures taken when drivers leave their cabs while trains etc. are parked shall be specified.

* Securing brakes, locking control devices after taking measures to prevent rolling as necessary, carrying locking keys, etc.

Article 260 In the Case of Noticing Abnormalities during Operation

When noticing an unusual noise, shaking, or other abnormalities during train operation, the crew shall immediately stop the train, check the reason, report the progress to the head of OCC, and receive his or her instructions.

Article 261 Approval of Construction Trains

1 When it is needed to operate construction trains during business hours, the relevant heads of technical and electrical yards shall report to the head of OCC and obtain his or her approval.

2 Upon receiving the report, the head of OCC shall issue commands to relevant departments.

Article 262 Measures Taken When Trains have overrun Stop Positions

1 Each head of OU shall predetermine the measures to be taken when trains overrun stop positions.

2 Measures shall be specified for the following conditions:

- (1) When the train movement has effects on the train control information of the following trains.
- (2) When the train movement has no effect on the train control information of the following trains.

Article 263 Handling of Passengers in the Case Where Trains Become Disabled between Stations

- 1 Each head of OU shall predetermine the handling of passengers in the case where trains become disabled between stations.
- 2 Details of handling shall be specified for the following situations:

Situation	Handling
When a station master taking request for relief is forced to let passengers get off the train in the track.	The station master shall receive the instructions from the head of OCC.
In emergency cases such as car fire where there is no time to wait relief from station masters or receive instructions from the head of OCC.	In principle, the crew shall take the following measures: <ul style="list-style-type: none"> a. Implement train protection and make arrangements to stop trains approaching the site. b. Make arrangements to shut off the power for the overhead contact line as necessary. c. Let passengers get off the train and guide them to a safe place. d. While taking these measures, the crew shall quickly report the situation to the head of OCC or station masters and call for relief.

Article 264 Procedures to Shut Off the Power to Overhead Contact Lines

- 1 Each head of OU shall predetermine the procedures to shut off the power to overhead contact lines when accidents occur.
- 2 After shutting off the power to overhead contact lines, it shall be quickly reported to the head of OCC.

Article 265 When Starting the Power Supply to Overhead Contact Lines after Accident Restoration

- 1 Each head of OU shall predetermine the procedures to be taken when starting the power supply to overhead contact line after accident restoration.
- 2 The power supply mentioned in the preceding paragraph shall not be started before making arrangements with the head of the on-site task force without fail to avoid collateral accidents caused by an electric shock.

Article 266 Measures Taken by Crew in the Case Where Trains Stand between Stations for a Long Time due to a Flood or a Power Failure

When a train stands between stations for long time due to a flood or a power failure, the crew shall report their train’s position to the head of OCC in detail.

Article 267 Inspection of Trains or Facilities in the Event of the Occurrence of Accidents or Failures

When accidents or failures occur, the trains or facilities shall not be used for train operations before having inspections by and obtaining approval from a person in charge of maintenance.

Article 268 Measures Taken When Train Fire or facility Fire Has Occurred

1 Each head of OU shall predetermine the measures to be taken when train fire or facility fire has occurred.

2 In this case, the following measures shall be taken in principle:

Person in charge	Measure
Crew	<ul style="list-style-type: none"> a When train fire has occurred during operation between stations, the train shall in principle be operated to the next station or a safe place for passenger evacuation. b When fire occurs caused by cars during operation between stations, arrangements to shut off the power to overhead contact lines shall be taken. c In the case where trains stand between stations and there is no danger to passengers in the train, the crew shall prevent passengers from getting off the train by themselves. d When the fire has occurred in nearby trains, stations, or facilities, the train shall stop at the nearest station and receive the instructions from the head of OCC. e When approaching a station where a train on fire stands or when the station is on fire, trains shall in principle pass the station.
Head of OCC	<ul style="list-style-type: none"> a Being notified of fire from a train running between stations, the head of OCC shall in principle instruct the train to move to the next station or a safe place for passenger evacuation. b When confirming train, station, or facility fire, the head of OCC shall instruct the crew that trains near the fire site stop at the nearest station. c In the case where a train approaches a station on fire, the head of OCC shall instruct the train to pass the station.
Station master	<p>When noticing fire in a station yard, the station master shall immediately report the fire to the head of OCC and take proper measures.</p>

- 3 In addition to the provisions specified in the preceding paragraph, measures to be taken by individual persons in charge shall be defined in detail on the guidance and evacuation of passengers, initial fire extinguishing, and the arrangements of power shutoff to overhead contact line, etc according to the situation.
- 4 When situations other than those specified above occur, the safest measures shall be taken considering the situations calmly.

Chapter 3 Train Protection

Article 269 Meaning of Train Protection

Train protection means the methods of indicating stop signals considering the braking distances of trains etc. to stop proceeding trains etc. when hindrances requiring the stoppage of proceeding trains etc. exist.

Article 270 Conditions Requiring Train Protection

- 1 Each head of OU shall predetermine the conditions requiring train protection.
- 2 Train protection shall be implemented without fail in the following cases:
 - (1) In the case where derailed or overturned trains obstruct the routes of trains etc. running on the adjacent tracks.
 - (2) When trains disabled due to failures etc. wait for relief trains.
 - (3) When a construction train is notified of the operation of another construction train.
 - (4) In addition to the above cases, when failures or hindrances requiring the stoppage of trains etc. are noticed on equipment on the ground such as tracks etc.
 - (5) In other cases where each head of OU confirms the necessity of train protection.

Article 271 Types and Methods of Train Protection

- 1 Each head of OU shall predetermine the types and methods of train protection.
- 2 As for the types and methods of train protection, two or more means shall be defined considering their effectiveness and certainty, and order of priority in their usage shall be clearly specified.

Article 272 Carrying of Smoke Candles for Train Protection

- 1 Each head of OU shall predetermine the number of smoke candles for train protection consulting with the staff carrying them.
- 2 Station offices and signal boxes shall have four or more smoke candles for train protection on hand
- 3 Staff carrying smoke candles for train protection shall have an understanding of the handling method of smoke candles and train protection procedures.
- 4 In the case where trains are equipped with smoke candles for train protection, their management method shall also be clearly specified.

Article 273 Measures Taken by Crew for Train Protection

Crew shall implement train protection in the following cases:

- (1) In the case where adjacent tracks are broken due to derailment or overturning.
- (2) When a crew member of a standing train stopped during operation due to an unusual shaking or noise has noticed the failures of tracks or equipment at the place he or she felt abnormalities.

Article 274 Conductors' Train Protection or Attention Calling

1 When a train has stopped during operation, the conductor on board shall take the following measures:

- (1) When the conductor has received a sign or notification from the driver to urge the implementation of train protection.
- (2) When the train has derailed or turned over.
- (3) When a train is approached by the following train too closely within a distance of potential danger. In this case, the conductor shall turn the headlight of the tail-end car on and off to call attention to the driver of the approaching train that the train being approached is standing.

2 In the case of taking measures provided in the preceding cases, the conductor shall report to the head of OCC.

Article 275 Train Protection of Trains Waiting for Relief Trains

When a train standing between stations disabled due to failures etc. is waiting for an approaching relief train, implement train protection using fusee signals at a distance not less than 50 m away from the disabled train, facing the direction of approaching relief train.

Article 276 Measures Taken by Crew When Station Masters Are Implementing Train Protection

In the case where crew asks a station master for train protection at the station, the crew does not need to implement train protection.

Article 277 Measures Taken by Drivers Noticing Train Protection

1 When noticing smoke candles or hand signals for train protection, drivers shall take the following measures:

(1) Immediately stop the train at a distance not less than 50 m in the approach of the indication location of the stop signal. If there is a fear of incapable of stopping before the indication location of the stop signal, the train shall immediately be stopped.

(2) Operation shall not be restarted before receiving notifications or instructions from the protector or the head of OCC.

2 When receiving an emergency stop signal using an alarm signal, the driver shall immediately stop the train. In this case, the driver shall report to the head of OCC after stopping the train, and receive his or her instructions.

3 Each head of OU implementing train protection to which the above provisions in this article are inapplicable shall predetermine the measures to be taken by the drivers when they have noticed train protection.

Article 278 Termination of Train Protection

When the crew of a train standing between stations has made other trains stop by implementing train protection, the protector shall take the following measures:

(1) Notify the train driver being forced to stop of the reason for train protection and make arrangements.

(2) Terminate train protection and return back to the train in charge.

Part 8 Abnormal Weather etc.

Chapter 1 General Provisions

Article 279 Handling of Weather Conditions

1 Staff shall take strict precautions under the following weather conditions:

- (1) When it is expected that weather conditions have an effect on the operation of trains etc.
- (2) In the case of weather conditions affecting the operation of trains etc.
- 2 When train operation becomes dangerous due to abnormal weather conditions, staff shall grasp the situation and take proper measures focusing on passenger safety.
- 3 Each head of OU shall predetermine the measures to be taken in abnormal weather conditions corresponding to the equipment and structures of the line.

Article 280 Security Systems

Security systems under abnormal weather conditions shall comply with the Accident/Disaster Control Rules.

Article 281 Operation Control

- 1 When disasters caused by abnormal weather is predicted, the head of OCC shall issue a command to control operation.
- 2 Each head of OU shall predetermine the standards and procedures of operation control depending on the equipment and structures of the line.

Chapter 2 Strong Winds

Article 282 In the Case of Strong Winds

Each head of OU with a fear of being affected by strong winds shall predetermine the standards and measures under strong winds depending on the equipment and structures of the line.

Article 283 Measures Taken by Station Masters and the Heads of Inspection Yards

- 1 Station masters and the heads of inspection yards shall take the following measures under strong winds:

Example:

Person in charge	Measure
------------------	---------

Station master	<ul style="list-style-type: none"> a When receiving the commands from the head of OCC on the operation control under strong winds, station masters shall temporarily suspend train departure and shunting operation. In this case station masters shall stop passing trains. b When noticing that train operation is dangerous due to strong winds or gusts, station masters shall suspend train departure and quickly report to the head of OCC. c The arrangements of the rolling prevention of cars parked in yards shall be strictly made as necessary.
Head of inspection yard	<ul style="list-style-type: none"> a When receiving the commands from the head of OCC on the operation control under strong winds, the heads of inspection yards shall temporarily suspend train departure and shunting operation. b When noticing that train operation is dangerous due to strong winds or gusts, she heads of inspection yards shall suspend shunting operation and quickly report to the head of OCC. c The arrangements of the rolling prevention of cars parked in yards shall be strictly made as necessary.

- 2 Each head of OU shall predetermine the details of the measures taken by station masters and the heads of inspection yards under strong winds.

Article 284 Measures Taken by Drivers

- 1 Drivers shall take the following measures when meeting with strong winds.

(1) In windy areas, drivers shall avoid abrupt change in speed and be cautious in not applying sudden brakes.

(2) When noticing the danger of train operation, the following measures shall be taken:

- a. Suspend departure at stations.
- b. In the above case, stop passing trains.

(3) When inevitably stop trains in operation, drivers shall avoid curves, bridges, etc., consider topography, buildings, etc., select a safe location little affected by winds, and stop trains.

2. Each head of OU with a fear of being affected by strong wind shall predetermine the details of the measures taken by drivers in the case of strong wind.

Chapter 3 Floods

Article 285 Measures Taken for Trains under Flooded Conditions

1 When noticing that trains are inoperable due to floods in tunnels, the following measures shall be taken:

Person in charge	Measure
Crew	Crew shall quickly report the situation to the head of OCC and receive his or her instructions.
Station master	Receiving commands from the head of OCC, station masters shall have passengers get off the train at stations and move trains to non-flooded locations.

2 Regardless of the provision in the preceding paragraph, when being unable to make arrangements with or receive instructions from the head of OCC, crew or station masters shall take temporary measures such as having passengers get off the train at stations, and immediately report the measures to the head of OCC.

3 When receiving the report of flushes or floods, the head of OCC shall make close contact with relevant departments, grasp the situation in the section, and issue commands on the following operation control:

- (1) When rails are covered with water: Stop operation.
- (2) When the most of rails are flooded: Operation at the slowest speed.
- (3) When part of rails are flooded: Attention operation.

4 Regardless of the provision in the preceding paragraph, third rail districts shall be controlled earlier as necessary.

Article 286 Measure Taken in the Case of Heavy Rain

1 Each head of OU with a fear of being affected by heavy rain shall predetermine the measures taken in the case of heavy rain.

2 In locations where rain gauges are installed, the head of OCC shall pay attention to their measurements, and control operation when the values reach the limit,

Article 287 Operation Control under Heavy Rain

Depending on the measurements of rain gauges, the head of OCC shall issue a command of operation control.

Example:

Rainfall	Operation control
Not less than 30 mm/h or when continuous rainfall reaches 200 mm	Operation speed is controlled to 60 km/h or less
Not less than 30 mm/h and less than 40 mm/h, or when continuous rainfall reaches 300 mm	Operation speed is controlled to 40 km/h or less
Not less than 40 mm/h or when continuous rainfall reaches 300 mm	Operation is suspended depending on conditions.

Chapter 4 Thick Fog

Article 288 Measures Taken in Thick Fog

1 When fog is generated and there is a fear of hindrance to operation, the following measures shall be taken.

Example:

Person in charge	Measure
Head of OCC	<ul style="list-style-type: none"> a When it becomes difficult to check the indication of railway signals from a distance of 200 m away from them, the head of OCC shall issue a command of attention operation. b When the visibility distance of the route becomes less than 50 m, the head of OCC shall issue a command of temporal suspension of train operation.
Crew	<ul style="list-style-type: none"> a When meeting thick fog during train operation and the visibility distance of the route becomes not more than 200 m, drivers shall temporarily suspend the train, and report the situation to the head of OCC. b When it becomes difficult to check the indication of railway signals, drivers shall temporarily suspend train operation, and report the situation to the head of OCC. c When there is little forward visibility, crew shall perform attention operation. Drivers shall also make whistle signs occasionally to make notification of approaching trains. d Conductors shall pay attention to the tail-end train indicators, and especially when standing between stations and the following train is approaching, they shall turn the tail-end headlight on and off to caution the driver of the following train.
Station master	<ul style="list-style-type: none"> a When it becomes difficult to check the indication of railway signals at a distance of 200 m away from them, the station masters shall report the situation to the head of OCC. b Station masters shall designate responsible persons to monitor particularly train operation statuses. c When the visible distance of the route becomes 50 m or less, station masters shall report the situation to the head of OCC, and receive his or her instructions.

- 2 In the case of preceding paragraph, when station masters have no time to receive the instructions of the head of OCC, they may determine to temporarily suspend train operation. In this case, they shall immediately report the suspension to the head of OCC.
- 3 Each head of OU with a fear of being affected by thick fog shall predetermine the measures to be taken in the case of thick fog.

Chapter 5 Earthquakes

Article 289 Measures Taken in the Case of the Occurrence of Earthquakes

- 1 When there is a fear of hindrance to train operation due to the occurrence of earthquakes, the following measures shall be taken:

Example:

Person in charge	Measure
Head of OCC	<ol style="list-style-type: none"> a When a strong earthquake with a level higher than the specified one occurs, the head of OCC shall issue a command for making an emergency stop of all trains. b After making the above arrangements, the head of OCC shall issue a command for implementing operation control, and also command the relevant heads of technical and electrical districts to inspect equipment.
Crew	<ol style="list-style-type: none"> a When sensing strong earthquakes while operating a train and feeling a danger, the crew shall immediately stop the train etc. When the train is standing on a bridge or an embankment and in a potentially dangerous condition, the crew shall check the safety of the route and move the train etc. b When stopping a train following the preceding paragraph, the crew shall report the situation to the head of OCC and receive his or her instructions on the measures to be taken. c When restarting operation after stopping due to earthquakes etc. in accordance with the rules, the driver shall be extremely cautious.
Station master	<ol style="list-style-type: none"> a When sensing strong earthquakes and noticing the danger of train operation, or receiving commands from the head of OCC, station masters shall immediately suspend train departure. Passing trains shall also be stopped. b After taking measures as provided in the preceding paragraph, station masters shall immediately report the measures to the head of OCC and notify crew of the measures.

- 2 Each head of OU shall predetermine the measures to be taken in the event of the occurrence of earthquakes.

Article 290 Measures Taken by the Heads of Technical and Electrical Districts

In the Case of the Occurrence of Earthquakes, the heads of technical and electrical districts shall take the following measures according to the situation:

Example:

Status	Measure
When receiving the report of the occurrence of strong earthquakes and a command for equipment inspection from the head of OCC.	a They shall make a walk-around inspection in their responsible districts to check if there are hindrances to train operation. b Based on the results of the inspection provided in the preceding paragraph, they shall report the situation and whether to implement operation control to the head of OCC.
When staff making the rounds meets strong earthquakes.	a When judging that there are potential damage to equipment and the danger of train operation, they shall immediately take measures for the emergency stop of trains. b When the measures provided in the previous paragraph are taken, notify the stopped train crew of the reasons.

Article 291 Procedures Taken on Operation Control

1 Each head of OU shall predetermine the procedures to be taken on operation control sufficiently considering the strengths of structures and effects of earthquakes on structures at the time of the occurrence of earthquakes.

2 Each head of OU shall take the following procedures for operation control at the time of the occurrence of earthquakes.

Example:

Operation control	Procedure
Implementation of operation control	When a strong earthquake with a level higher than the specified one occurs, an operation control command corresponding to the strength of the earthquake shall be issued.
Removal of operation control	When the inspection carried out by the heads of technical and electrical districts has been completed, and receiving the reports from them and drivers that there is no hindrance to train operation, operation control shall be removed.

Part 9 Other Rules

Article 292 Responsibilities of Each Department

1. General train operation department – Head quarter of the company:

To advise the General Director when the rules need to change. To check and supervise performance of train operation of site operation units in accordance with the approved plans, rules and procedures.

2. Site operation enterprise:

- a. To implement train operation in accordance with the rules, procedures and plans, to ensure operation safety;
- b. During working, if there are any difficulties, site operation enterprises shall report to the manager of the general train operation department (Head quarter) to compile and report to the General Director for solutions.
- c. Managers of train operation departments are responsible for determining operation procedures in detail (train operation rules) as follows.
 - Communication between persons in charge of work related to operation.
 - Methods and procedures for implementing work.
 - Measures to be taken in emergencies.
 - Special cautions to take when following the rules specified in this rulebook. .

3 Operational departments implementing work related to train operation.

- a. Staff implementing work related to operation shall comply with the rules specified in this rulebook, and shall be responsible for ensuring the safety of trains and passengers.
- b. For the purpose of ensuring safe and effective train operation, the departments shall prepare their own work implementation plans based on approved train operation plans.

Article 293 Procedures for the Revision and Abolition of the Rules

The revision and abolition of this Hanoi Metro Train Operation Rules shall be decided by the President following the specified procedures.



Hanoi People's Committee



Japan international Cooperation Agency

Train Operation Control Manual

Project to Support the Strengthening of the Metropolitan Railway Management Board of the City of Hanoi and the Establishment of the City's Railway Operation Company

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City of Hanoi, October 2015

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VI. Development of Train Operation Plans

1. Timelines for Operation Plan Development

2. Train Operation Diagrams

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3.1 Preparation of Train Performance Curves

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4. Methods (Plans) to Restore Train Operation

4.1 Case of a Slight Delay

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VII. Implementation Organizations

VIII. Evaluation of Train Operation Plans

Train Operation Control Manual

I. Legal Bases, References

1. Legal Bases

- Railway Act
- Circular No. 05/2015/TT-BGTVT, “Rules on Organizational Structures for Staff Directly Engaged in Urban Railway Train Operation.”
- Circular No. 21/2015/BGTVT, “Rules on Breaks Given to Workers Engaged in Special Railway Transportation Work.”

2. References

- Basic design of the sections of Line 2A between Cat Linh and Ha Dong, Line 2 between Nam Thang Long and Tran Hung Dao, and Line 3 between Nhon and Hanoi Station.
- Technical design of the sections of Line 2A between Cat Linh and Ha Dong and Line 3 between Nhon and Hanoi Station.
- Education plan for the section of Line 2A between Cat Linh and Ha Dong, Version 16.

II. Train Operation Systems and Classifications

1. Train Operation Systems

1.1 Daily Operation Systems

Daily train operation systems shall be studied in detail to meet the requirements mentioned below and be classified into off-peak hours, daytime hours, and rush hours.

- Passenger service quality
- Staff utilization effect
- Car/equipment usage effect

Detailed plans for specific hours on weekends, national holidays, and important national festivals shall also be developed. In general, passenger flow rates on weekends and national holidays differ from those on weekdays.

Time Period		Classification
From	To	
05:00	06:00	Off-peak hours
06:00	07:00	Daytime hours
07:00	09:00	Rush hours
09:00	16:00	Daytime hours
16:00	18:00	Rush hours
18:00	20:00	Daytime hours
20:00	23:00	Off-peak hours

Table 1 Classifications of time periods used for train operation plans (for reference purposes)

1.2 Limited Operation Systems

1.2.1 Causes of Transport Disorders and Limited Operation System Management

a. Causes of transport disorders

Transport disorders generally occur due to passenger problems or system trouble. The table below shows the general causes of transport disorders.

No.	Category	Cause
1	Track	Rail failures, roadbed subsidence, turnout failures

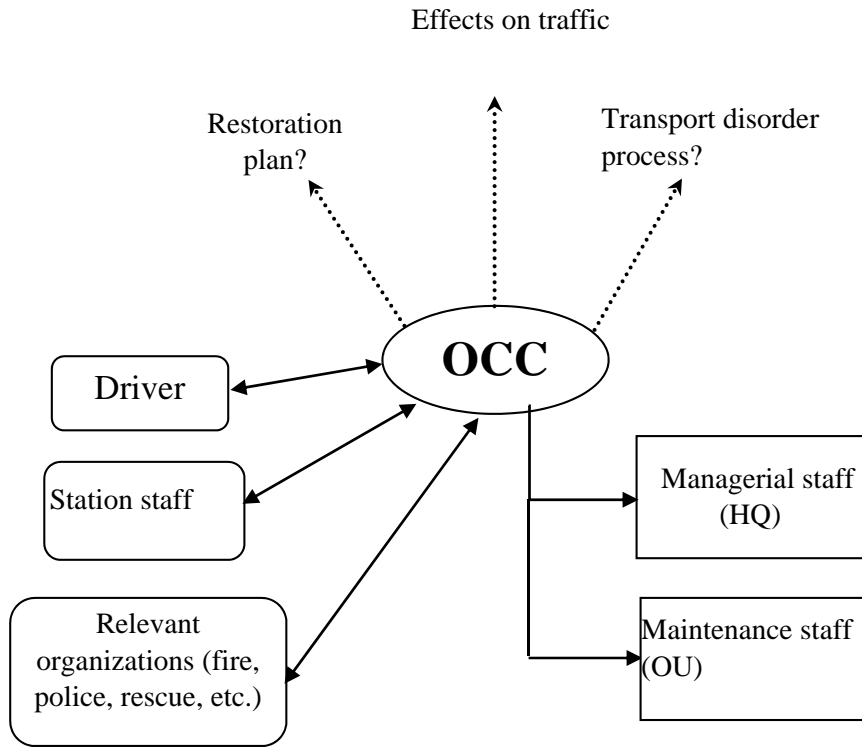
2	Traction electricity and power	Power supply system failures, short circuits, overvoltages
3	Signals and operation systems	Train-side ATP failures, ATP signal failures during operation, signal failures during operation, interlocking device failures
4	Train	Power and motor thrust, trucks and driving mechanisms, braking systems, door systems, car bodies, other equipment, fire
5	Driving and auxiliary systems	SCADA system failures, ATS system failures, Radio system failures, communication/remote control system failures
6	Passenger	Fainting, suicide, falling to the track, behavior posing a danger to safe operation

Table 2 Causes of urban railway transport disorders

b. Emergency responses

OCC plays a very important role in controlling and responding to the occurrence of transport disorders. It directly issues instructions to drivers and station staff, communicates with relevant organizations and units (taking measures against the aftermath of the transport disorders to ensure the safety of trains running on the tracks), and cooperates with them to recover from the disorders as soon as possible.

The figure below shows the relation between OCC and the other departments of the operation company in the event of the occurrence of transport disorders.



- Emergency responses

No.	Case	Action
1	The driver identifies a danger.	1. The driver immediately stops the train using an emergency brake. 2. The driver reports to OCC to receive instructions.
2	A fire occurs in a tunnel.	a. The driver drives the train to the next station. (Do not stop the train except when the fire occurs at a place where an emergency exit is installed.). 2. As well as reporting to OCC, the driver cooperates with station staff to evacuate passengers from the station.
3	An alarm sounds, or a sensor such as a wind gauge, a seismometer, etc. installed along the railway line indicates an emergency.	OCC's train dispatchers must notify the train stop via the train radio.
4	The alarms of hazard prevention systems installed at each station sound or the alarm signals are indicated at OCC.	Train dispatchers instruct drivers to stop their trains via the train radio to prevent train entry.

No.	Case		Action
5	Derailment (Being unable to use the emergency brake, the driver disengages his or her hand from the dead man's device.)		<ol style="list-style-type: none"> 1. A Dead-Man device installed in a cab automatically activates the emergency brake and sends signals to OCC. (Note: Limited to the lines where Dead-Man devices are installed.) 2. After receiving information, OCC's train dispatchers immediately stop all trains running on the line. (To prevent collisions with other trains at the derailment site)
6	A passenger falls to the track.		<ol style="list-style-type: none"> 1. After receiving the information, the driver must use the emergency brake. 2. This transport disorder must immediately be reported to OCC. 3. After receiving the information on the transport disorder, OCC's train dispatchers instruct trains running nearby to stop. 4. OCC's train dispatchers require station staff for support and emergency response (ambulances, fire trucks, police, etc.) 5. After checking factors needed for recovery from the transport disorder and safe operation, the head of OCC issues instructions to resume operation according to the plan.
7	A train becomes impossible to continue operation and may pose a danger to passengers.		<ol style="list-style-type: none"> 1. The driver immediately reports to OCC to receive instructions. 2. Obtaining permission from OCC, the train staff evacuates passengers from the train through the cab doors. 3. For ensuring safety, the train staff guides passengers to the nearest station.
8	Strong wind (Note: Wind speeds are	$25 \text{ m/s} < V_{\text{wind}} < 30 \text{ m/s}$	Temporarily stop train departure (following OCC's instructions).

No.	Case		Action
	defined in detail based on the specifications of each line.		
		$V_{\text{wind}} > 30 \text{ m/s}$	OCC stops train operation and guides each train to a safe location.
8	Earthquake (having adverse effects on train operation depending on the level of seismic intensity)		<ol style="list-style-type: none"> OCC suspends train operation and instructs trains running between stations to run to the nearest station at a speed of 25 km/h or less. OCC's equipment dispatchers instruct Structure/Track Maintenance Department to inspect structures and tracks. After completing inspection work and safety check, OCC restores operation according to the plan.

Table 4 Emergency responses

III. Survey on Passenger Flow Rates

Accurate passenger flow rates at each station during rush hours, daytime hours, and off-peak hours need to be surveyed for correctly reflecting actual passenger demand in transportation service.

Accurate survey results enable the calculation of the number of train runs and detailed operation intervals in each time period.

The following table shows the methods of calculating the numbers of train runs in rush hours for each urban railway line in the City of Hanoi (based on the basic and technical design data of Lines 2A, 2, and 3).

Item	Unit	Year	2016	2019	2018
		Formula	(Line 2A)	(Line 2)	(Line 3)
Transportation volume	Person/hour Người/Giờ· Chiều	a	11.485	16.436	8.600
Number of train cars	Car	b	4	4	4

Item	Unit	Year	2016	2019	2018
		Formula	(Line 2A)	(Line 2)	(Line 3)
Train capacity (100%)	Person/train	c	950	942	916
Congestion rate	%	d	130%	150%	120%
Number of train runs	Train/hour Tàu/Giờ· Hướng	$e = a/(c*d)$	10	12	8
Operation interval (peak)	Minute	$f = 60/e$	6	5	7.5

Table 4 Calculation of the number of train runs based on passenger flow rates

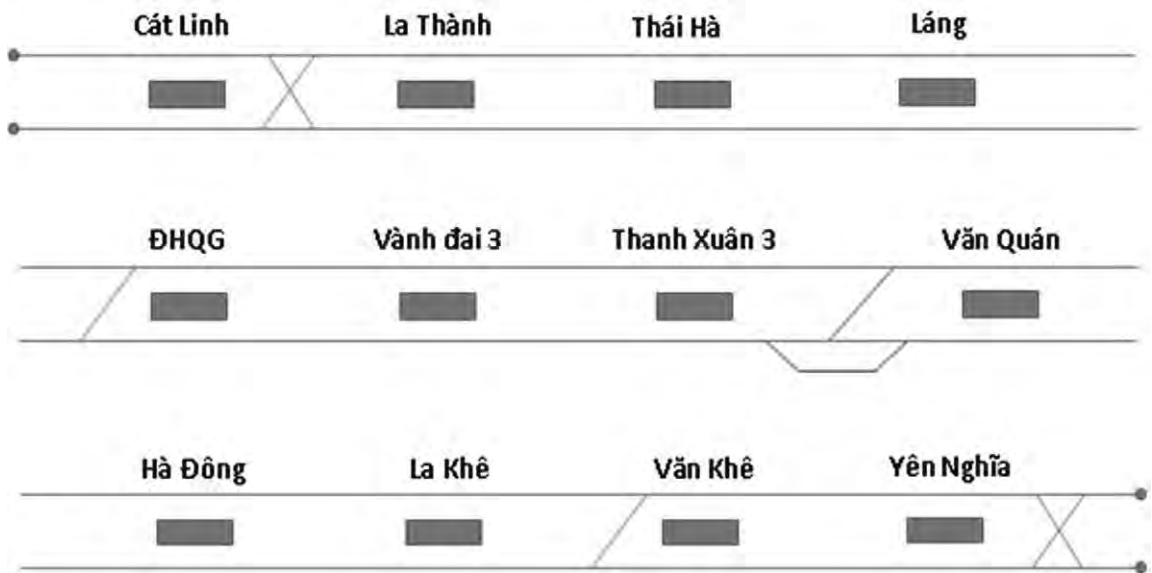
IV. Requirements for Train Operation Facilities

1. Facilities

Safe, effective, and smooth operation planning requires information on station locations and railway grounds.

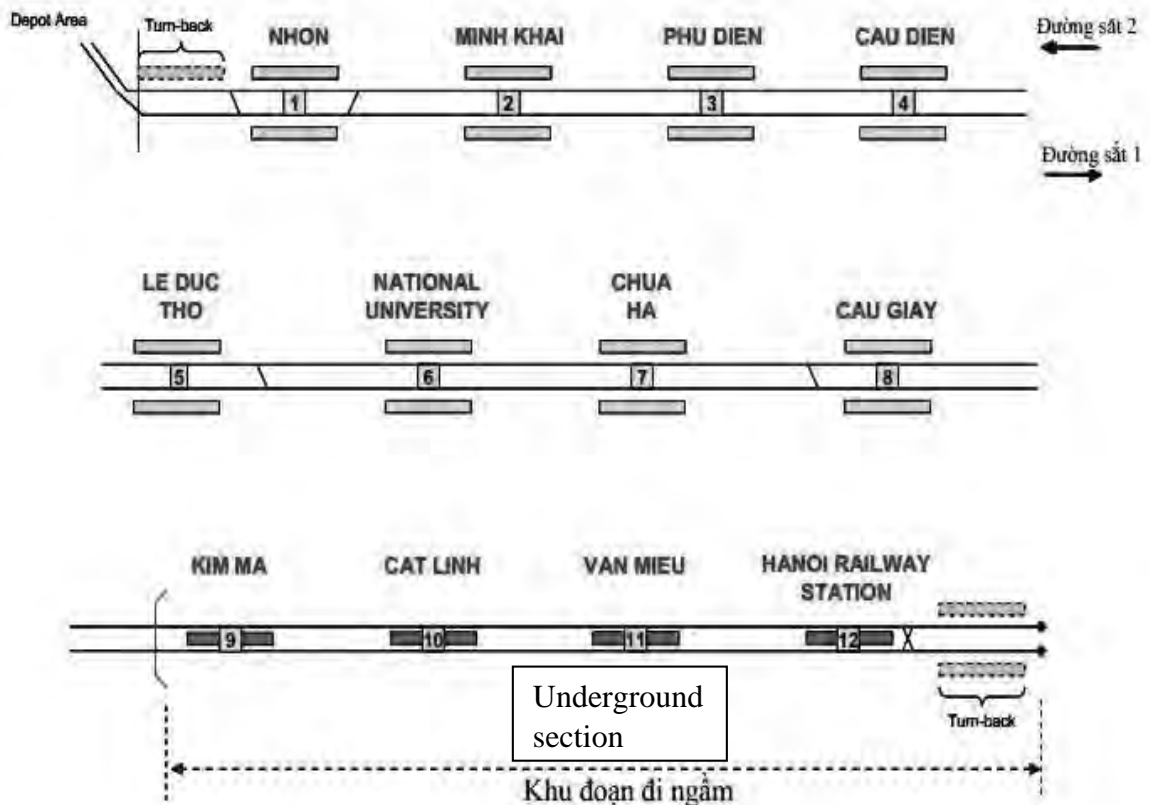
- Start and end point stations: A plan to double back using a crossover should be developed.
- Storage tracks: A plan to keep spare cars for emergencies should be developed.
- Crossovers on railway lines: They are used to double back trains when accidents or transport disorders occur.

a. Line 2A (Cat Linh – Ha Dong Stations)



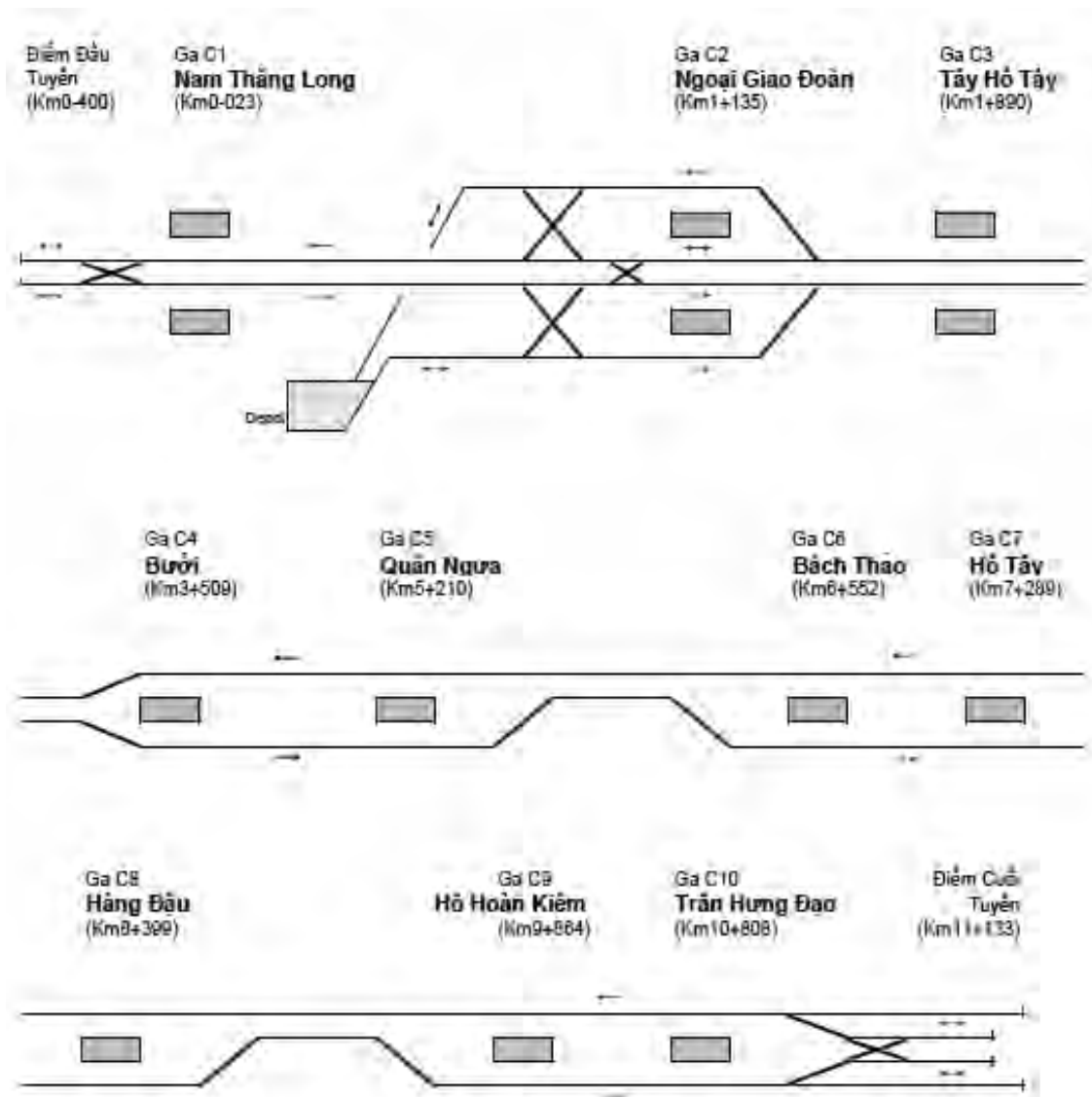
No.	Doubling back plan	Emergency crossover	Storage track (train siding)
1	Short of Cat Linh Station	Short of Vietnam National University, Hanoi (Thuong Dinh)	Siding ahead of Thanh Xuan 3 (Phung Khoang) Station
2	Ahead of Yen Nghia Station	Short of Van Khe Station	

b. Line 3 (Nhon – Ha Noi Stations)



No.	Doubling back plan	Emergency crossover
1	Short or ahead of Nhon Station	Ahead of Le Duc Tho Station
2	Ahead of “Ga Ha Noi” Station	Short of Cau Giay Station

c. Line 2 (Nam Thang Long – Tran Hung Dao Stations)



No.	Doubling back plan	Emergency crossover	Storage track (train siding)
1	Short of Nam Thang Long Station	Short of Diplomatic Corps Station	Diplomatic Corps Station
2	Ahead of Tran Hung Dao Station		

2. Train Disposition Plans

- a. Calculation of the number of trains/cars needed for the operation of each line
- b. The table below shows the methods of calculating the number of trains/cars used for the daily train operation of Lines 2A, 2, and 3 (when starting business).

Item		Unit	Year Formula	2016 (Line 2A)	2019 (Line 2)	2018 (Line 3)
Line length		km	a	13.1	11.5	12.5
Number of train cars		Car	b	4	4	4
Frequency of train operation (rush hours)		Train/tim e-direction Hướng	c	10	12	8
Operation interval		Minute	$d = 60/c$	6	5	7.5
Cycle time		Minute	e	56	48.75	51.6
Number of trains/cars	Operating	Train	$f = c$	10	12	8
	Spare	Train	g	3	2	2
	Total (train)	Train	$h = f + g$	13	13	10
	Total (car)	Car	$j = h*b$	52	56	40

- c. Table 5: Calculation of the number of trains/cars needed for the operation of each line
- d. Train disposition plans (by time period)
- Prepare daily train/car plans based on the results of passenger flow rate surveys for each time period (rush hours, daytime hours, off-peak hours).
 - The table below shows the daily train/car plans of Lines 2A, 2, and 3 in early stages after starting business.

Time period	Line 2A (2016)		Line 2 (2019)		Line 3 (2018)	
	Number of trains	Operation interval (min)	Number of trains	Operation interval (min)	Number of trains	Operation interval (min)
5:00 - 6:00	6	10	8	7.5	5	12
6:00 - 7:00	8	7.5	10	6	8	7.5
7:00 - 8:00	10	6	12	5	8	7.5
8:00 - 9:00	10	6	12	5	6	10
9:00 - 10:00	8	7.5	10	6	6	10
10:00 - 11:00	8	7.5	10	6	6	10

Time period	Line 2A (2016)		Line 2 (2019)		Line 3 (2018)	
	Number of trains	Operation interval (min)	Number of trains	Operation interval (min)	Number of trains	Operation interval (min)
11:00 - 12:00	8	7.5	10	6	6	10
12:00 - 13:00	8	7.5	10	6	6	10
13:00 - 14:00	8	7.5	10	6	6	10
14:00 - 15:00	8	7.5	10	6	6	10
15:00 - 16:00	8	7.5	10	6	6	10
16:00 - 17:00	10	6	12	5	8	7.5
17:00 - 18:00	10	6	12	5	8	7.5
18:00 - 19:00	8	7.5	10	6	8	7.5
19:00 - 20:00	8	7.5	10	6	5	10
20:00 - 21:00	6	10	8	7.5	5	10
21:00 - 22:00	6	10	8	7.5	4	15
22:00 - 23:00	4	15	6	10	4	15
Tổng số (chuyến tàu/ngày)	142		178		105	

Table 6 Operation intervals by time period

V. Requirements for Operating Personnel

1. Classification of Staff Directly Related to Train Operation

a. Train crew

- Driver
- Safety support staff
- Supervisor

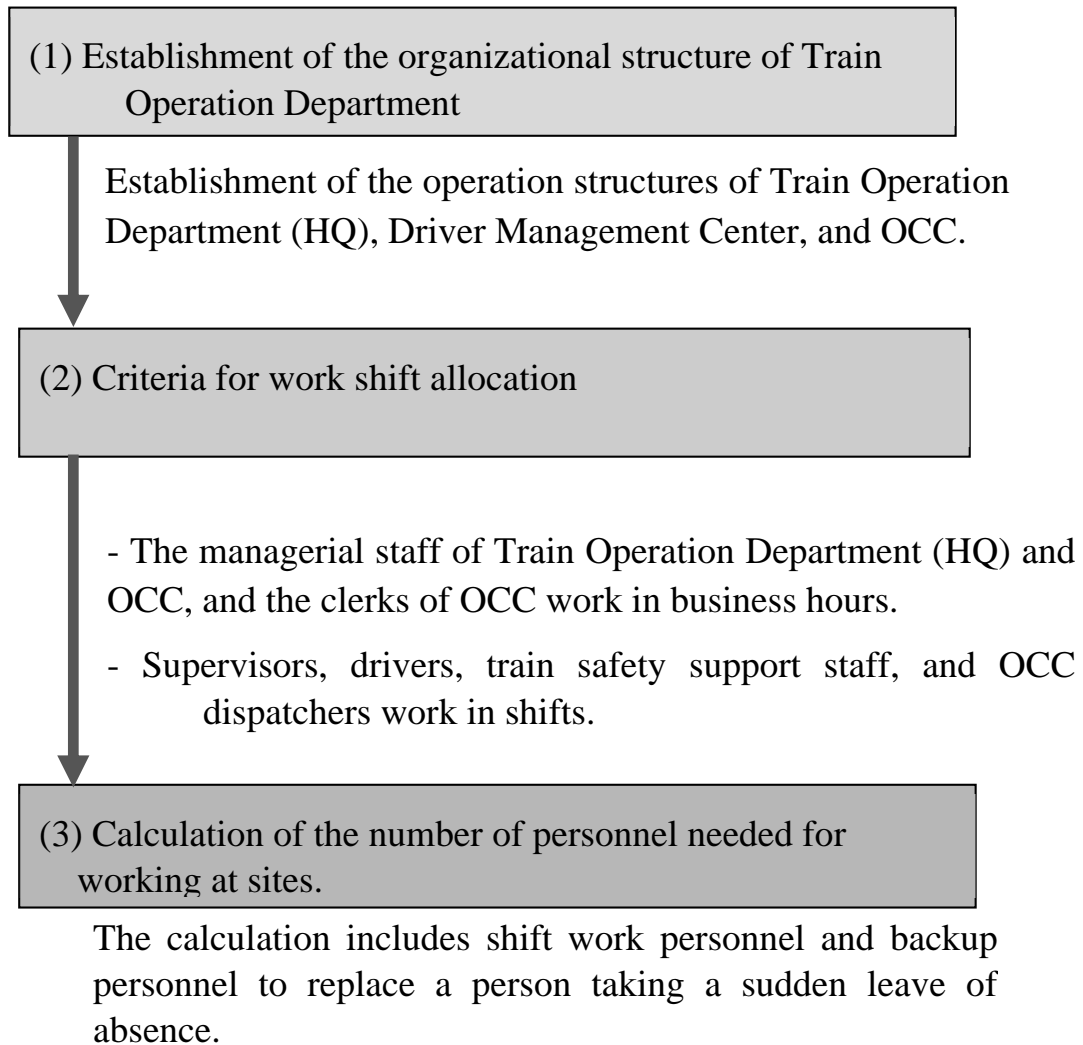
b. Dispatcher

- Chief dispatcher (transportation, electricity, car)
- Dispatcher

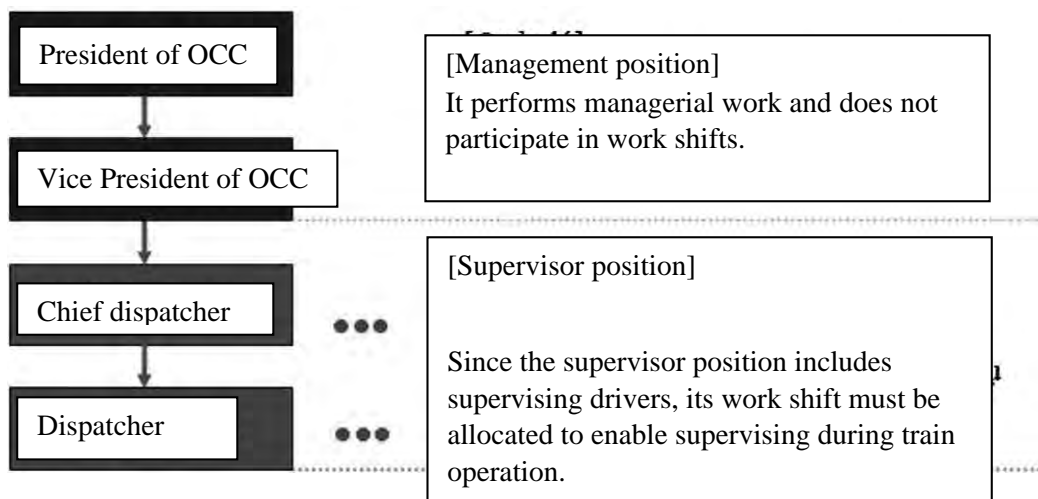
2. Personnel Plans for OCC Staff and Supervisors

- #### a. Procedures for calculating the number of personnel for supervisors and OCC staff

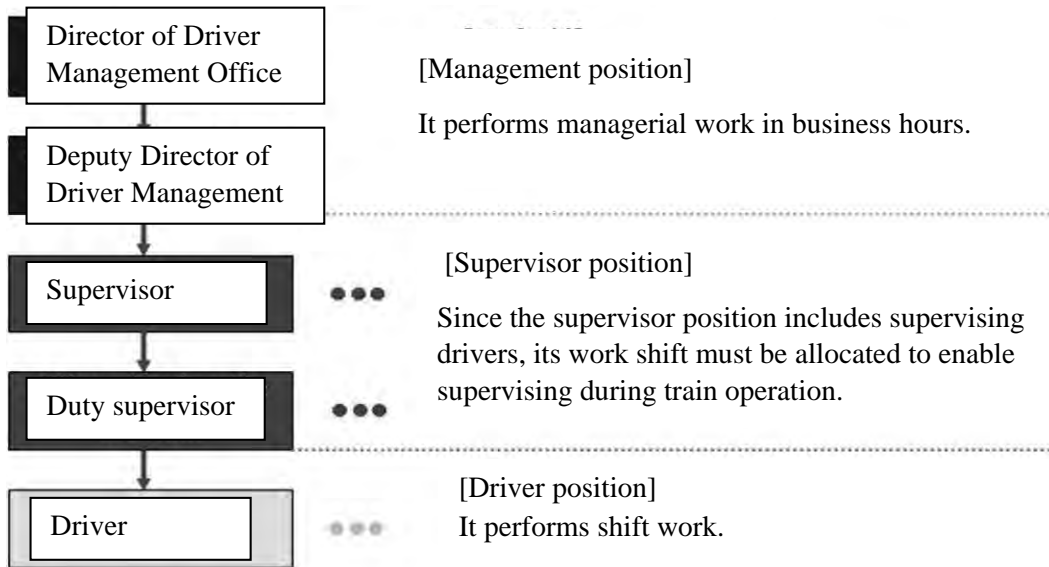
Calculation methods of the number of personnel for supervisors and OCC staff differ depending on company organizational structures and the work-related regulations of each country. The following show calculation procedures:



- Organizational structure of OCC



- The organizational structure of Driver Management Office (OU) is established as follows (based on the organizational structure of Line 2A):



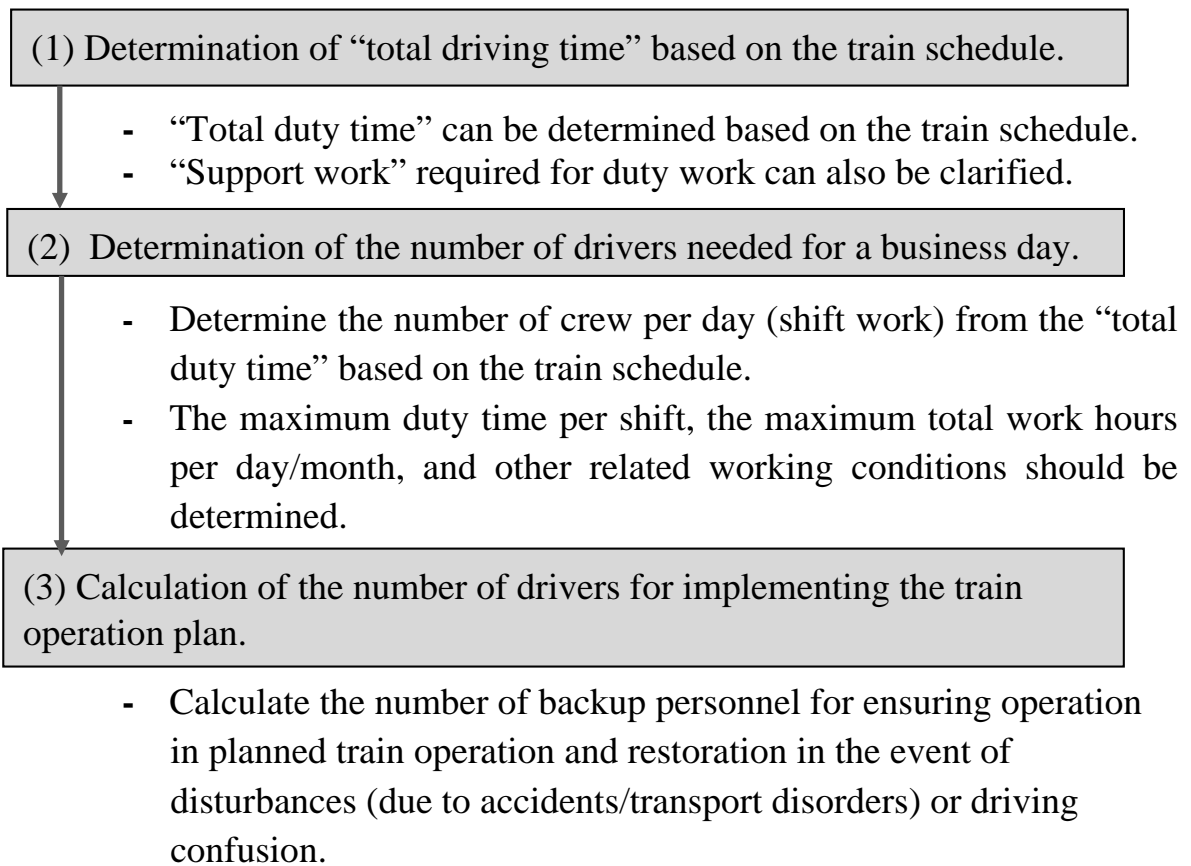
b. The following shows the criteria for work shift allocation of the staff of Train Operation Department (HQ), Driver Management Center (OU), and OCC.

Department	Job type	Criteria for work shift allocation	Line 2A
OCC	President of OCC	1 shift (working in business hours)	1
	Vice President of OCC		1
	Chief dispatcher	3 shifts, 4 groups	1
	Chief electricity dispatcher		1
	Chief equipment dispatcher (communication signal, car)		-
	Train dispatcher	3 shifts, 4 groups	16
	Electricity dispatcher	3 shifts, 4 groups	8
	Equipment dispatcher (environmental audit)	3 shifts, 4 groups	4
Train Operation Department	General Manager	1 shift (working in business hours)	1
	Deputy General Manager		2
Driver Management Center (OU)	Center President	1 shift (working in business hours)	1
	Center Vice President		2
	Senior driving skill staff		1
	Driving skill staff		1
	Driving skill assistant		1
	Senior signal supervisor		4
	Driving supervisor/dispatcher	3 shifts, 4 groups	4
	Signal supervisor	3 shifts, 4 groups	8
	Driver	Calculated based on V-3.	

Table 7 Guideline for the work shift allocation of operation staff

3. Driver Usage Plans

- Driver work shifts must be prepared ensuring fairness to all drivers and operation safety. (Break time between shifts must be ensured.)
- The number of drivers based on an operation plan is calculated according to the following procedure:



3.1. Calculation of the Number of Train Drivers for Implementing a Train Operation Plan

Use the following equation to calculate the number of train drivers for implementing the train operation plan:

$$\text{- Total number of work shifts} = \frac{\text{Total number of trains} * T1}{60 * T2},$$

where T1 means cycle time, and T2 means daily maximum duty time per person.

- Number of drivers means total number of work shifts * K,
where K means backup coefficient (to ensure work shifts in the event that a driver takes a leave of absence or the train operation plan is suddenly changed).

Examples of calculating the number of drivers for Line 2A and preparing their work shifts

Data

- Time required for a train to travel from the start point station to the end point station (including the case of stopping at stations in between them): 56 minutes.

- Scheduled daily total duty time per driver: 6.5 hours.

- Total number of work shifts = $\frac{142 * 56}{60 * 6.5} \doteq 21$ (shifts).

- Total number of drivers = 21 (shifts) x 1.6 (backup coefficient) = 35 (drivers).

(Line 2A is educating 37 drivers in China.)

3.2 Methods of Preparing Work Shift Schedules for Drivers

a. Work shifts are prepared based on the following conditions:

- Total number of crew (shifts).

- Approximate daily duty time: 6 hours (It shall not exceed 8 hours according to The Labor Law No. 10/2012/QH13.)

- Approximate maximum duty hours: 3 hours.

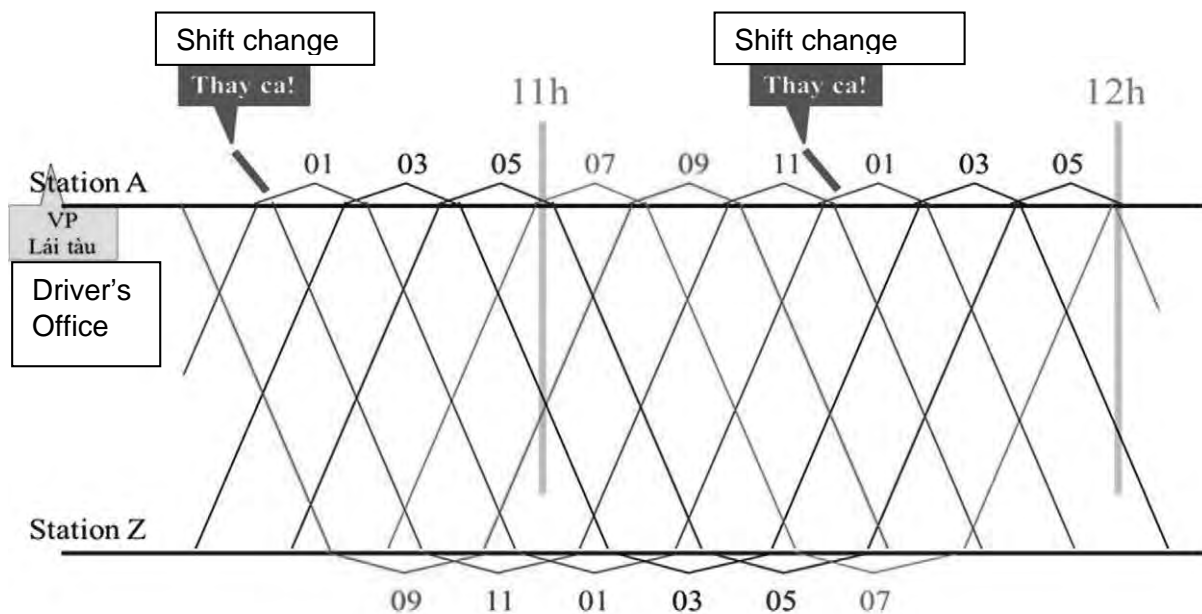
Minimum break time per shift: 30 minutes (safety break).

- On average, each crew member can take 2 off-days per week.

b. The charts below show the details of preparing work shifts:

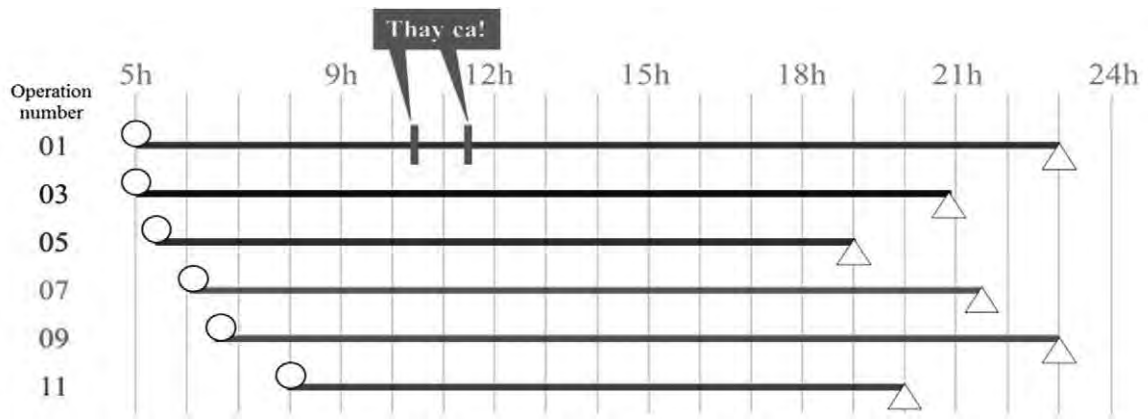
- Assuming that Driver's Office is located at Station A (closest to Station A), work shift change is performed at Station A.

- Specify train arrival times at Station A for all train runs.

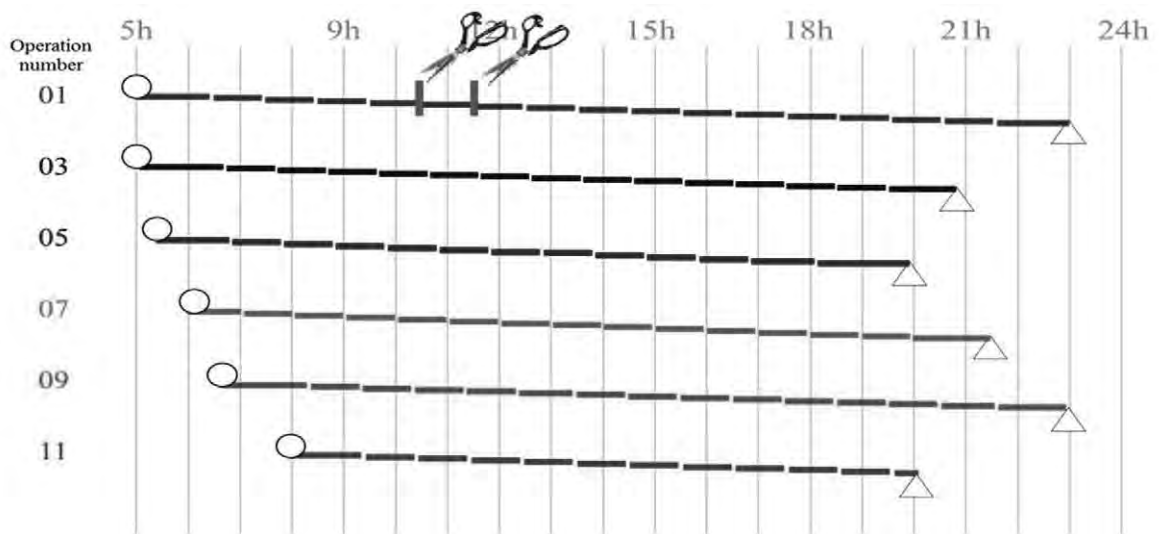


- Preparation of a daily train operation chart

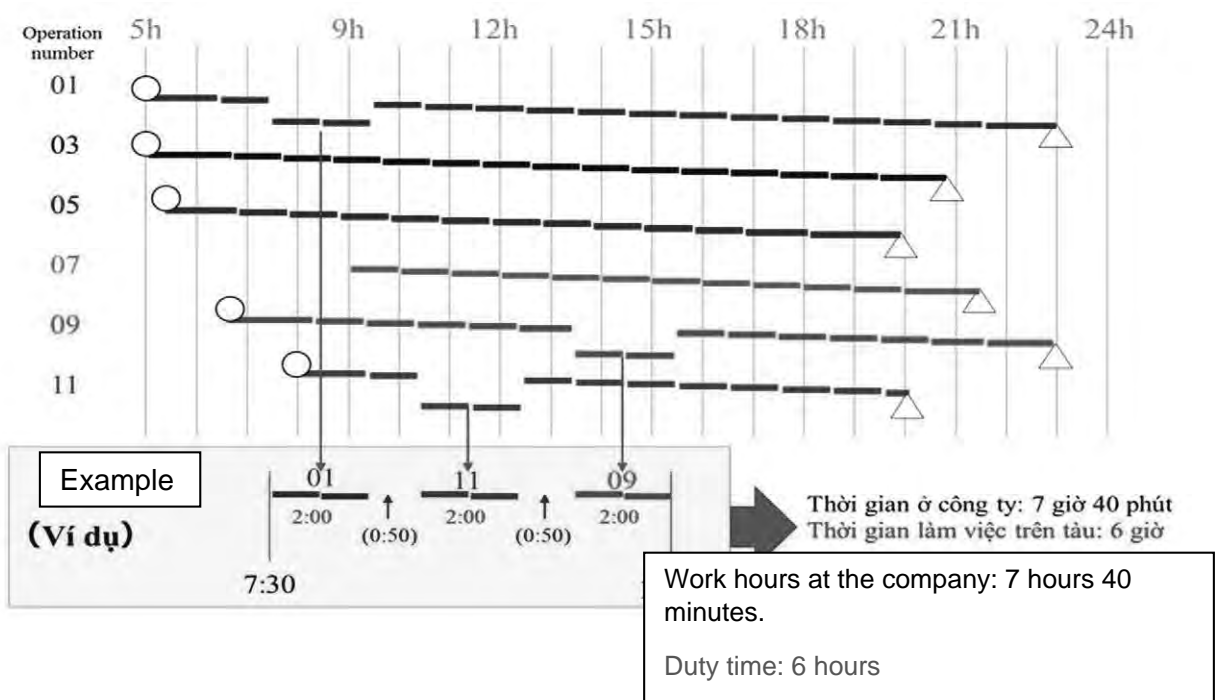
Shift change



- Specify train arrival times at Station A for all trains.



- Prepare work shift schedules for individual drivers based on the shift allocation conditions described in 6.3.2a.



- Continue such work until completing work shift allocation for all drivers.

c. Preparation of work shift tables for all drivers

Classify work shift into 3 types.

- Business hour (daytime) shift (N)
- Early morning shift (A)
- Evening to midnight shift (P)

According to the calculation described above, there are 21 work shifts for drivers. Let us try to allocate work shifts under the following conditions:

- 7 A shifts (early morning), 7 P shifts (evening to midnight), and 7 N shifts (business hours).
- Alternate night shifts (P77), alternate daytime shift (D), and alternate early morning shift (A77).
- Drivers take 2 off-days each week.

Step 1: Prepare a shift allocation table for enabling a person to change work shifts.

	Sun.	Mon.	Tue.	Wed.	Thurs.	Fri	Sat.
Tuần 1	Hol	Hol	P1	A1	N1	P2	A2
Tuần 2	Hol	Hol	P3	A3	N2	P4	A4
Tuần 3	Hol	Hol	P5	A5	N3	P6	A6
Tuần 4	Hol	Hol	P7	A7	N4	N5	N6
Tuần 5	Hol	Hol	N7	D	D	P77	A77

Allocate shifts for each day of the week based on the following rules:

- The all-night shift is necessarily taken over to the next morning's A shift.
- Prepare work shifts by pairing the P shift with the A shift of the same number.
- Looking at the above shift allocation table, P1 is surely followed by A1. If P1 is followed by A3, work shift continuity is lost.
- When the number of night work differs from that of daytime work, use other methods, such as continuously performing daytime work, to adjust the table.
- By carefully considering the above description, the preparation using the order of work shift symbols is appropriate.

Step 2: Estimate weekly duty hours and distances.

	Sun.	Mon.	Tue.	Wed.	Thurs.	Fri	Sat.	T.gian	Cự ly
Tuần 1	Hol	Hol	P1	A1	N1	P2	A2	30	600
Tuần 2	Hol	Hol	P3	A3	N2	P4	A4	35	500
Tuần 3	Hol	Hol	P5	A5	N3	P6	A6	30	500
Tuần 4	Hol	Hol	P7	A7	N4	N5	N6	30	500
Tuần 5	Hol	Hol	N7	D	D	P77	A77	25	400

- Add “duty hours” and “distances” to the above table.
- Continuing alternate work shifts for 5 weeks makes the job easier than the other weeks.
- Change in turn to level weekly workloads. (The hours and distances shown in the above table are examples.)

Step 3: Interchange the driving hours and distances in the table to ensure fairness among drivers.

Although it is extremely difficult to actually ensure absolute fairness, try to achieve a balance as much as possible.

	Sun.	Mon.	Tue.	Wed.	Thurs.	Fri	Sat.	T.gian	Cự ly
Tuần 1	Hol	Hol	P1	A1	N1	P77	A77	30	500
Tuần 2	Hol	Hol	P3	A3	D	P4	A4	30	500
Tuần 3	Hol	Hol	P5	A5	N3	P6	A6	30	500
Tuần 4	Hol	Hol	P7	A7	N4	N5	N6	30	500
Tuần 5	Hol	Hol	N7	D	N2	P2	A2	30	500

Step 4: Preparation of a daily shift allocation table

- Copy the last column (Saturday) and paste it on the first column of the block 2. (Refer to the photograph of the example.)
- Next the last column of the block 2 becomes the first column of the block 3. Repeating such copying and pasting 6 times makes a daily work shift table.
- Here the first column on the left does not indicate weeks but shows driver names.

	Sun.	Mon.	Tue.	Wed.	Thurs.	Fri.	Sat.
Tuần 1	Hol	Hol	P1	A1	N1	P77	A77
Tuần 2	Hol	Hol	P3	A3	D	P4	A4
Tuần 3	Hol	Hol	P5	A5	N3	P6	A6
Tuần 4	Hol	Hol	P7	A7	N4	N5	N6
Tuần 5	Hol	Hol	N7	D	N2	P2	A2
Tuần 1	A77	Hol	Hol	P1	A1	N1	P77
Tuần 2	A4	Hol	Hol	P3	A3	D	P4
Tuần 3	A6	Hol	Hol	P5	A5	N3	P6
Tuần 4	N6	Hol	Hol	P7	A7	N4	N5
Tuần 5	A2	Hol	Hol	N7	D	N2	P2
Tuần 1	P77	A77	Hol	Hol	P1	A1	N1
Tuần 2	P4	A4	Hol	Hol	P3	A3	D
Tuần 3	P6	A6	Hol	Hol	P5	A5	N3
Tuần 4	N5	N6	Hol	Hol	P7	A7	N4
Tuần 5	P2	A2	Hol	Hol	N7	D	N2

Step 6: Prepare complete work shift schedules for 35 drivers.

As in the case of Step 5, laterally move weekly work days. (As shown in the photograph of the example)

	June		July																													August			
	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2
	Sun	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Mon	Tue	Wed	Thurs	Fri	Sat
1	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2
2	Hol	Hol	P3	A3	D	P4	A4																												
3	Hol	Hol	P5	A5	N3	P6	A6																												
4	Hol	Hol	P7	A7	N4	N5	N6																												
5	Hol	Hol	N7	D	N2	P2	A2																												
6	A77	Hol	Hol	P1	A1	N1	P77																												
7	A4	Hol	Hol	P3	A3	D	P4																												
8	A6	Hol	Hol	P5	A5	N3	P6																												
9	N6	Hol	Hol	P7	A7	N4	N5																												
10	A2	Hol	Hol	N7	D	N2	P2																												
11	P77	A77	Hol	Hol	P1	A1	N1																												
12	P4	A4	Hol	Hol	P3	A3	D																												
13	P6	A6	Hol	Hol	P5	A5	N3																												
14	N5	N6	Hol	Hol	P7	A7	N4																												
15	P2	A2	Hol	Hol	N7	D	N2																												
16	N1	P77	A77	Hol	Hol	P1	A1																												
17	D	P4	A4	Hol	Hol	P3	A3																												
18	N3	P6	A6	Hol	Hol	P5	A5																												
19	N4	N5	N6	Hol	Hol	P7	A7																												
20	N2	P2	A2	Hol	Hol	N7	D																												
21	A1	N1	P77	A77	Hol	Hol	P1																												
22	A3	D	P4	A4	Hol	Hol	P3																												
23	A5	N3	P6	A6	Hol	Hol	P5																												
24	A7	N4	N5	N6	Hol	Hol	P7																												
25	D	N2	P2	A2	Hol	Hol	N7																												
26	P1	A1	N1	P77	A77	Hol	Hol																												
27	P3	A3	D	P4	A4	Hol	Hol																												
28	P5	A5	N3	P6	A6	Hol	Hol																												
29	P7	A7	N4	N5	N6	Hol	Hol																												
30	N7	D	N2	P2	A2	Hol	Hol																												
31	Hol	P1	A1	N1	P77	A77	Hol																												
32	Hol	P3	A3	D	P4	A4	Hol																												
33	Hol	P5	A5	N3	P6	A6	Hol																												
34	Hol	P7	A7	N4	N5	N6	Hol																												
35	Hol	N7	D	N2	P2	A2	Hol																												

	JUN./16				JUL./2016																												AUG./16		
	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2
Lái tàu	Web	Thu	Fri	Sat	Sun	Mon	Tue	Web	Thu	Fri	Sat	Sun	Mon	Tue	Web	Thu	Fri	Sat	Sun	Mon	Tue	Web	Thu	Fri	Sat	Sun	Mon	Tue	Web	Thu	Fri	Sat	Sun	Mon	Tue
1	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2
2	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77
3	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4
4	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6
5	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6
6	A77	Hol	Hol	P1	A1	N1	P77	A4	Hol	Hol	P3	A3	D	P4	A6	Hol	Hol	P5	A5	N3	P6	N6	Hol	Hol	P7	A7	N4	N5	A2	Hol	Hol	N7	D	N2	P2
7	A4	Hol	Hol	P3	A3	D	P4	A6	Hol	Hol	P5	A5	N3	P6	N6	Hol	Hol	P7	A7	N4	N5	A2	Hol	Hol	N7	D	N2	P2	A77	Hol	Hol	P1	A1	N1	P77
8	A6	Hol	Hol	P5	A5	N3	P6	N6	Hol	Hol	P7	A7	N4	N5	A2	Hol	Hol	N7	D	N2	P2	A77	Hol	Hol	P1	A1	N1	P77	A4	Hol	Hol	P3	A3	D	P4
9	N6	Hol	Hol	P7	A7	N4	N5	A2	Hol	Hol	N7	D	N2	P2	A77	Hol	Hol	P1	A1	N1	P77	A4	Hol	Hol	P3	A3	D	P4	A6	Hol	Hol	P5	A5	N3	P6
10	A2	Hol	Hol	N7	D	N2	P2	A77	Hol	Hol	P1	A1	N1	P77	A4	Hol	Hol	P3	A3	D	P4	A6	Hol	Hol	P5	A5	N3	P6	N6	Hol	Hol	P7	A7	N4	N5
11	P77	A77	Hol	Hol	P1	A1	N1	P4	A4	Hol	Hol	P3	A3	D	P6	A6	Hol	Hol	P5	A5	N3	N5	N6	Hol	Hol	P7	A7	N4	P2	A2	Hol	Hol	N7	D	N2
12	P4	A4	Hol	Hol	P3	A3	D	P6	A6	Hol	Hol	P5	A5	N3	N5	N6	Hol	Hol	P7	A7	N4	P2	A2	Hol	Hol	N7	D	N2	P77	A77	Hol	Hol	P1	A1	N1
13	P6	A6	Hol	Hol	P5	A5	N3	N5	N6	Hol	Hol	P7	A7	N4	P2	A2	Hol	Hol	N7	D	N2	P77	A77	Hol	Hol	P1	A1	N1	P4	A4	Hol	Hol	P3	A3	D
14	N5	N6	Hol	Hol	P7	A7	N4	P2	A2	Hol	Hol	N7	D	N2	P77	A77	Hol	Hol	P1	A1	N1	P4	A4	Hol	Hol	P3	A3	D	P6	A6	Hol	Hol	P5	A5	N3
15	P2	A2	Hol	Hol	N7	D	N2	P77	A77	Hol	Hol	P1	A1	N1	P4	A4	Hol	Hol	P3	A3	D	P6	A6	Hol	Hol	P5	A5	N3	N5	N6	Hol	Hol	P7	A7	N4
16	N1	P77	A77	Hol	Hol	P1	A1	D	P4	A4	Hol	Hol	P3	A3	N3	P6	A6	Hol	Hol	P5	A5	N4	N5	N6	Hol	Hol	P7	A7	N2	P2	A2	Hol	Hol	N7	D
17	D	P4	A4	Hol	Hol	P3	A3	N3	P6	A6	Hol	Hol	P5	A5	N4	N5	N6	Hol	Hol	P7	A7	N2	P2	A2	Hol	Hol	N7	D	N1	P77	A77	Hol	Hol	P1	A1
18	N3	P6	A6	Hol	Hol	P5	A5	N4	N5	N6	Hol	Hol	P7	A7	N2	P2	A2	Hol	Hol	N7	D	N1	P77	A77	Hol	Hol	P1	A1	D	P4	A4	Hol	Hol	P3	A3
19	N4	N5	N6	Hol	Hol	P7	A7	N2	P2	A2	Hol	Hol	N7	D	N1	P77	A77	Hol	Hol	P1	A1	D	P4	A4	Hol	Hol	P3	A3	N3	P6	A6	Hol	Hol	P5	A5
20	N2	P2	A2	Hol	Hol	N7	D	N1	P77	A77	Hol	Hol	P1	A1	D	P4	A4	Hol	Hol	P3	A3	N3	P6	A6	Hol	Hol	P5	A5	N4	N5	N6	Hol	Hol	P7	A7
21	A1	N1	P77	A77	Hol	Hol	P1	A3	D	P4	A4	Hol	Hol	P3	A5	N3	P6	A6	Hol	Hol	P5	A7	N4	N5	N6	Hol	Hol	P7	D	N2	P2	A2	Hol	Hol	N7
22	A3	D	P4	A4	Hol	Hol	P3	A5	N3	P6	A6	Hol	Hol	P5	A7	N4	N5	N6	Hol	Hol	P7	D	N2	P2	A2	Hol	Hol	N7	A1	N1	P77	A77	Hol	Hol	P1
23	A5	N3	P6	A6	Hol	Hol	P5	A7	N4	N5	N6	Hol	Hol	P7	D	N2	P2	A2	Hol	Hol	N7	A1	N1	P77	A77	Hol	Hol	P1	A3	D	P4	A4	Hol	Hol	P3
24	A7	N4	N5	N6	Hol	Hol	P7	D	N2	P2	A2	Hol	Hol	N7	A1	N1	P77	A77	Hol	Hol	P1	A3	D	P4	A4	Hol	Hol	P3	A5	N3	P6	A6	Hol	Hol	P5
25	D	N2	P2	A2	Hol	Hol	N7	A1	N1	P77	A77	Hol	Hol	P1	A3	D	P4	A4	Hol	Hol	P3	A5	N3	P6	A6	Hol	Hol	P5	A7	N4	N5	N6	Hol	Hol	P7
26	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol
27	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol
28	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol
29	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol
30	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol
31	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol
32	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol
33	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol
34	Hol	P7	A7	N4	N5	N6	Hol	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol
35	Hol	N7	D	N2	P2	A2	Hol	Hol	P1	A1	N1	P77	A77	Hol	Hol	P3	A3	D	P4	A4	Hol	Hol	P5	A5	N3	P6	A6	Hol	Hol	P7	A7	N4	N5	N6	Hol

Table 8 Preparation of work shift schedules for Line 2A drivers

Legend

A Work shift starting early in the morning, P Work shift starting in the evening, N Daytime work shift, D Alternate daytime work shift

A77 Alternate early morning work shift, P77 Alternate evening work shift, Hol Day off

4. Driver Education and Training Plans

Licensed drivers need to continually receive education and training to keep their skills and knowledge. The table below shows company driver education and training plans:

Item	Implementation timing	Content	Place
Follow-up education (Supplemental course)	Within 1 year after obtaining a license	Academic courses on technical knowledge, problem solving training, failure handling training	Training Center
	Within 3 years after obtaining a license		
Checking and testing driving skills	Within 6 months after obtaining a license	Driving and operation, handling of on-board equipment, on-time operation, work requiring attention	
	Within 1 year after obtaining a license		
Internal education	Education provided as necessary	Notification of changes in driving rules and sharing information (on accidents, transport disorders, etc.)	Line supervisor
	Periodic education	Academic courses on technical knowledge, problem solving training, failure handling training	
	Education for transferees	Knowledge and skills needed for transferees to work at their new positions.	

Table 9 Courses for driver education and training

4.1 Supplemental Courses

Within a certain period after drivers obtain licenses, their knowledge and skills must be checked and tested.

Supplemental skill education and training are implemented in the following cases:

- When drivers have insufficient knowledge and skills, they must take relevant educational courses.
- Drivers must receive education to supplement their knowledge and skills.

Implementation timing	Content	Implementation method
1 year and 3 years after obtaining a license	Driver's work	Classroom lectures
	Present status of the company	
	Technical knowledge education	
	Accident handling training	Hands-on training
	Failure handling training	

Table 10 Driver training courses

4.2 Checking and Testing Driving Skills

Six months and one year after obtaining a license, drivers must take a test for evaluating basic driving skills. The test is conducted while they are actually operating a train under the supervision of a supervisor.

If drivers fail to meet the requirements for driving skills, they cannot work as crew before receiving supplemental education (at Training Center).

Implementation timing	Content	Implementation method
6 months and 1 year after	Driving and operation	Supervisors check the driving skills of crew while
	Handling of on-board equipment	

obtaining license	a	On-time operation	they are working on board a train.
		Work requiring attention	
		Others needed for inspection	

Table 11 Checking and testing driving skills

4.3 Internal Education

In addition to implementing the education, training, and inspection/test specified by regulatory bodies, internal education is also very important.

The following table shows the implementation timing, content, and implementation method of internal education.

Implementation timing	Content	Implementation method
Education provided as necessary	Notification of changes in driving rules	Not included in education plans but implemented as necessary.
	Notification of newly issued official notices and circulars	
	Sharing information (on railway accidents, handling mistakes, etc.)	
	Issues requiring special notification	
Periodic education	Educational courses on technical knowledge	Based on rules for education plans in the department, annual implementation periods and contents are specified. (In the case of Tokyo Metro, 30 hours or more)
	Accident handling training	
	Failure handling training	
Education for transferees	Knowledge needed for transferees to work at their new positions.	Implemented when personnel is transferred from other lines.

Table 12 Internal education

5. Driver Management

Besides education, supervisors must implement crew management. The relevant information is entered into a database. The data is used for salary calculation, safety control, accident investigation, etc.

Driver management includes the following items:

- Roll calls
- Rounds/inspection
- Management of daily work
- Competence management of drivers

Item	Implementation timing	Content
Roll call	Before and after working on board	Inspecting the mental and physical aspects of drivers and notifying them of important information before and after work shifts.
Round/inspection	While drivers are working on board	Check drivers' actual on-board working conditions. Details are specified in the company's internal rules.
Work management	As needed	Division of duties, work hour management, travel distance control, etc. Details are specified in the company's internal rules.
Competence management of drivers	As needed	Body functions, mental functions, knowledge, accident records, etc. Details are specified in the company's internal rules.

Table 13 Driver management

5.1 Roll Calls

Roll calls aim not only to control work hours, but to check drivers' mental and physical conditions and notify them of important information. Roll calls are also carried out to perform train operation as scheduled.

The table below shows the implementation timing and details of roll calls:

Implementation timing	Detail
Work start time	Attendance check, issuing work instructions, conveying precautions, checking mental and physical conditions
Before working on board	Drivers report on starting working on board to enable scheduled train operation based on the train route table.
After working on board	Drivers report on ending working on board. (Completing the “Operation Report” form and submitting it to the supervisor.)
Work end time	Drivers report on the presence or absence of abnormalities and check the next work shift.

Table 14 Roll calls of drivers

5.2 Rounds and Inspections

Supervisors perform rounds and driver inspections. Information collected at the time of rounds and inspections is stored in a driver management database and shared by all supervisors.

The data is used for the purpose that supervisors collect information to determine the directions of the management, education, and training of drivers. It is also submitted to regulatory bodies and investigative bodies when required.

Implementation timing	Detail
Rounds accompanied by a supervisor	A supervisor on board the cab or a car inspects the driver’s work.
Fixed-point rounds	A supervisor makes the rounds of a platform to implement the inspection of the driver’s work.
Special rounds	Intensive checks and instructions are made during an accident prevention campaign period or other periods. (Rounds accompanied by a supervisor of fixed-point rounds)

Table 15 Rounds and the inspections of drivers

5.3 Work Management

The management of drivers is made based on the company's internal rules. The information is entered into the administrative database and used as a basis for drivers' salary calculation and safety management.

Type	Explanation
Work assignment	<ul style="list-style-type: none"> - Drivers' work shifts are specified in detail by each line's operation plan. - The principle in preparing work shift schedules is to ensure fairness in workload, work hour, and break time for all drivers.
Work hour management	<ul style="list-style-type: none"> - Supervisors record and control drivers' actual work hours not to exceed the upper limits specified by the labor Standard Law.
Work distance management	<ul style="list-style-type: none"> - Supervisors record drivers' work distances, which are used as a basis for evaluating their performances and calculating their allowances (if any according to the company's internal rules).
Education and training management	<ul style="list-style-type: none"> - Supervisors take charge of driver education and training. - If the number of hours and skills do not meet the standards, additional education and training are needed.
Health care	<ul style="list-style-type: none"> - Drivers must have a medical examination periodically once every 6 months. - Based on periodical medical examinations, supervisors make an appropriate judgment on each driver.

Table 16 Driver management

5.4 Competence Management of Drivers

Competence management is specified in the company's internal rules for the function improvement and safety management of drivers. It is a very important management method to estimate the possibility of drivers' mistakes and accidents. Information on competence management is stored in a driver management database.

5.4.1 Management Items of Driver Functions

Drivers' competence management is essential to ensure safe and effective train operation. The table below shows the management items of driver functions stored in the driver management database.

Item	Explanation

Physical function	Management of medical examination results and medical histories. It is used to check whether a driver satisfies the criteria for a train driver.
Mental function	It is used to check whether a driver's mental conditions satisfy the criteria for a train driver. It is also used for examination result management.
Sleep apnea syndrome (SAS)	Checking of a sleep disorder in which breathing repeatedly stops and starts during sleep. Persons with this syndrome cannot sleep deeply, and hence they are likely to fall a sleep while driving.
Confirmation results of education and training effects	Management of the results of the education and training implemented in II. It is used to check whether a driver satisfies the criteria for a train driver.
Results of walk-around instructions	Management of the results of the walk-around instructions implemented in III.
Work situation	Management of the results of the walk-around instructions implemented in III and daily work situation.
Accident history	Management of the accident history of each driver.

Table 17 Competence management of drivers

5.4.2 Drivers Ranking

Drivers are ranked based on examination results. Education and training plans and contents for drivers differ depending on drivers' rankings.

General Manager of Train Operation Department (HQ) works as Chairman of Driver Ranking Assessment Committee. Data analyzed and used to rank drivers must be fully considered.

Rank	Explanation
Rank 1: Drivers who need guidance.	Drivers who have problems with work, knowledge, and skills.
Rank 2: Drivers who need supplemental education.	Drivers who have made a driving mistake and need supplemental education.

Rank 3: Drivers whose working on board is temporarily prohibited.	Drivers who have made a mistake or caused an accident and are identified as being lacking in knowledge, skills, physical functions, and mental function.
Rank 4: Drivers whose working on board is indefinitely prohibited.	Drivers who have frequently made a mistake or caused an accident and have physical or mental function problems.
Rank 5: Drivers whose licenses are canceled.	Drivers who do not meet requirements for a driver and show no sign of improvement.

Table 18 Driver Ranking

VI. Development of Train Operation Plans

1. Timelines for Operation Plan Development

A “transportation improvement plan” must be prepared simultaneously with the company’s 5-year business plan. The “transportation improvement plan” must hence be prepared sufficiently reflecting customer demand.

The preparation, establishment, and announcement of operation plans must comply with the Railways Act and circulars as its guides.

The timelines of operation plan development shown in the table below is based on Circular No. .../2015/TT-BGTVT (draft) “Preparation, Enactment, and Promulgation of Load Instructions, Speed Instructions, and Train Schedules in National Railways and Urban Railways.”

Action	Year																		
		5	4	3	2	1	12	11	10	9	8	7	6	5	4	3	2	1	Thực hiện
Study of train schedules		●																	
Planning of transportation plan improvement		○	●															
Study on operation plans		○	●															
Inter-department coordination of operation plans		○	●															

Action	Year													Thực hiện					
	Month	5	4	3	2	1	12	11	10	9	8	7	6		5	4	3	2	1
Materialization of operation plans				○.....●															
Preparation of detailed train diagrams					○.....●														
Preparation of operation control data													○.....●						
Preparation of crew work plans													○.....●						
Printing of train diagrams														○.....●					
Submission to regulatory bodies															○.....●				
Explanation to related departments															○.....●				
Press announcement of																○.....●			

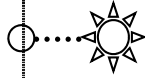
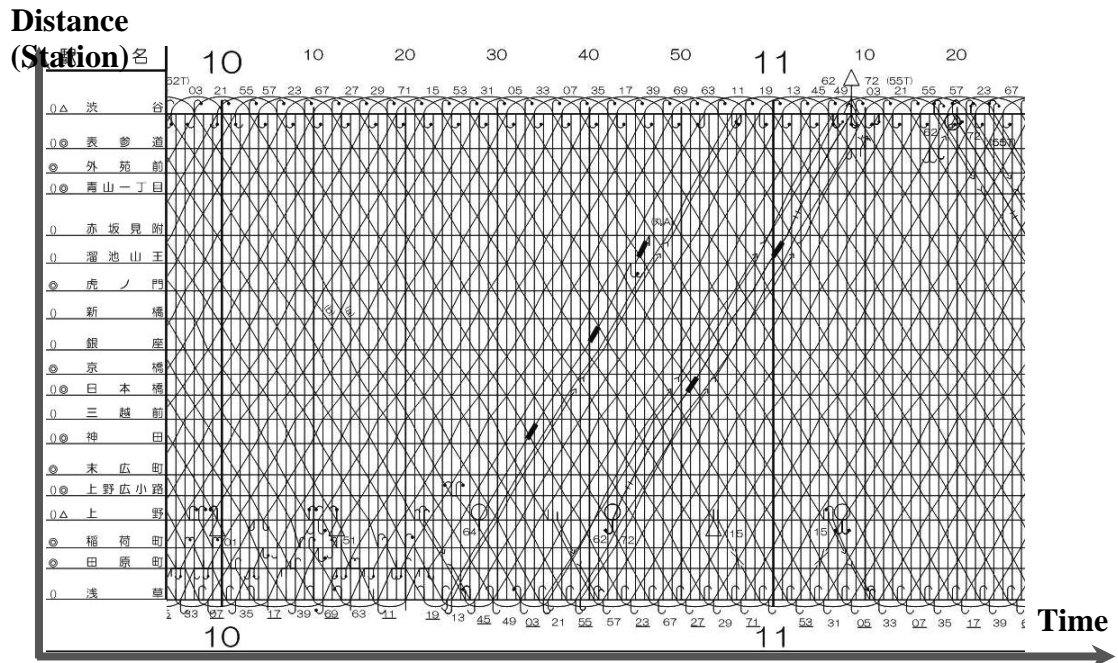
		Year																
		5	4	3	2	1												
Action	Month					12	11	10	9	8	7	6	5	4	3	2	1	Thực hiện
train	diagram																	
revision																		
Preparation	for																	
revision																		

Table 19 Timelines for operation plan development

2. Train Operation Diagrams

Train operation diagrams show train movement and are expressed by the relation between “time” and “distance.”



“Distance” means the “distances between stations.”

“Time” used in train diagrams is determined by “train performance curves.” It includes the following:

- Transit time between stations
- Stop time at stations
- Doubling back time at start point stations and end point stations

Stop time at a station (T_{station}) is calculated from the following equation:

$$T_{\text{station}} = \frac{\text{Volume of entrainment and detrainment per hour}}{\text{Number of train runs per hour} \times \text{Number of train doors}} + \text{Volume of entrainment and detrainment per second}$$

+ Door opening and closing time + Time allowance

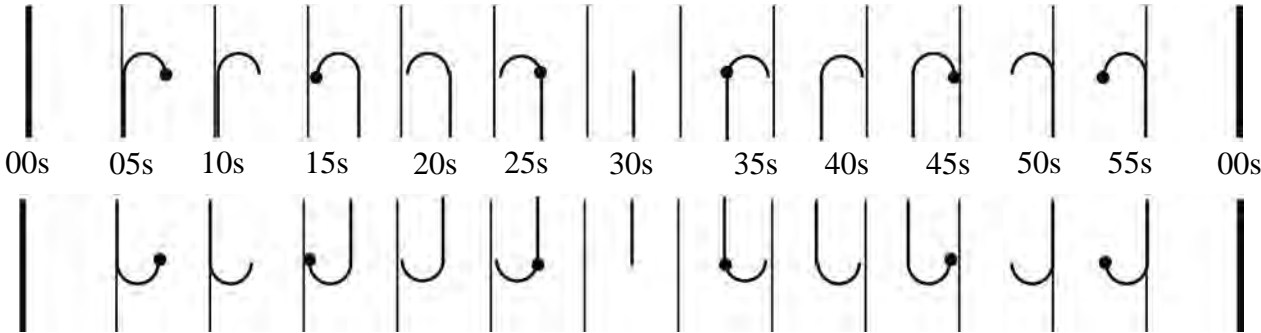
2.1 Interpretation and Drawing of Train Operation Diagrams

Railway companies use their own diagram symbols. Presently in the City of Hanoi, many countries are investing in the construction of various urban railway lines. The

lines use different symbols for the same meaning. In the future, the unification of the diagram symbols used by urban railway lines in the City of Hanoi is essential for communication and cooperation between persons in charge.

- a. Longitudinal axis (distance): It shows the distance. Draw a line for each station. The arrangements of the lines showing the locations of stations are determined by distances.
- b. Horizontal axis (time): It shows train travel time between stations. Each line corresponds to a minute of operation time. The following shows the expression using symbols for a period of time shorter than a minute.

Traveling from Station A



Traveling from Station B

Note: Lines not marked with ● are expressed in steps of 10 seconds. Lines marked with ● are expressed in steps of 10 seconds plus 5 seconds.

- c. Other symbols in train diagrams:

No.	Symbol	Meaning	Remarks
1	○	Train having left a shed	
2	△	End of train operation (Entering into a shed/sliding)	
3	◎	Station where switches are not installed.	

4	×	Station used only for car shunting	
5	—□—	Dead-heading train (Operated daily)	
6	—■—	Unscheduled dead-heading train (Operation date is specified.)	
7	— — —	Test run train	

Table 20 Several symbols used in train diagrams

2.2 Train Operation Numbers

Since many trains are operated every day, assigning an individual number to each train on a train diagram is needed to facilitate train identification, operation instructions, or operation format preparation.

Train operation numbers must be easily recognizable and identifiable and contain key information as shown below:

- Direction of operation
- Departure time at the starting station
- Operation number
- Home depot

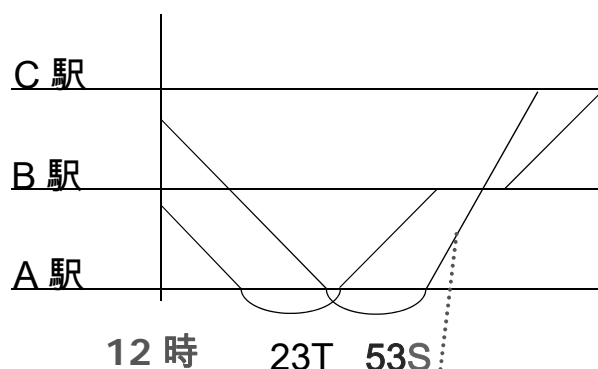
a. Example of rules for train operation numbers in Japan:

Station C

Station B

Station A

12:00



Train operation number

A³⁷1253 S

①②③④

Symbol	Meaning
①	Direction of operation
②	Departure time a the starting station
③	Operation number
④	Car depot

Table 21 Example of rules for train operation numbers in Japan

b. Rules for train operation numbers in China (Beijing Metro)

- Principal of preparing train operation numbers: Use 4 decimal numbers to indicate a train number. The first digit shows the direction of operation (“2” for the up direction and “1” for the down direction), the second digit shows train types, and the last 2 digits show operation orders.

- Train types and rules for preparing train operation numbers:

Train type	Symbol	Train number
Scheduled passenger train	0-3	1001—1499; 2001—2499
Freight train	4	1401—1499; 2401—2499
Temporary passenger train	5	1501—1599; 2501—2599
test run train	6	1601—1699; 2601—2699
Rescue train	7	1701—1799; 2701—2799
Dead-heading train running to a depot	8	1801—1899; 2801—2899
Construction train	9	1901—1999; 2901—2999

Table 22 Rules for train numbers in China

Note:

- Hanoi’s urban railway line No. 4 (according to Decision No. 1259/QD-TTg) is a loop line and has relay points and connection points with other lines. “Up and down” marks as specified in China are unreasonable.

- Only 2 digits are used for operation orders (01 ~ 99). If the number of train runs is 100 or more in a day, repeating the same numbers makes train operation instructions inconvenient.
- “Test run trains,” “dead-heading trains,” “rescue trains,” and “construction trains” are generally indicated by symbols in train diagrams for easy identification.
- Japanese train numbering rules makes train departure time identifiable, which facilitates operation instructions and the preparation of train operation formats and reports.

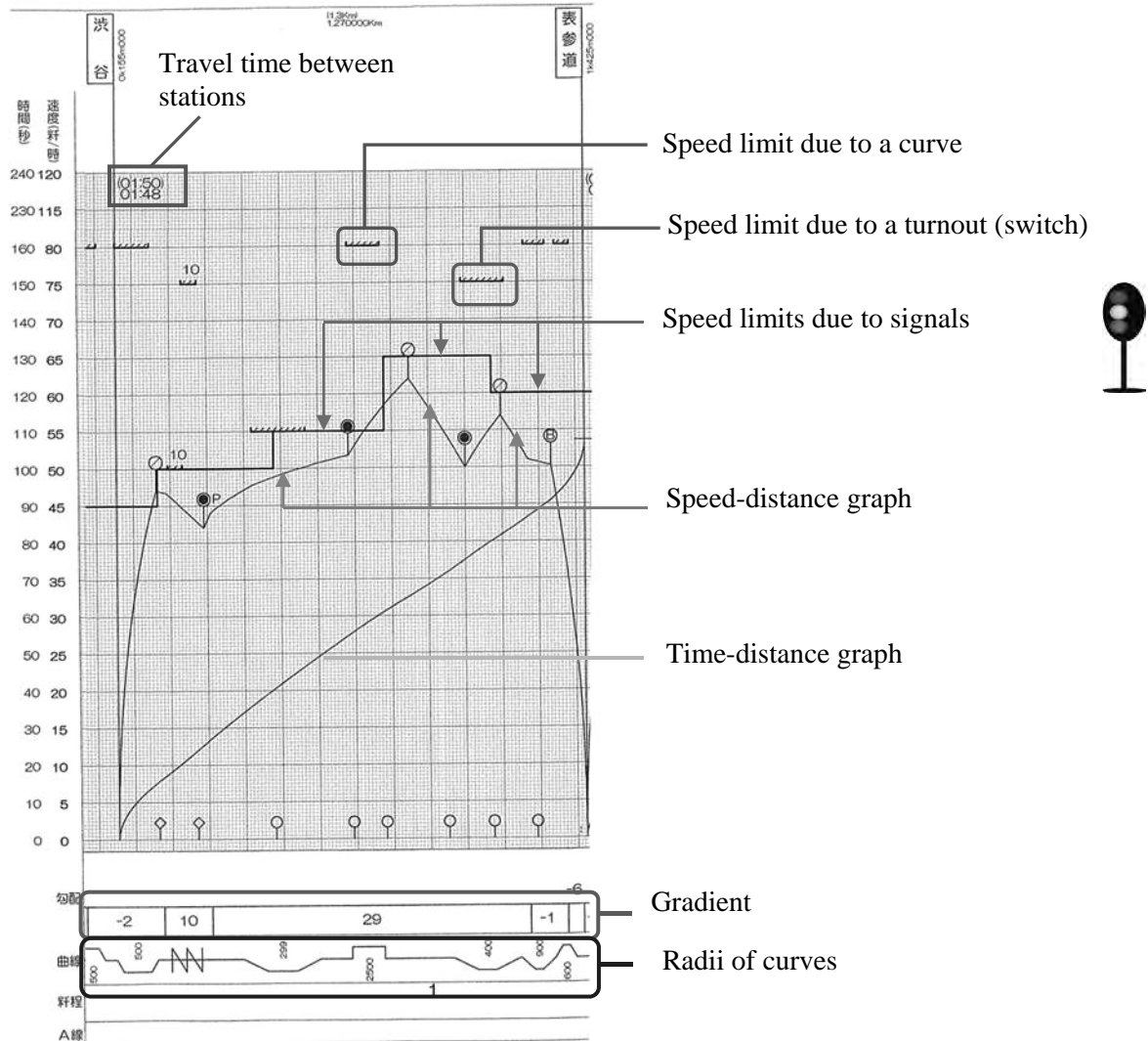
Proposal: To adopt a train numbering method as used in Japan.

3. Train Performance Curves

Train performance curves indicate the relation of train speeds and travel time with distances. They are the bases for determining appropriate travel time between stations.

Travel time between stations is determined by drawing train performance curves.

The following information is incorporated in train performance curves:



3.1 Preparation of Train Performance Curves

a. Curves indicating the relation between “operation speeds” and “travel distances” (red lines)

- To obtain a train speeds, obtain the “acceleration force” and the “deceleration force.”
- Acceleration force: motor power, downhill
- Deceleration force: break power, uphill, curve resistance, air resistance
- The above relations are expressed by the following equation:

Acceleration force = Motor power - Uphill resistance - Curve resistance - air resistance

$$\text{加速力 (Accelerating force)} = \text{モーターの力 (Power of motor)} - \left[\text{登り坂の抵抗 (Resistance of uphill)} + \text{曲線抵抗 (Curve resistance)} + \text{空気抵抗 (Air resistance)} \right]$$

b. Curves indicating the relation between “time” and “distances” (blue lines)

After determining an operation speed, calculate the travel time.

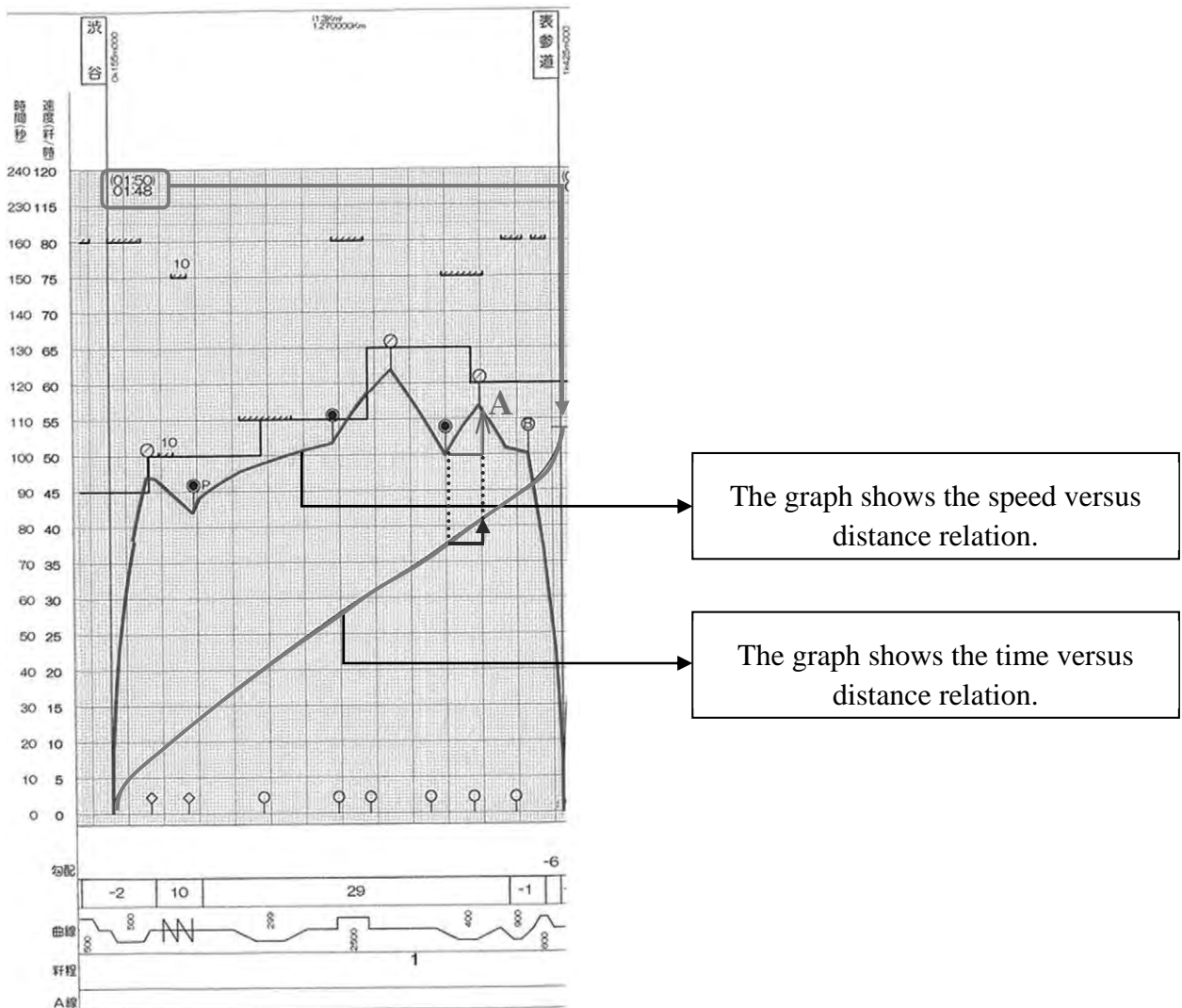
Travel time = Distance/speed

At the point A in the figure, the speed is accelerated from 50 km/h to 57 km/h, moving 100 m.

Consider that the train moved 100 m at an average speed of 53.5 km/h.

The travel time at the point A in the figure below is as follows:

$$T_A = \frac{100 \text{ (m)}}{53.5 \text{ (km/h)}} \times \frac{3600 \text{ (s)}}{1000 \text{ (m)}} \approx 6.7 \text{ (giây)}$$



- Dividing the graph to small sections enables the calculation of the travel time from the Station A to Station B. In this example, the travel time from Station A to Station B is 108 seconds (1 minute 48 seconds).
- Knowing the acceleration and deceleration speeds, the following equation gives the travel time.

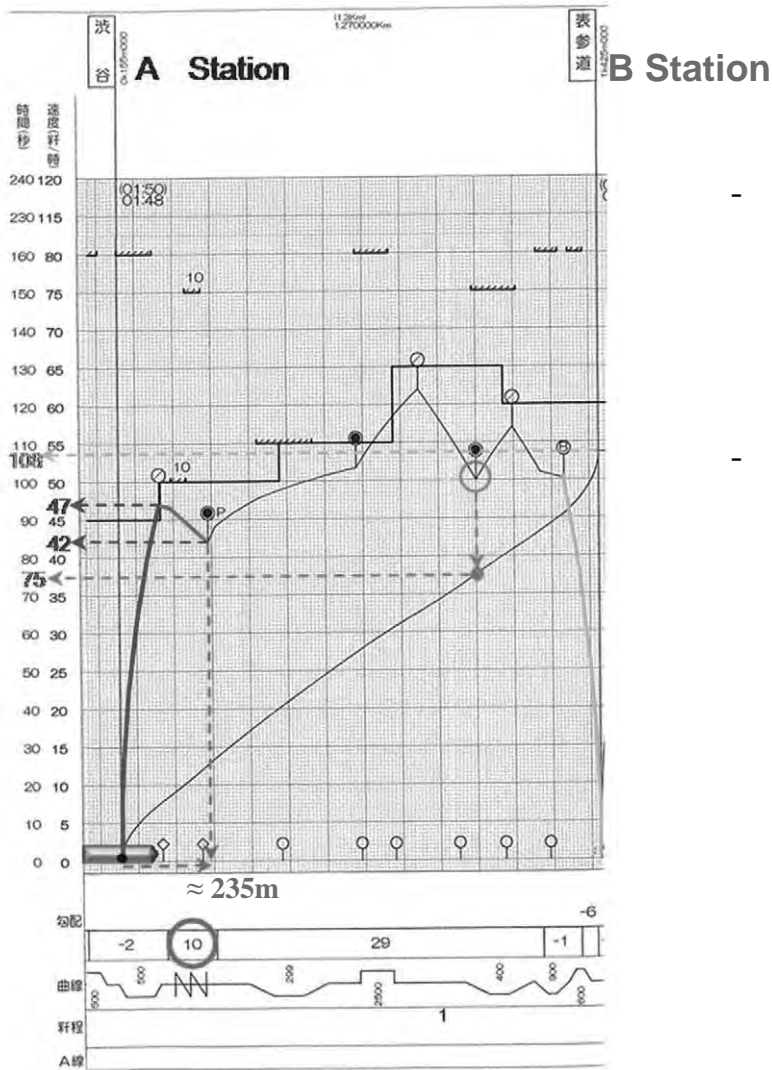
$$\text{Travel time (s)} = \frac{\text{Variation in speed (km/h)}}{\text{Acceleration and deceleration speeds (km/h/s)}}$$

- The train schedule specifies to perform the calculation following the speed of 5 seconds to facilitate easy operation management. Travel time calculation is performed by a scale of 5 seconds. This scaled part is called “margin time.” In actual train operation, a driver operates a train with some margin time.

3.2 Interpretation and Drawing of Train Performance Curves

To explain the method for drawing a train performance curve, an example is shown.

- A train performance curve indicates the center of the train.
- The red line shows the acceleration after departing from Station A. The mark ○ at the last point of the red line shows the end of acceleration.
- The speed at this point is about 47 km/h.
- The green line shows a coasting. The figure 10 near the mark ○ means an uphill gradient of 10%, where the train decelerates to a speed of about 42 km/h. Up to this point where the train accelerates again, the travel distance is about 235 m.



- Then repeating acceleration and coasting, the train arrives at the point marked with ○ with an elapsed time of about 75 seconds (one mesh corresponds to one second) after departing from Station A.
- Finally using a brake to decelerate, the train arrives at Station B, which is shown by the orange line. The elapsed time is about 108 seconds (1 minute 48 seconds).

Station A Station B

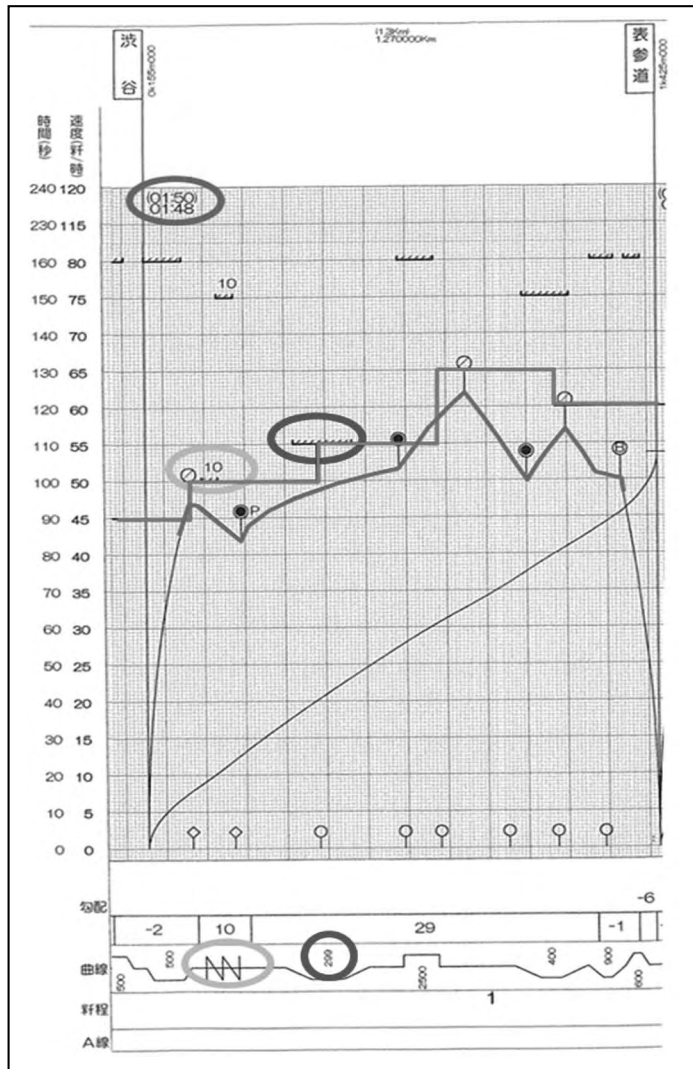
3.3 Input Data for Preparing Train Performance Curves

No.	Input item	Explanation
①	Motor power corresponding to the speed	In general, a 90% value is used for a voltage parameter, and the median value between the diameters of new and maximum worn wheels is used as a theoretical value of a wheel diameter. For example, voltage: 1500 V → 1350 V, 750 V → 675 V; wheel diameter: 860 mm → 820 mm.
②	Braking deceleration	In the case of Tokyo Metro trains: 3 km/h/s – 4 km/h/s
③	Slope position and gradient	Ascending or descending distance for every 1,000 m (‰)

④	Curve position and radius	Calculate the curve resistance versus radius and the speed limit in that section. (Already determined in each project)
⑤	Switch position and size	Calculate the curve resistance versus radius and the speed limit in that section.
⑥	Signal position and signal indicated speed	At what speed (km/h) can trains travel ahead of the signal. Enter the maximum speed the signal can indicate.
⑦	Train length	A train performance curves indicates the center of the train. In passing a speed limit section, the train length needs to be considered.
⑧	Air resistance	Actual measurements are used. For example, in the case of Tokyo Metro, the following equation holds: $R = 1.645 + 0.0491 V + 0.001221 V^2$
⑨	Train weight and capacity	Assume an average weight of about 55 kg per person for calculation.

Table 23 Input Data for Preparing Train Performance Curves

3.4 Cautions in Checking Train Performance Curves



No	Check point	Risk in the event of inadequacies
①	Are speed limits for curves appropriate?	Danger of derailment or rollover due to overspeeding
②	Are speed limits for switches appropriate?	
③	Are signal speeds set to speed limits or less?	
④	Is a margin provided for setting the travel time?	Cause of train delay. Train delay cannot be restored.
⑤	Is travel time set with a margin?	
⑥	Is car performance data accurate? (Acceleration and deceleration performance)	Accurate travel time cannot be calculated.
⑦	Is track condition data accurate? (Curve and gradient data)	

Table 24 Cautions in checking train performance curves

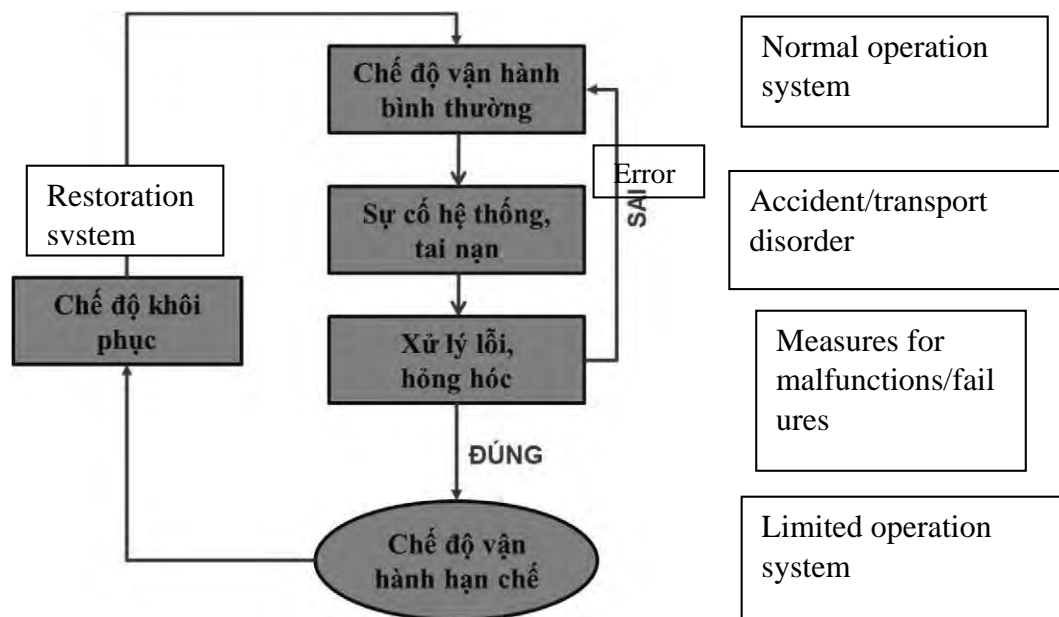
4. Methods (Plans) to Restore Disrupted Train Operation

There is a possibility that all transportation systems are disrupted due to transport disorders, and hence the most effective train operation restoration plan must be developed to ensure safe and effective operation and provide high quality services to passengers.

The transport disorder response process includes the following items:

- Analysis of transport disorders and the prediction of possible accidents
- Analysis to determine restoration measures (location, time, etc.)
- Solution of transport disorders (usage of driving skills, crossovers, passing tracks, etc.)

The following flow chart shows a model to deal with transport disorders reducing the effects on train transportation.

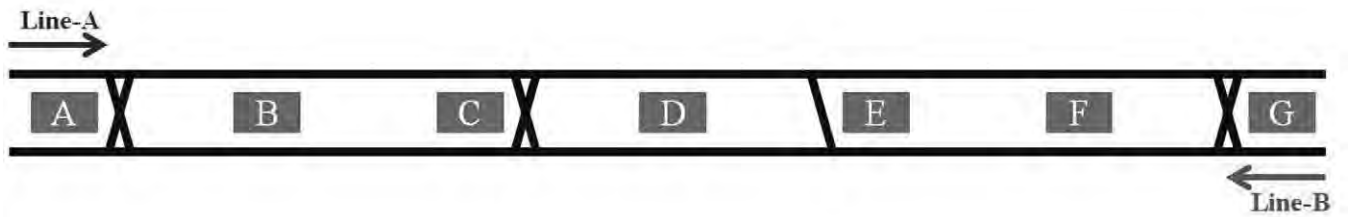


Restoration plans for the following 2 cases shall be considered:

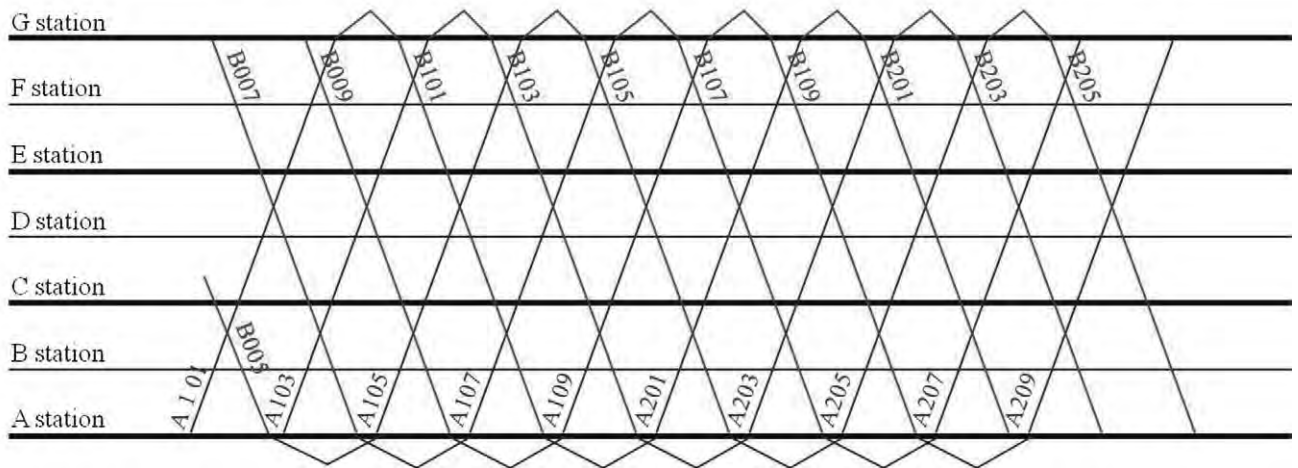
- Case of a slight delay
- Case of a serious delay

4.1 Case of a Slight Delay

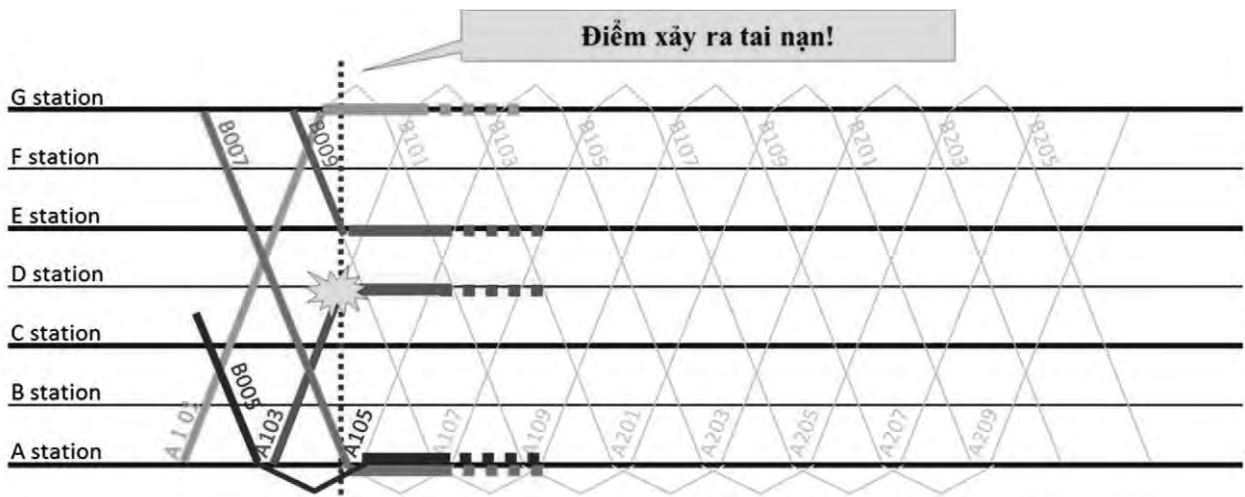
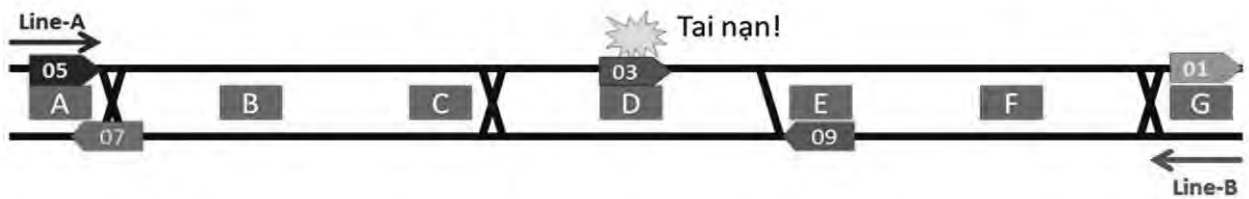
The following line is assumed:



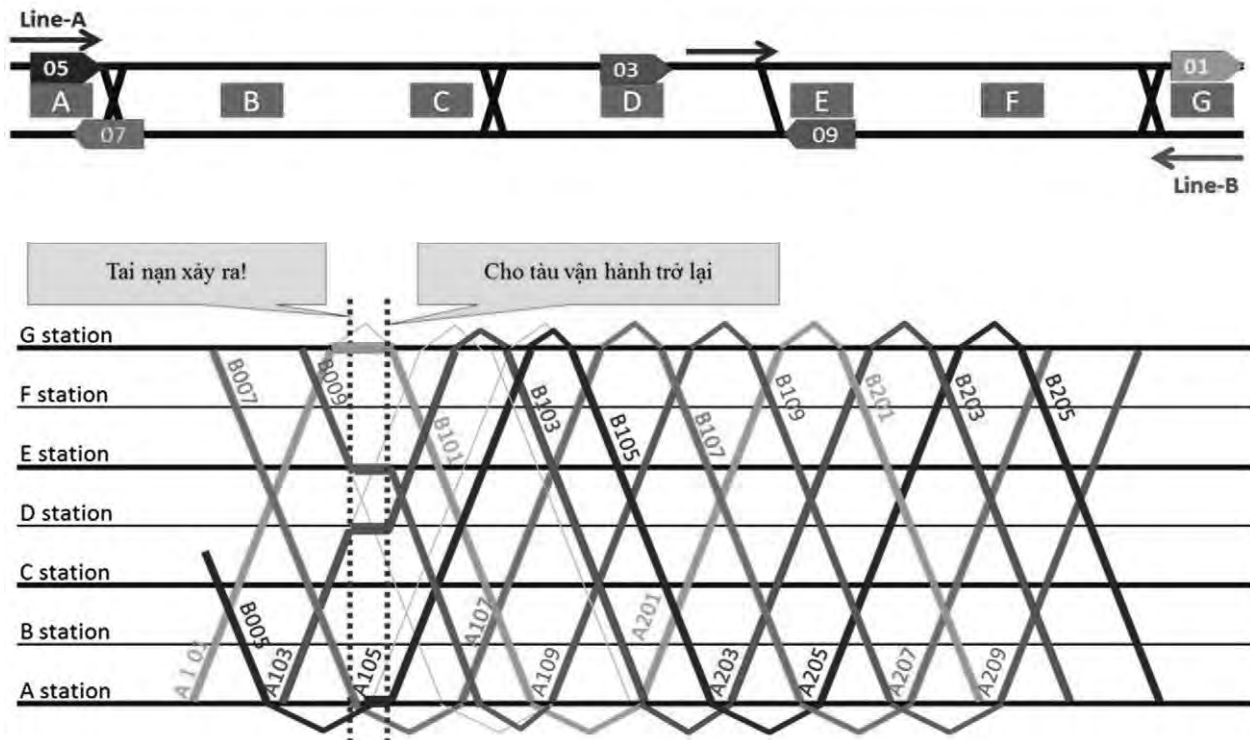
The train diagram is as follows:



It is assumed that Train A103 had an accident at Station D, and its operation is suspended.



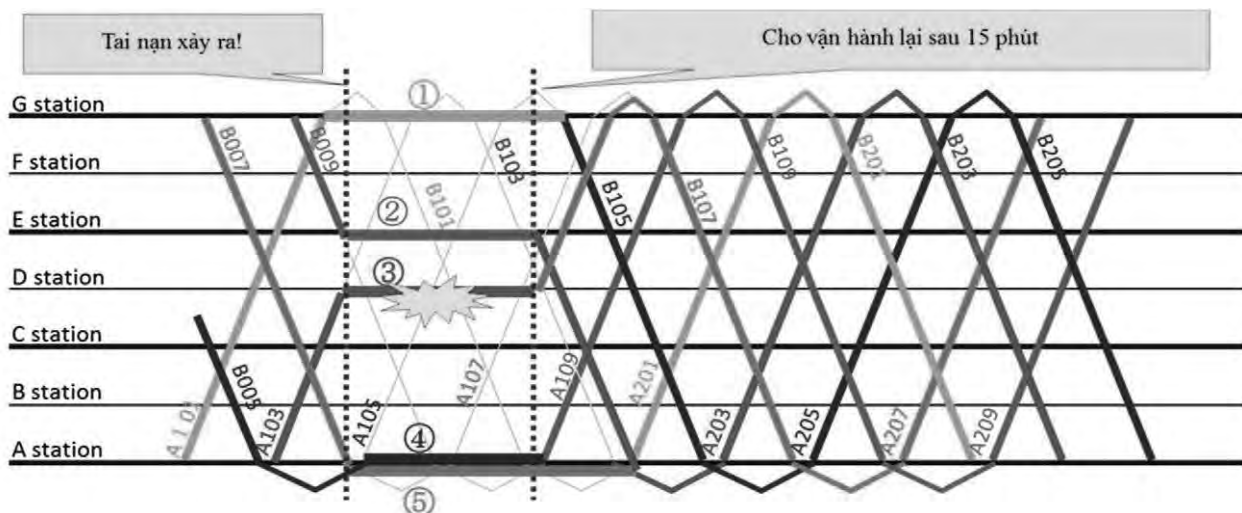
If the accident is solved in a short time, restore train operation as originally planned. (Refer to the figures below.)



4.2 Case of a Serious Delay

a. Method to change operation numbers (operation transfer)

In the case of a delay of 15 minutes, for example, this method changes the train number to that corresponding to the operation status of 15 minutes after the accident.

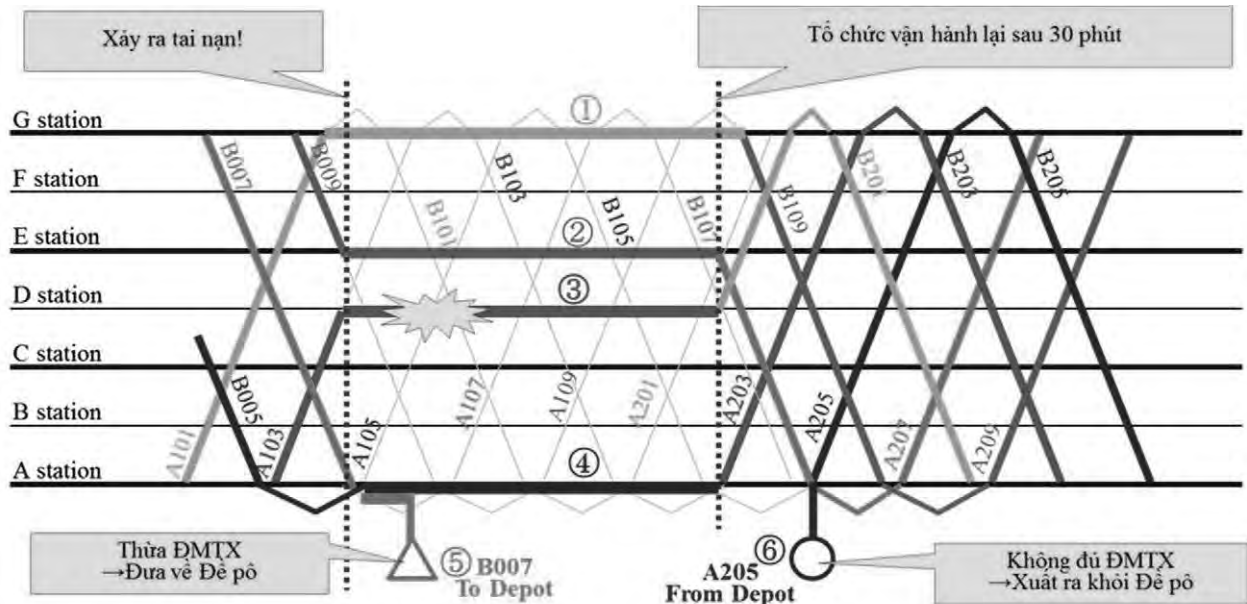


- Make adjustment as shown in the above figure to change operation numbers.

A103 → B107; B105 → A109; A101 → B105; B009 → A203; B007 → A201

b. Method to use cars in a rail yard

It is assumed that, for example, there is a rail yard at Station A. A serious accident causes the suspension of train operation. After restoration from the accident, there should be a plan to instruct operation as originally planned.

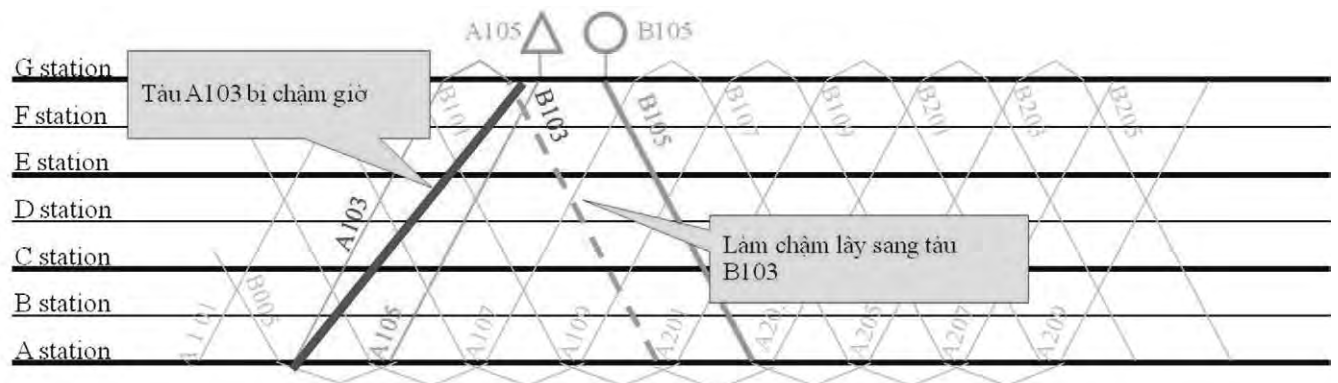


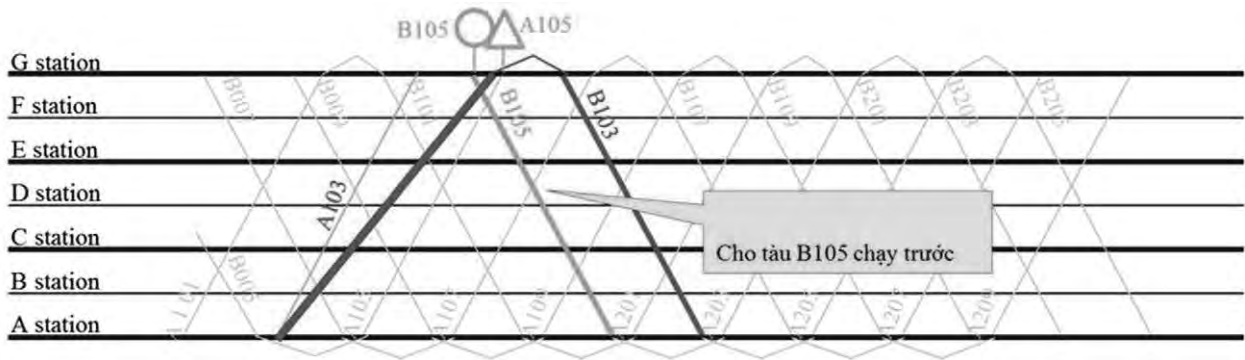
Instructions (as shown in the above train diagram):

- Return Train B007 to the depot and stop other trains at stations to wait for restoration from the accident.
- After the completion of restoration from accidents/transport disorders, submit an appropriate adjustment plan based on train schedules. As mentioned above, change operation numbers and use cars in depots.

c. Method to change the order of train operation

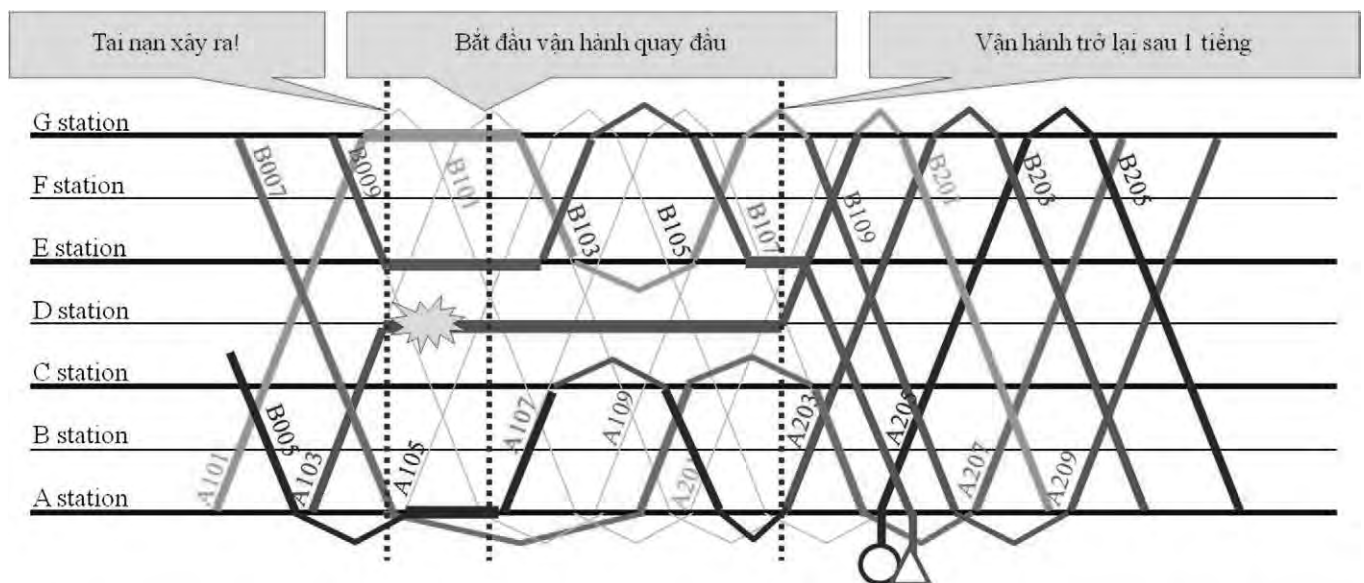
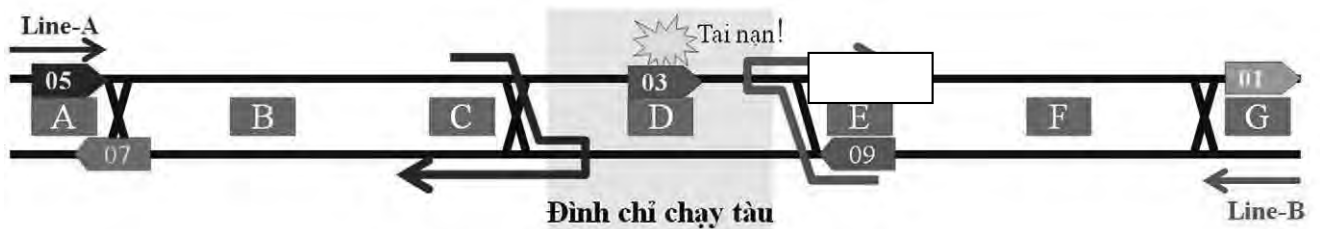
Assume that for example there is a rail yard at Station G.





d. Method to suspend train operation in some sections (turning back operation)

In the case where restarting operation takes a long time, restart operation in sections except the accident section. It is called “turning back operation.”



VII. Implementation Organizations

1. Train Operation Control Department (HQ)

- Complying with national laws and ordinances, company regulations and this manual, it gives advices on operation plan development and implements them.
- It develops train operation formats (including those for preparing driver work shifts, train operation reports, etc.).

- It checks each Unit in implementing approved operation plans.

2. OCC

- Based on approved operation plans, it develops operation plans and operation restoration measures in the event of accidents/transport disorders.
- It checks operation plan implementation, preparing daily operation status reports to be submitted to Train Operation Control Department.

3. Driver Management Center

- It implements company-approved operation plans as planned.
- It reviews the plans, submits proposals to improve them, and implement the results.

4. Train Operation Plan Implementation Departments

- Based on approved operation plans, they develop work implementation plans for their own departments to avoid having an effect on the operation plans.

VIII. Evaluation of Train Operation Plans

Train operation plan development is a long and complicated process and includes many issues. The inspection and evaluation systems of developed train operation plans are hence needed to ensure technical safety and effects as well as passenger convenience.

1. Technical Evaluation of Train Operation Plans

- Consistency of operation intervals and operation speeds with line facilities, cars, equipment, etc.
- Conformity of personnel plans and train operation plans to ensure train operation as planned.
- Consistency of train operation plans with civil engineering, equipment, car, and other maintenance plans
- Is data entered into “Train Operation Control System” consistent with actually implemented train schedules?

2. Evaluation of the Passenger Convenience of Train Operation Plans

- Train operation plans for morning and evening rush hours

- Consistency of train operation plans with the lifestyles of capital residents (For example, resident demand for using public transportation systems till late at night, train operation plans for holidays, new year days, days off, etc.)
- Operation intervals
- Stop time at stations

Appendix

1. Information on Stations

a. Stations of Line 2A (Cat Linh-Ha Dong)

No.	Station name	Distance in km	Type	Siding (side track)	Junction with other lines
1	Cat Linh	Km 0-18,58	Overhead	○	Line 3
2	La Thanh	Km 0+912	Overhead		
3	Thai Ha	Km 1+840	Overhead	—	
4	Lang	Km 2+875	Overhead		
5	National University (Thuong Dinh)	Km 4+125	Overhead	○	Line 2
6	Vanh dai 3	Km 5+169	Overhead	—	
7	Thanh Xuan 3 (Phung Khoang)	Km 6+620	Overhead	○	
8	Ha Dong Bus Terminal (Van Quan)	Km 7+745	Overhead	—	
9	Ha Dong	Km 8+975	Overhead	—	
10	La Khe	Km 10+210	Overhead	—	
11	Ven Khe	Km 11+633	Overhead	○	
12	Yen Nghia	Km 12+660	Overhead	○	

b. Stations of Line 2 (Nam Thang Long-Tran Hung Dao)

No.	Station name	Distance in km	Type	Siding (side track)	Junction with other lines
C1	Nam Thang Long	Km 0-023	Overhead	○	
C2	Ngoai Giao Doan	Km 1+135	Overhead	○	
C3	West of lake Tay	Km 1+890	Overhead	—	Line 4
C4	Buoi	Km 3+509	Underground	○	
C5	Quan Ngua	Km 5+210	Underground	—	Line 5
C6	Bach Thao	Km 6+552	Underground	—	
C7	Ho Tay	Km 7+289	Underground	—	

C8	Hang Dau	Km 8+399	Underground	—	Line 1
C9	Lake Hoan Kiem	Km 9+864	Underground	—	
C10	Tran Hung Dao	Km 10+808	Underground	○	Line 3

c. Stations of Line 3 (Nhon-Ga Ha Noi)

No.	Station name	Distance in km		Type	Sidin g (side track)	Junction with other lines
		Platform 1	Platform 2			
S1	Nhon	Km 10+145		Overhead	○	Line 7
S2	Minh Khai	Km 11+275		Overhead	—	
S3	Phu Dien	Km 12+448		Overhead	—	Line 6
S4	Cau Dien	Km 13+280		Overhead	—	
S5	Le Duc Tho	Km 14+405		Overhead	○	Line 4
S6	National University	Km 15+435		Overhead	—	
S7	Ha Temple	Km 16+680		Overhead	—	
S8	Cau Giay	Km 17+825		Overhead	○	
S9	Kim Ma	Km 19+022	Km 19+023	Underground	—	Line 5
S10	Cat Linh	Km 20+022	Km 20+543	Underground	—	Line 2A, BRT
S11	Van Mieu (Confucian Shrine)	Km 21+396	Km 21+414	Underground	—	
S12	Hanoi Railway station (Ga ĐS HN)	Km 22+100	Km 22+115	Underground	○	Line 1

1. Major Operational Specifications of Urban Railway Lines

Technical characteristics		Specifications			
		Line 2	Line 2A	Line 3	
1. Common information	Total line length (Đường đôi)	11.5 km (Underground 8.5 km, Overhead 3 km)	13.1 km (Overhead)	12.5 km (Underground 4 km, Overhead 8.5 km)	
	Gage	1,435 mm	1,435 mm	1,435 mm	
	Maximum gradient	Main line 35‰		Main line 35‰	
	Minimum curve radius	Main line 300 m, depot inspection yard line 160 m.		Tunnel 500 m, overhead 200 m, depot inspection yard line 90 m, and crossovers	
	Number of stations	10 (underground 7, overhead 3)	12 (overhead 12)	12 (underground 4, overhead 8)	
	Traction power	1500 V DC	750 V DC	750 V DC	
	Overhead contact wire	Overhead wire system	Third rail	Third rail	
2. Operation method Operation speed	Traffic direction	Right-hand side	Right-hand side	Right-hand side	
	Maximum design speed	120 km/h	110 km/h	110 km/h	
	Stop time at stations	20 - 50 s	20 - 50 s	20 - 50 s	
	Maximum operation speed	Overhead	90 km/h	90 km/h	80 km/h
		Underground	80 km/h	(overhead)	80 km/h
	Depot operation speed	15 km/h	15 km/h	15 km/h	
Main line operation speed	35 km/h	35 km/h	35 km/h		
3. Operation plan	Number of train cars	Initial stage	4 cars (Tc-M-M-Tc)	4 cars (Mc-T-M-Mc)	
		Later stage	6 cars (Tc-M-M-T-M-Tc)	5 cars (Mc-T-M-T-Mc)	
	Daily operation hours	5:00 - 23:30	5:00 - 23:00	5:00 - 23:00	
	Operation interval during rush hours (initial)	5 min	6 min	7.5 min	

2. Business plan for station area

According to preliminary design of Line 2A, the demand forecast per day at initial stage is 259,400, the highest number in peak hour is 13,400 passengers, daily operation ridership at later stage is 925,300. Thus, Line 2A shall be a solution for mass transit of passengers connecting the downtown area of Hanoi City and Ha Dong. Along this line’s alignment, there are many urban areas, apartments, commercial centers, schools and offices, etc.

With an aim of attracting passengers to use urban railway system via improving the service quality by providing different utilities surrounding stations, along the line, the Company plans to launch business along the line and in adjacent areas of stations by the following methods:

a. Spacial business

The Company shall construct and install kiosks (fast food, drinks, stationeries, etc.) and lend them; or the Company shall assign another organization to implement, however, it is required to make sure that the spacial business shall not have impacts on fare business.



METRO'S (Kiosk at Omote-sando Station)



b. Business in position installation of fiber cable, internet, and Wi-fi line

The Company uses land areas beneath (or over) the piers for providers installing fiber cable, internet, and Wi-Fi line. However, it is necessary to make such installation does not influence in operation.

c. Parking business

Parking lots are considered and invested in appropriate areas in order to appeal passengers surrounding the stations, who use private modes to the station.

By promoting“Park and Ride”method, both usage of parking lots and usage of railway will be fostered.

Hanoi City People Committee

THE SOCIALIST REPUBLIC OF VIETNAM

Hanoi Metro One Member LLC

Independent – Freedom – Happiness

DRAFT

LABOR REGULATIONS

HANOI METRO ONE MEMBER LIMITED LIABILITY COMPANY

CHAPTER I GENERAL REGULATION

Article 1. Legal basis and references

- Labor Code 10/2012/QH13 dated 18/6/2012;
- Decree No. 41/CP dated June 6, 1995 of the Government on giving detailed stipulations and guidance on the implementation of a number of articles of the labor code on labor discipline and material responsibility;
 - Decree No. 33/2003/ND-CP dated April 02, 2003 of the Government amending and supplementing a number of articles of the Government's Decree No. 41/CP dated June 6, 1995 of the Government;
 - Decree No. 45/2013/ND-CP dated May 10, 2013 of the Government detailing a number of articles of the Labor Code on working time, rest time and occupational safety and hygiene;
 - Circular No. 19/2003/TT-BLDTBXH of September 22, 2003, guiding the implementation a number of articles of the Decree No.41/CP dated June 06, 1995 and Decree No.33/2003/ND-CP dated April 02, 2003 of the Government
- Other relevant legal documents.

Article 2. Purpose and requirement

Labor regulations of Hanoi Metro One Member Limited Liability Company (hereafter referred as to Labor Regulations) are to:

- Educate officials and employees to promote a sense of organization and discipline, enhance the spirit of responsibility, build up modern and professional working styles, contributing to improve labor productivity, efficiency and prevent from violations of the labor disciplines.
- As a basis for management levels, administration and staff to strictly follow in all activities of the Company; contribute to ensuring compliance with rules and regulations, mechanisms, procedures, etc., ensuring order, discipline, security, civilization and sustainable development of the Company.
- As a basis for resolution of discipline violations, application of material responsibility to adjustment objects having violation manner of the labor regulations.

Article 3. Scope of regulation and subjects of application

- *Scope of regulation:*

The Labor regulations include provisions on working time and rest time; stipulation on order and behavior at work; safety regulations, occupational health and hygiene and protection of intellectual property, business secrets, violations of labor discipline, labor discipline resolution, and material responsibility uniformly applied in the Company

- *Scope of application:*

- Employers;
- Employees working in the subordinate units of the Company under the regime of labor contract (definite term, indefinite term, seasonal basis or certain work requirement) or are in probation period and vocational training in the company;
 - Those who are in management positions in the Company according to appointment regime, not follow the labor contract periods (President, General Director) are required to comply with labor regulations within their responsibilities.

Article 4. Term interpretation

In this labor regulation, the following terms are understood as follows:

- **“Company”**: Are Hanoi Metro One Member Limited Liability Company.
- **“Officials, employees”**: in each context, are understood to be the people who work in the company, including employees under labor contract (including official and staff are in the probationary and vocational training period, wage paid and under the management and administration of the Company) or under appointment regime.
 - **“Management and control levels”**: are President of Board Members and General Director, Deputy General Director, Chief Accountant and Auditor of the Company, Leader of the subordinate units
 - **“Headquarter”**: is the highest control center of the Company.
 - **“Subordinate Units”**: are Departments, Centers, Workshops at Headquarters and other subordinate units of the Company.
 - **“Units which directly manage employees”**: Departments, Centers, Workshops, Profession groups and other units which are entitled to manage employees directly.
 - **“Violations”**: mean acts contrary to the provisions of laws, mechanisms, internal regimes of the Company specified in the Labor Regulations, and regulations on discipline and material responsibility, regulations on resolving personal responsibility, collective responsibility for re-activities in the Company and other relevant documents.
 - **“Employer”**: is the Company whose legal entity representative has authority to use employees are President and the person who is authorized by the President in accordance with the Company Charter of organization and operation or the internal mechanism of the Company
 - **“Persons who directly manages employees”**: are the Leaders of Departments, Centers, Workshops at Headquarters and other subordinate.
 - **“Violation repeat”**: are cases that workers repeat violations which are disciplined but such discipline is not yet cleared under the provisions of the labor law and the Labor Regulations.
 - **“Discipline execution duration”**: is the time prescribed by law and the Labor Regulations. When the discipline duration expires, the violators shall not execute the discipline.
 - **“Labor discipline violation”**: (hereafter referred to discipline violation) is the behavior of the employees that is not complied with the standards and requirements stipulated in the Labor regulations and other related documents, causing influence in the order, discipline, safety and assets in operation and business activities of the Company.
 - **“Discipline execution”**: is the action that the person who has the right to apply disciplinary against those who commit violations to comply with the order and procedures prescribed by law and the labor regulations on discipline of the Company.

Article 5. Responsibility for implementation of the Labor Regulations

The following objects within their functions and duties are responsible for strict implementation of the Labor Regulations:

- The Employees;

- The Employer and Manager directly manage the employees;
- Management and control levels;
- The Units directly manage labor management.
- The Party organizations, Trade Unions, Youth unions in the Company system in coordination with the management levels to regularly educate and motivate the employees to better perform the Labor Regulations.

CHAPTER II WORKING HOURS AND BREAK HOURS

Section 1 WORKING HOURS

Article 6. Working hours

- Average working hours of office staff shall not exceed 08 hours per day or 44 hours per week. From 8:00 to 12:00 at noon and from 13:00 to 17:00.; from Monday to Saturday noon when the end of the working hours in the same week..
- The Company may require working hours not exceeding 48 hours per week.
- Working hours, starting time, closing time and break time of each work type in the unit, operation and maintenance division, and OCC shall have separate regulations.
- Working hours in both daytime and night time shall be decided by the leader of unit or division.

Article 7. Overtime working

- Overtime working is the working period besides the normal working hours specified in Article 6 of the Labor Regulation.
- Depending on characteristic and time requirement, the employer is entitled to employ the employees to work overtime upon satisfying the following conditions:
 - With the consent of the employee;
 - In case of work inquiry, overtime working shall not exceed 4 hours per business day, 8 hours per holiday, 200 hours per year, in some special cases; working hours shall not exceed 300 hours per year.
- Overtime working in the special cases

The employer has the right to require the employees to work overtime on any day and the employees shall not be entitled to decline in the following cases:

- Performing the mobilization order to guarantee the duties of national defense and security in the state of emergency on national defense and security as prescribed by law;
- Performing work to protect human life and property of the agencies, organizations and individuals in the preventing and surmounting the consequence of the natural disasters, fire, epidemics and disasters.

Article 8. Overtime working application procedure

The procedure of overtime working application shall be stipulated separately.

Section 2 BREAK HOURS

Article 9. Break during working hours and after shift

- Normal break during working hours from 12.00pm to 13.00pm.

- The employee who works by shift is entitled to a break at least 12 hours before starting another shift. Break after shift shall be stipulated separately.

Article 10. Weekly rest

In every week, each employee shall be entitled to a rest of at 24 consecutive hours (Saturday and Sunday). In special cases, due to the work cycle, the employee cannot take weekly rest, and then the employer shall ensure that employees are entitled to at least 04 days/ 01 months on average. Regulations on specific weekly rest of each work type in the unit, operation and maintenance division, and OCC shall be made separately.

For officials and staff who are working in shift mode, weekly rest shall be alternatively arranged on other days of the week.

Article 11. Annual leave

- An employee who has 12 months in full to work for the Company shall be entitled to annual leave fully paid on basic salary.

- If an employee works less than 12 months, annual leave shall be calculated by ratio relatively to the working duration.

- Annual leave shall be increased by work seniority. Every 05 working years, the number of annual leave of the employee shall be increased 01 day accordingly with basic salary paid.

- For specialized officials from state agencies and enterprises moved to the Company, the working duration of in the previous agencies and enterprises (based on Personnel Records/Social Insurance Number etc.) shall be considered by the Company to calculate in the work seniority to enjoy annual leave.

- The employee is entitled to negotiate with the employer to take annual leave in several times. The employee who works in remote place is entitled to add up the annual leaves of two years and take all in one time if he or she requires. If annual leaves of three year are taken in one time, it is required to obtain the approval from the employer. However, annual leave must be registered in accordance with monthly plan and quarterly plan to enable the unit which manage directly employee arranges personnel in principle not to influence in the unit's work and maximally deal with annual leave requirements of the officials and employees, unless unscheduled cases.

- In case the official is required to postpone labor contracts to take military service; expiry of the labor contract; unilateral termination of the labor contracts, jobless due to structural changes in technology, dismissal, retirement, death, shall be paid for the annual leaves that are not taken. The employee is entitled to take fully paid leave.

Section 3

HOLIDAY LEAVE, PERSONAL LEAVE AND LEAVE WITHOUT PAY

Article 12. Holiday and Tet leaves

An employee shall be entitled to have days off fully paid on the following public holidays:

- Calendar New Year Holiday: 01 day (the first day of January of each calendar year);
- Lunar New Year Holidays: 05 days (the last day of the current year and 4 days of new year)
- Hung Kings Commemoration Day (the 10th of March of each Lunar year)
- Victory Day: 01 day (the 30th of April of each calendar year);
- International Labor Day: 01 day (the first day of May of each calendar year);
- National Day: 01 day (the second day of September of each calendar year).

If the above leaves are coincident with weekly holidays (Saturday or Sunday), the Employee shall take leaves in next days.

Article 13. Personal leaves with full pay

An employee may take leave for personal reasons but fully paid in the following cases:

- a) Marriage: 03 days;
 - b) Marriage of children: 01 day;
 - c) Death of parents, wife or husband's parents, wife or husband or child: 03 days.
- The official and employee are required to inform the employer when taking the above leaves.
 - In addition to the provisions of Clause 1 and Clause 2 of this Article, the employee may discuss with the employer to take unpaid leave.

Article 14. Personal leave paid by social insurance

- The employee is in accident, sickness, or maternity is entitled to take leaves for treatment. The accident, sickness or maternity leaves shall be paid by social insurance by current law. Accident, sickness, and maternity leaves must be certified by the authorized medical agencies in accordance with law on social insurance. The employee who takes accident, sickness, and maternity must be reported in writing or other form as prescribed procedure.
- In case the employee takes annual leave for sick leave, the wages paid to those holidays similar to provisions on annual leave wage, i.e. time-base payment without allowances.

Article 15. Personal leave without pay

Employee takes unpaid leave in the following cases:

- Employees are not entitled to annual leave or annual leaves are fully taken.
- An employee who may take 01 day unpaid leave must notify the employer when his grandparents, natural brother or sister dies; parent or mother gets married; natural brother or sister gets married. In addition, in the case of legitimate reasons (family issues, health reasons, participation in self-study program not assigned by the company), employees may apply for a leave without pay.
- Based on the ability to work arrangement and adjustment, the General Director (for Headquarter and the Leaders of the subordinate units)/Leader of subordinate decide on unpaid leave after consulting with the unit which directly manages the employee.
- Time leaves without pay are not included in working time to consider salary increase, seniority, commendations, related welfare benefits but entitled to benefit rights under the provisions of the General Director (if any).

CHAPTER III RECRUITMENT – WORKING – TRAINING

Article 16. Work description and work allocation

- Assigned works are works specified in the labor contract and its appendix and/or work description and/or decision on the appointment and assignment and/or functional – duties– power description table.
- The employee is recruited to perform the assigned works and strictly follow labor laws and labor contract appendix (if any), the collective agreement, the Labor regulations and working rules, and other current policies of the Company.
- Depending on business and operation demand of the Company as well as the skills and experience of the employees, the Employee may be required to undertake and perform other duties and works that are not stated in the contract labor and/or Work description for assigned work position and labor contract appendix (if any). In all time, the employee must work for the Company in diligent, hardworking and honest manners and strictly follow all requirements or directives and decisions of the Company and make great effort to complete successfully the duties and tasks assigned.

Article 17. Regulations on the Employee

- The employee who is assigned shall understand standards and requirements of the work. Moreover, he has to grasp firmly policy, regulations, rules, procedures related to efficient work performance. The Employee is entitled to request direct management level to clarify the contents and requirements for the work and the relevant information before taking.

- The Employee when performing work must be in compliance with working rules, the technological process, and performing work in accordance with requirements of the direct leader or higher level (if needed) to ask for instructions. The Employee should not do things that do not belong to their functions, duties, except in an emergency to protect the property or reputation of the Company or when is ordered by superiors.

- The Employee shall comply with the reporting regime under the provisions on results of the work assigned and is responsible for the content, truth, accuracy, completeness and on-time of the report.

- The Employee shall participate fully and timely in the meetings, events, conferences and learning courses held by the Company when the Employee is required to attend. Where the employee is unable to attend because of a legitimate reason, he must ask permission from the leader for his absence in advance. If he does not attend the meeting that is noticed, without the consent of his superior, he shall be considered to be off work without permission. The cases of coming late in meetings, events, learning course which has been notified in advance are considered as late hours and be considered mental attitude in the period under review and thus will affect emulation results of the employee.

- Coming late to the meetings, events, and learning course which is already notified in advance are considered to be late at work and considered regarding working spirit and attitude in the period under review and will impact on the results emulation of workers accordingly.

Article 17. Recruitment

Staff recruitment sequence, procedure and contents shall be stipulated in detail separately.

Article 18. Probation contract

- The employee shall undergo a probation period, fulfill tasks and plans under probation and prove to be able to meet the requirements of the Company. The employee will sign a probation contract with the Company including but not limited to the followings:

- Job title;
- Salary level;
- Probation duration:
 - Within 60 days for works that require college education or further;
 - Within 30 days for works that require vocational intermediate education, technical workers, and professional workers.
 - Within 6 working days for other works.

- The employer and the employee may reach the agreements on the probation, the rights and obligations of both parties during the probation.

- During the probation, each party is entitled to terminate the probation without prior notice and compensation, unless otherwise provided by the probation contract.

Article 19. Official labor contract

- At the end of the probationary period, the Employees will be evaluated and if the employee meets the standards and requirements of the Company, the probationary period will be terminated and the employees will be recruited officially by the Company. *(According to the recruitment process)*

- After the successful completion of probation period. Employees will be formally recruited by the Company in the form of labor contract and labor contract appendix (if any). Depending on the natures of work that the company will choose the form of appropriate labor contract to sign with the Employer. The probation period will be calculated on the seniority of the Employee.

Article 20. Labor contract termination

- ***Official labor contract termination.***

Labor contract shall terminate in the following cases:

- The labor contract expires and the Company does not sign again;
- The work under the labor contract is done;
- Both parties agree to terminate the labor contract;
- The employee satisfies pension age by Vietnam Law;
- The employee is disciplinarily dismissed or ask for termination before the expiry date and the Company agrees with it;
- The employee dies, is declared dead, missing by the Court;
- The employee is condemned to imprisonment or suspended sentence or prohibited from doing the work in the labor contract according to the legal judgment and decision from the Court.

- ***Unilateral termination of the Labor contract***

The Company is entitled to unilaterally terminate the labor contract in the following cases:

- The employee regularly fails to complete the works according to the labor contract;
- The employee is disciplinarily dismissed in accordance with the Company regulation;
- The employee suffering from sickness or in irresistible condition cannot work continuously for the company in the following cases:
 - + The employee working under indefinite labor contract but leave duration of 12 consecutive months
 - + The employee working under definite labor contract from 1 to 3 years but leave duration of 06 consecutive months
 - + The employer working under casual labor contract or regular labor contract with term under 12 months but leave duration of over one half of the contract term

When the employee recovers, he/she may be considered to conclude the new contract.

- Due to restructure, business transformation, change of operating model, due to natural disasters, fires, economic crisis or other irresistible reasons causing the Company to narrow the operating model, and downsize the labor.

- ***Notice before labor contract termination***

- When unilaterally terminating the labor contract, the Company must notify the employee:

- At least 45 days for indefinite labor contracts;
- At least 30 days for definite labor contracts;
- At least 03 working days for the case prescribed in Point b Clause 1 this Article and for casual labor contracts or regular labor contracts with term under 12 months.

- For the employee is subject to disciplinary dismiss, it is not necessary to notice in advance as above. Dismissal decision takes effect immediately after the decision is signed or according to specific time stated in the decision.

- The party that unilaterally terminates the labor contract may waive unilaterally termination of the labor contract before expiry of notice.

- When the advanced notice period expires, either party may terminate the labor contract.

- In case of unilateral contract termination, if one party violates the advance notice time, the violation party must be paid a compensation for the other party an amount equivalent to the employee's salary of the unnoticed days. For the employee, the compensation amount shall be deducted to the severance or the last month salary, unless otherwise decided by the General Director.

- Procedure of terminating the labor contract shall be regulated separately.

- ***Obligation of the Company when unilaterally terminating the labor contract***

- Within 07 working days as from terminating the labor contract, both parties are responsible to fully pay the amounts related to each party's interests; in special case, this time limit may be longer if necessary but must not exceed 30 days.

- The Company is responsible to complete the procedures for certifying and returning the social insurance book and other papers of the employee that is kept by the Company.

- Severance pay for the employee shall be paid by the Company in compliance with the current regulations of the State.

Article 21. Training

- Based on operational demands and existing human resources, the Company prepares training budgets and plans to improve professional qualification and skill for the employee. Human resource division shall be responsible for implementation of annual training plans approved by the General Director.

- The employee is responsible to participate fully in training courses and make sure to attend and complete the course with a minimal result. Procedures and requirements are stipulated in detail in the Training rules of the Company.

Article 22. Training commitment

- During the time working in the Company, if the Employee is assigned by the Company to attend training programs (internal and external) to enhance his knowledge and expertise and to create conditions for professional promotion and development, the Employee shall commit to work for the Company in the certain minimum period under an agreement between two parties (employees may be required to sign a commitment to the Company).

- Procedures and specific requirements are specified in detail in the Training rules of the Company.

CHAPTER IV SALARY AND ALLOWANCES

Article 23. General requirements

- All salary and allowances paid by the Company shall be gross salary i.e. the Employee shall pay insurance fees to the State regulation for the employee such as social insurance, health insurance and unemployment insurance calculated in accordance with salary factor of the Company and the Employee shall pay personal income tax and other taxes incurred (if any) prescribed by the State. The Company will pay fees of social insurance, health insurance and unemployment insurance calculated in accordance with salary factor of the Company under State regulations for the employer.

- Salary payment form will be applied by the Company to each different position at different time and it is subject to change. The Company will notify the Employee in advance the form of payment shall be applied to the position that he is in charge of.

- Detail regulations on each form of salary payment (including overtime salary) and on each type of allowances shall be specified in Salary Rules and informed to the Employees.

CHAPTER V REWARD AND WELFARE

Article 24. General regulations

- Reward

The Employee, who has gained working achievement, well performed assigned tasks and strictly obeyed all regulations of the Company and the unit shall be reviewed for reward. Standard, form, and level shall follow the Reward rules of the Company.

- Welfare

Based on annual business performance results of the Company, the General Director shall decide on welfare payment and payment form (from the welfare fund of the Company) to the employee such as annual vacation, a periodical health examination, visiting, wedding, funeral and policy. Standard form and level of welfare payment shall be executed in compliance with the internal expenditure rules of the Company.

CHAPTER VI COMPULSORY INSURANCE AND OTHER INSURANCES

Article 25. Compulsory insurance

Compulsory insurance as stipulated by the State are social insurance, health insurance and unemployment insurance.

- Every month the Company and the Employees are responsible to settle payments to insurance funds by current law.

- Salary shall be taken as a basis for compulsory insurance contribution and payment allowances for the employee such as employment termination, dismissal, occupational accident, occupational diseases, sickness, maternity, retirement, etc. (based on Labor Contract).

- Monthly contributions as stipulated by the State are follows:

- The Company: Social Insurance: 15%; Health Insurance: 2%; and Unemployment Insurance: 1%

- The Employee: Social Insurance: 5%; Health Insurance: 1%; and Unemployment Insurance: 1%

- The Finance and Accounting Division shall deduct directly from salary to Social Insurance agency. Human Resource Insurance division shall carry out register procedure and receive social insurance book to keep in the Company. Health insurance card shall be delivered to the Employee.

- Beneficial regimes for social insurance contributor shall be pursuant to the regulations on Social Insurance.

Article 26. Other insurance

- Based on the capacity of the Company and the position of the Employee in charge, the Company will participate in other forms of insurances such as Occupational Accident Insurance, etc.

- Standards, rules and commitments shall be in accordance with the Company's regulations.

Article 27. Separate regulations on female employees

- All divisions and subordinate units of the Company (including Headquarter and operation units) shall not require the female employer, who is pregnant from the 7th month and feeding child under 12 months of age to work overtime, work in nighttime and go on business trip.

- The female employee who is in charge of heavy work while being pregnant from 7th month shall be moved to be in charge of the lighter one or 1 working hour reduced but still enjoys full salary.
- The female while is feeding child under 12 months of age shall take a break of 60 minutes a day during working hours with full payment under agreement between the both sides.
- The time the female employee is entitled to take maternity leave before and after birth is 06 months with 100% payment of basic salary by Social Insurance. In case the female employee gives birth to twin or more, from the 2nd child onwards, every child, the mother is entitled to take 01 month leave additionally. The prenatal period of leave shall not exceed 02 months. Upon expiry of maternity leave, if having a demand, the female employees can take further leave but unpaid one under the agreement with the Company and without any social insurance allowance.
- The female employee having 1st child, and 2nd child under 7 years old being sick and treated in hospital, if requested in writing by the hospital for leave to take care of her children, the female employee is entitled to enjoy Social Insurance allowances by law on social insurance.

CHAPTER VII ORDER AND MANNER IN WORKING PLACE SECURITY – SAFETY – HYGIENE

Article 28. General regulations

- All Employees shall be responsible to fully implement obligations to ensure order and manners in working place, security, safety and hygiene in the company.
- The Security team shall directly check and supervise execution of regulations on entry and exit in the Company, and shall be directly responsible for safety of people, property and facilities in the Company.
- While on duty, if violation manners are found out, the Security team shall make a report immediately and send it to the Unit leader and the Administration Department.

Article 29. Order in the working place

- The Employee shall come or leave the work place on time as stipulated. During working hours, the Employee is only allowed to leave the headquarters if required or when permitted by his direct manager.
- In case of working overtime as requested, the employee must obtain approval of the manager, unless otherwise provided by the General Director (Headquarter) and Director (subordinate unit).
- The Employee shall park his private vehicles and company vehicles, which he is assigned to manage, properly in the prescribed place; every means of transport including bicycle, motorcycle, and automobile accessing to the headquarter gates must be compliance with provisions of the Company.
- The Employee is not allowed to receive guests of his private business in the working place, except in special cases but he must obtain consensus of the direct manager.
- The Employee is not allowed to take any assets of the Company (tools and supplies, machinery, equipment, documents, drawings, etc.) out of the Company without the written consent of the competent management level.
- Security team is allowed to check people accessing through to the company gate at any time, if necessary, to ensure safety and security order. In this case, the guard will ask the person needed to be checked to come into the security room to perform checking procedures. The Security

team shall record all cases of coming late and leaving early to report to the Unit's director, Human resources Department and Administration Department (upon request).

Article 30. Working manners

- During working hours, the employee must wear correct clothing or uniform if provided in accordance with the regulations:
- Direct workers working in factories and construction sites must often wear protective clothing and use protective equipment in accordance with the current regulations.
- Employees, production manager, and operation and maintenance manager, etc. must wear in the company uniform as prescribed in the Company's regulations on uniform usage and management
- All behaviors of aggression, disorder and other behavior affecting the work of others, affecting the order in the working place are prohibited by the Company.
- No private works are allowed during working hours. Computer and the company assets equipped to serve the Company's officers are not allowed to use for private purpose.
- Wine, beer and other stimulants are not allowed during working hours in the company.
- The Employee must abide by any direction, administration and responsibility assignment of the person in charge directly. While performing assigned tasks, if facing difficulties, the employee shall report and ask for instruction of the superior level timely.
- The Employee is not allowed to self-announce the press or any agency or other organization in the name of the Company, any information relating to the Company without assignment and authorization by the competent person in accordance with the company regulation.
- Using mass media to spread rumors about colleagues and company leaders is prohibited.
- The Employee must comply with regulations on keeping gracious attitude, and proper respect to colleagues and customers, and giving dedicated instructions and guidelines of processes and procedures for customers and partners as prescribed. It is strictly forbidden to cause trouble and harass customers and partners.

Article 31. Occupational safety

- The Company shall equip sufficient vehicles to ensure safety for the employees working in the Company. The Employees shall be obliged to participate in all classes and courses on labor safety and fire protection held and required to attend by the Company.
- The Employees shall comply with the regulations, procedures, and rules on safety, fire protection, warehouse safety, operation safety of machines and equipment. Fire protection equipment at the headquarters, electrical appliances, computers and other equipped electronic devices shall be used and preserved in compliance with the regime and processes.
- The Employee is absolutely not allowed to use machines and equipment without thorough understanding of the safety rules on the machines and equipment. If the employee breaks the rules and processes causing damages of machines and equipment, the Employee must compensate for damages to the Company and is responsible by law if causing occupational accident.
- The Employer shall use the correct and full protective equipment as prescribed and only operate the equipment when he is in normal health condition, psychological stability and equipment is safe. All machines, equipment and technology in unsafe and damaged condition, or waiting for repair must have warning signs.
- At the end of working hours, before leaving, the employee must turn off electrical appliances and electronic devices of his personal management. Those who last leave must turnoff all electrical appliances and electronic device of the units (except for the devices required to be used constantly as prescribed) and lock the office door.

- The Employees shall promptly report to the person in charge when finding the risk of labor accidents and occupational diseases, toxic or dangerous incidents, and participate in emergency aid and accident remedy at order of the employer.
- When the incident causing unsafe was identified due to the irresponsibility of the concerned person or the commander or insufficient performance of the Company's instructions, the Company will apply discipline to the concerned person and the relevant.

Article 31.Occupational hygiene.

- The functional divisions and the Employee who is directly assigned to use machine and equipment shall seriously follow the periodic inspection, repair and maintenance of machines and equipment in accordance with the regulations and procedures on that machine and equipment; periodic inspection and proposal for renovation and repair of working office in accordance with responsibilities and their duties to ensure environmental hygiene and safety for assets.
- The employee is responsible for maintaining working facilities, arranging materials in neat and tidy order, regularly cleaning the working place; entire the office shall be cleaned regularly. The Employee shall actively participate in general hygiene as assigned and directed by the competent management officer.
- When preparing shift handover (for the units with shift mode) or at the end working hours, the Employee shall perform cleaning for machines and equipment, and working area orderly and after than proceeding full handover to the following shift.
- The Employee must participate in periodical health examinations organized by the Company to make health supervision record and timely find out occupational diseases.

Article 32.Labor protections

- Every year, the Company shall equip labor protection for the Employee depending on working characteristics and conditions.
- The Employee who is equipped with labor projections shall preserve, maintain and use with proper purposes and shall be not allowed to transfer or loan. If the employee loses that labor protection, he shall compensate or shall be penalized according to the rates prescribed by the Company.

CHAPTER VIII

USAGE AND PROTECTION OF ASSETS – PROTECTION OF INTELLECTUAL PROPERTIES RIGHTS, INFORMATION, BUSINESS KNOWHOW

Article 33. Usage and protection of assets.

- Laborers must comply with regulations on usage and protection of communication media, transport modes, machines, equipment and other devices, tools; compliantly following regulations on assets management as stipulated by the government and by the company. It is prohibited to use those assets for private purposes without permission or authorization.
- Organizations, individuals responsible for protecting and using stamp shall keep it carefully under regulations on usage and management of stamp of the Company, as well as related regulations.
- Laborers shall be aware of keeping, maintaining and using Company's assets in right purposes and in effective manner. If there is any loss or damage to the assets due to subjective faults of laborers, they must be compensated under prices calculated by the Company. When there is no demand for usage of the assets, laborers shall proceed to return to the Company upon its regulations. Any asset of the Company to be brought out of the office shall need to comply with regulations in clause 5, 6 in Article 29 of Chapter VII.

- It is prohibited to self move equipment, to de-locate or change structure and specifications of devices or machines without permission/acceptance of authorized managers.
- Assigned staff or officers shall be responsible for monitoring, acquiring and proposing timely maintenance for devices, machines as regulations of the Company.
- Laborers who are working as security guarantees, within their authorities, for the Company shall watch for transport vehicles of staff, officers of the Company, and of customers who park in order to conduct discussions or work at the Company. Any loss, damages on the assets caused by subjective faults of those security people shall be compensated by them.

Article 34. Protection of intellectual property, information and business know-how.

- When working at the Company, subject to the features of works undertaken by laborers, the laborers can be authorized to manage and use assets of the Company and know about special information relating to private issues or sensitive business matters. All tangible or intangible assets or business domination of the Company shall be used under right purposes and authority. Any of activities to leak or disseminate information even accidentally or consciously in organization internally (to irresponsible persons) or to outside without permission of General Director or authorized person shall be regarded as violation to security regulations of the Company.
 - When laborers terminate or temporarily suspend labor contracts with the Company or any time if required by the Company:
 - Laborers shall return to the Company the entire of documents and assets or intellectual property rights ever provided by the Company or by any manners that the laborers have collected during the working duration in the Company, including but not limit to: drawings, designs, reports, technology and technical documents, customer data, price lists, expense calculation sheets, software and computer programs, management, operation and maintenance procedures under both conventional or digital types, data relating to business or commercial activities of the Company. Laborers shall not agree to keep for themselves copies, notes or summaries (even hand-writing) relating to those above contents.
 - Laborers shall not utilize any representing authority they are assigned during the working time for the Company for their individual purposes or for other organizations/individuals or any activities which may directly damage the benefit and credibility of the Company.
 - The Company may notice to any of third party about the existence of this kind of agreement, and shall be eligible for punishing on any violations under the methods which are necessary for the Company to protect its legitimate rights or request on involvement of legal agencies if there is violations that Company verifies as serious ones.
 - Staffs who participate in negotiations, implementation of contracts / commitments between the Company and customer, counterpart, in which there are regulations about information security obligations of the Company, shall be responsible for protecting the information as provisions in such contracts /commitments.
 - It is prohibited for any of information dissemination relating to business strategy, research and development plans, technical norm system, financial analysis data, data relating to future projects of the company, excluding official disclosure documents (promulgated by General Director or authorized persons).

**CHAPTER IX
LABOR DISCIPLINES – DEALING WITH LABOR DISCIPLINES AND PHYSICAL
RESPONSIBILITIES**

Article 35. Behaviors considered as violations to labor discipline

- Not to follow working time, resting time:
- Leave works without reasons or unacceptable reasons.
- Not comply with working time; going out of office during working hours for individual matters without asking for permission or without proper excuses.
 - Often utilize working time for individual matters without permission of respective labor managers.
 - Other violations such as working time, resting time.
 - Violations about order at Working office.
 - Often going to work without wearing proper clothes and office ID as regulations.
 - Causing disorder situation at working place or other behaviors which can affect other people's works, do not participate in meetings or not punctually joining in meetings, or quit meetings without reasonable excuses, or any other behaviors possibly causing the order at the head office; do not ensure proper attitude and respect to colleagues, even towards staff working at subordinate organizations of the Company.
 - Not ensure proper attitude and respect to customers, causing inconveniences to customers and to subordinate organizations, affecting credibility and image of the company.
 - Drink beer or alcohol at working places (except for events organized by the company) or being drunk during working hours;
 - Theft, corrupt, playing gambles, engage in fighting causing injuries, using narcotic, involving in social evils and any other illegal activities, which are opposite to customs and social morality within the working area.
 - Other violations relating to orders and culture at head office.
 - Violations relating to labor safety and labor hygiene
 - Not comply with regulations on safety and fire and explosion prevention, safety for stores, workshops, safety in operation, safety at controlling offices, computer rooms and other electronic equipment and machines.
 - Use and maintain wrongly for electrical devices, computers and other equipment that the company prepare as required. Not check, repair, maintain equipment and devices as required procedures for those respective devices periodically in accordance with assigned responsibilities.
 - Bring weapons and explosion substances into head office, which is out of authority of the company.
 - Often not arrange working devices/tools, documents in order and hygiene condition, or having other behaviors causing problems of sanitation of working place, and head office. Not implement public sanitation works at head office as respective functions and responsibilities.
 - Other violating behaviors relating to labor safety and labor sanitation.
 - Violating behaviors relating to protection of assets and business know-how, intellectual property
 - Not comply with regulations on using and protecting assets of the Company or using those assets into private purposes.
 - Disclosure information which are managed under confidential scheme, intentionally approaching confidential information which is not under functions, authorities and responsibilities as regulations of the Company.
 - Having theft behaviors, corruption, disclosure of technology or business know-how, or other behaviors causing serious damages in terms of assets, benefits; affecting credibility and brand name of the company.
 - Violating behaviors relating to operation and work relationship
 - Shield, create favorable conditions or not prevent or not report to competent authorities even when finding discipline violations of subordinate staff.

- Involve illegally into works of subordinate staff, causing misunderstanding to work results.
- Victimizing directly subordinate staff.
- Not report to competent authorities about opinions of subordinate staff, of related individuals and organizations, who must be asked for comments as regulations on responsibilities.
- Abuse position, authorities to appraise wrongly the performance of staff, providing untrue information about any staff.
- Not execute as responsibilities or execute insufficiently tasks assigned by competent authorities, not obey work transfer order made by employer because of unacceptable excuses.
- Causing difficulties and obstacles, or not creating necessary conditions or causing delay of colleagues' works when they are dealing with works relating to their respective functions and responsibilities.
- Not report timely about any unfavourable changes for operation of the Company which is within the limit of respective responsibilities.
- Other violations relating to operation and work relationship.
- Violating behaviors relating to the sufficiently compliance with rules and technology procedures, technical standards and safety ones during the operation, maintenance of UR system.
- Violations to accounting, financial works
- Protect, store and using accounting documents not in compliant with regulations, causing loss of documents. Discard accounting documents, accounting books, financial statements when regulated duration for storing has not been over or above the authority,
- Make counterfeited accounting documents, accounting books; prepare perjury of data, providing untrue things, forcing another persons to counterfeit documents, books, and prepare perjury data and untrue accounting data.
- Make or submit financial reports not in timely and proper manner as regulations of accounting system.
- Postpone, elude or not provide documents, proofs and data as requirements of inspection, monitoring, and internal audit (if any) under process.
- Other violating behaviors relating to accounting and financial works, domestic settlements, import-export settlements, commercial donations, inspection, monitoring and internal audit (if any).
- Violating behaviors relating to IT
- Not comply with regulations, procedures on safety, system security of IT of the government and of the company.
- Causing on the thoroughness of systems, computer network, and media network as regulations of the government and rules of the company.
- Not comply with regulations on safety, security of the entire data system, store and safety of network accessing.
- Manage, develop, install and using software illegally.
- Not ensure for the information system to be always in operation, satisfying the demand for information using, and reporting in timely, correctly and sufficiently manner.
- Not manage and implement effectively for UR IT projects.
- Intentionally distribute virus programs via computer network in the company system, or have other destroying behaviors, which caused confusion of operations, blockade or deformation and destroy of database in computer network of the Company.
- Violating regulations in Article 34, Chapter VIII of this rule.
- Violating behaviors relating to asset procurement, investment for basic construction

- Not execute as regulations, legal procedures and of the Company regarding asset procurement system and investment for basic construction.
- Have cheating behaviors, agreement during the procurement of assets, services, basic construction investments, causing damages to benefits of the Company or affecting customers.
 - Violating behaviors relating to marketing, information, propaganda, public relations
 - Advertising information / services which have not been completed or provided to customers.
- Not comply with regulations on provision, using, managing propaganda information and public relations of the company.
 - Information, propaganda, public relations under improper methods or contents, above the authorities or having bad influence on the Company.
 - Violating behaviors about personnel organization
 - Conducting salary ranking, changing salary levels, increase of salary not in compliant with existing regulations of the Government.
 - Manage, store profiles of staff not as regulations or losing profiles.
 - Dealing with activities relating to salary, social insurance not in timely manner or not in compliant with regulations.
 - Providing untrue information or advising wrong ideas to the increase of salary, dealing with benefits for personnel as regulations of the Company.
 - Providing untrue information, without proper proofs relating to staffs, providing comments on performance of staff not as procedures, without or in contrast to information provided by direct management persons, without proper proofs.
 - Providing information about staffs for organizations and individuals which is violating the legal regulations about labor and other related legal documents.
 - Not complying with principles, procedures of recruitment, and assigning, dispatching, planning, training and managing staffs as regulations of the Company.
 - Violating to recruitment activities
 - For staffs involving in examinations:
 - Bringing materials, information, illegal products to exams rooms for examinees, or help examinees to finish their tests by any manner, exchanging fraudulently tests, or helping others to exchange tests of others illegally, or disclosing the no. on the test, additionally writing or fixing contents of exams not as regulations, bringing products which cannot be accepted for entering exams and marking area; not timely remind, dealing with violated examinees as regulations.
 - Disclosure exams contents when yet decision to publicize it
 - Managing exams documents, exams papers not as regulations; lose or damage exams till it is impossible to mark that exams; marking exams not as answers, marking rate and procedures; making marking/evaluation table not as results; not guarantee the confidentiality of exams.
 - Violating other regulations of exams rooms.
 - For examinees:
 - Perjury in exams register documents.
 - Taking exams for another persons, or asking others to take exams.
 - Bringing papers, materials, telecommunication equipment or those obtaining information which can be utilized for fraudulence during the exams, and other illegal products.
 - Using materials during exams.
 - Not sitting at their respective no., exchange and make noise at exams rooms.
 - Not complying with other regulations of exams room's internal rules.
 - Violations relating to office affairs.

- Not complying with regulations about administration, secretary, documentation; circulating documents which have not been issued as legal procedures, managing incoming and outgoing letters, submission letter and report of organizations which are not as regulations, being delayed for circulating incoming and outgoing letters.
- Noticing contents in meetings of Leaders in incorrect way or not in timely manner, causing affects to operation of the Company.
- Not supplying facilities, printings, devices, tools for working as regulations of the Company without good excuses.
- Not complying with regulations on protection of store, funds, security, and transporting assets, documents, which may cause consequences.
- Violations in consulting activities, interpretation, translation
- Performing consulting functions which is not in compliant with legal regulations, or perform based on expired legal documents for private purposes and mobility.
- Not complying with regulations on foreign affairs, including consequences decreasing the credibility of the company, interpreters or translators in charge of translating from Vietnamese into foreign languages or vice versa perform not in compliant with the nature of original documents due to neglect or for private objectives, mobility.
- Violations relating to profiles, decrees, certificates of education.
- Supply, using decrees and certificates illegally, counterfeit profiles to get salary increase, salary rank increase, to be sent for training, education, or assigned, or to enjoy other benefits as regulations of the government or of the company.
- Violating training rules or leaving classes without permission of competent person during the dispatching for training or education.
- Other labor discipline violation
- Violations to other professional activities include behaviors of violating or following rules in wrong and insufficient way, which is in contrast to existing rules and procedures of the Government and the Company during the implementation of tasks yet specified at this rules.
- Violations to standards, requirements of legal documents during the implementation of works yet specified at provisions in this Chapter.
- Behaviors of abusing the position of staff of the Company to conduct private activities, causing bad affects on honor, credibility and image of the company's staff.

Article 36. Methods of punishments to violations of labor disciplines

- Objectives of punishments to violations of labor disciplines
- The punishments on violations shall ensure internal order and principles, building up legal regulations and labor discipline compliance attitude on the educational and violation preventing spirit, striving to prevent any symptoms of slacks and negative activities in the operation of the company.
- Handling with violations to disciplines
 - Any violation to labor disciplines shall be punished as regulations in this labor rules and in governmental legal regulations. Depending on nature of each violation, the violated persons shall be punished by different labor punishing methods as regulations in this labor rules, or punished in accordance with governmental regulations or investigated for criminal law as regulations.
 - Any violation to the rules, other than punishments under this decision, shall be inflicted by other punishments in accordance with specific regulation at each of related documents.
 - Punishments in case of law violations: all violations to legal regulations, depending on the nature of violation, shall be inflicted by punishments in accordance with this labor rules, other than punishments as civil and criminal laws.

- When considering the punishments as this labor rules, the competent person must consider, evaluate reasons, background and specific situations when the problem happens as mentioned in Article 35 of this rule.
 - Principles of punishing
 - Every violation found shall be immediately suspended. The punishing towards violations shall be implemented in timely, objective and transparent manner. Every consequence caused by violations shall be improved as regulations of the government and of the company.
 - Strictly punishing staff who organize, violate for many times, abusing power and authority. Decreasing punishment to officers who self confess of their violations, truthful in information declaration, trying to fix the mistakes or compensating for violations.
 - Each violation can be handled by 1 time, equal to one punishment. When any staff has many violations, only apply the highest punishment, which is referring to the most violating activity.
 - If many staff together violates the regulations, each of them shall be punished equally to their mistake.
 - The handling with violations must be conducted by competent authorities, ensuring proper procedures as labor regulations and Company rules.
 - The handling with violations must be conducted on the basis of nature and level of violations, as well as any details which can decrease or increase the violation, to make proper decision.
 - The handling with violations must be based on principles of publication and democracy.
 - Not applying labor punishment to labors who are in the following situations:
 - a) Sick leave, resting leave, leaver under permission of employers;
 - b) Being hold in custody;
 - c) Waiting for investigation results from competent authorities to clarify and conclude to violating activities as stipulated at Clause 1, Article 126 of Labor Law;
 - d) Female labors are in maternity leave/pregnant; labors growing up under 12 month old children.
 - Prohibiting any of activities which harass others' body and human dignity when dealing with violations, or abusing any methods of fine, deducting salary to replace for the punishment.
- 4. Punishments to labor rules' violations.
 - Staff violating the rules shall be punished by one of following methods, depending on nature and level of the violations:
 - + Blaming (verbally or by written documents).
 - + Expand the duration to increase basic salary level not over 06 months, position dismissing.
 - + Dismiss.
 - Labors shall be considered for punishment when having any violations at the rules. Other than above punishments, staff can be prohibited to take certain positions as regulations of the Company. If staff may cause damage on assets of the Company, they must compensate as regulations.
 - a. Blaming:
 - Verbal blaming shall be applied in the following cases:
 - + Labors violating Labor rules for the first time, at low level which has not yet been considered for higher punishment.
 - + Labors do not violate Labor rules, but know about violations of others, without reporting to competent authorities, but this behavior has not caused any damage to assets, or affecting on safety, credibility, image and brand of the Company.
 - Blaming by written document applicable for the following cases:
 - + Low level of violating, but often.
 - + Violating for the first time, but not yet caused any damage on assets and/or non-asset for the Company, or behaviors causing damages on assets and benefits of the Company (the damage has not

been over 10 months of regional min salary regulated by the Government at the working place), but yet being punished by higher methods.

- + Re-violate after verbal blaming or being punished for 02 times by verbal blaming.
- + Labors who self leave the job for less than accumulating 03 days in one month, or under 10 accumulating days in one year without proper excuses.
- + Other cases decided by competent authorities / punishment committee to propose to authorized persons to make decisions in compliant with regulations.
- + Other cases as regulations in documents relating to dealing with responsibilities in respective works of the Company.

b. Punishment by expanding the increase of salary not more than 6 months, dismissing from position applicable in the following cases:

- Frequent violations, or causing damages on assets, benefits of the Company (damage from 10 – fewer than 20 months of regional min salary decided by the Government for working place of the labors) but yet reached higher punishment level.
- Re-violate for 3 months since date of blaming, or punished for 2 times by written blaming.
- Labors leave the job from 3 to less than 5 accumulating days in a month, or from 15 till under 20 accumulating days in one year without reasonable excuses.
- Other cases which shall be decided by competent persons, or by punishment committee to propose to competent persons to make decision in compliant with labor regulations.
- Other cases as regulations in documents about responsibilities in Company's operation.

c. Dismiss can be applied for the following cases:

- Violating behaviors in series, sophisticated or causing serious damages in terms of assets, physical benefits and/or intangible ones to the Company (damage of more than 20 months of regional min salary stipulated in Government regulations at respective working place).
- Violations causing serious damages or endangering to cause serious damages in terms of assets, benefits for the Company.
- Labors under punishment of expanding the duration for salary increase, but still re-violating during the time when the punishment has not been finished, or dismissed from position, but still re-violating.
- Labors leave the job for 5 accumulating days in one month, or 20 accumulating days in one year without acceptable excuses.
- Other cases shall be decided by competent persons / punishment committee proposes for decisions in compliant with labor regulations.
- Other cases as regulations documents about dealing with responsibilities of the Company.

d. Punishment for officers, as stipulations about staff, public officer:

Labors working at the Company which is subject to regulations about officer, public officers, when violating labor disciplines shall be punished as regulations on officer, public officer and other related legal documents (if any).

In case that legal documents about officer, public officer, and other related legal ones have no regulations, this labor rules shall be applied.

e. Punishments following civil laws or criminal laws in the following cases:

Labor violate the rules intentionally or responsibility neglect, which cause huge damage to assets and operation of the Company, apart from being punished by labor disciplines and compensated as this labor regulations, they are possible to be punished in accordance with civil laws or criminal laws as regulations.

Article 37. Physical responsibilities.

1. Physical responsibilities

Labors violating legal regulations due to intentionally violating regulations or lack of responsibilities, causing damages to the assets of the Company, shall need to compensate or compensate for damages of assets as regulations of the Government and of the Company, apart from being punished as regulations in this labor rules.

2. Compensation of damages

- Labors causing damages to tools, devices, or having other behaviors damaging the assets of the Company shall compensate as regulations.

- Labors losing Company's tools, devices, or other assets as assigned by the Company or consume materials more than acceptable level shall compensate partly or the entire of damages in compliant with market price. In case of any responsibility contract existing, the compensation shall be preceded as contract, in the case that the reason is unavoidable, it is not requested to compensate.

The unavoidable cases as mentioned in this term include natural disasters, fires, happening which cannot be predicted or unable to recover though applying all necessary methods and ability.

Article 38. Principles, procedures of damage compensation

- Consideration and decision on the compensation must be based on mistakes, and damages in practice, and even be able to consider to practical family status, individual achievements and assets of the labors.

- In case that there are many labors together violate, causing consequences, they will together be responsible for compensating for any damages caused by them.

- Procedures and duration of handling with compensation shall be applied based on regulations of the government and of the company.

Article 39. Complains on decisions about labor disciplines or physical obligations

Labors under labor punishment, job suspension or requirement of compensation shall be able to complain to employer and competent authorities as regulations if they do not agree with the decisions, or shall be able to request for dealing with labor disputes as regulations.

CHAPTER X

CLAIM AND DENOUNCEMENT

Article 40. General provision.

1. During the work at the Company, if labors find that he/she are treated not as regulations by a manager, or any Department, board in the Company, he/she can report to direct managerial persons to deal with. If he/she does not satisfy with the solutions of direct managerial levels, labors can complain to higher ranked authorities.

2. Labors can denounce to leaders of the Company on any wrongful activities of any individuals or organizations which can cause damages or risk the benefits of the Company, of the group or of that person.

3. Managerial levels when receiving complains and denouncement shall be responsible for solving in timely, objectively and strictly manner towards violators, applying necessary methods to prevent any possible damages and ensure for strict implementation of their decisions.

4. In principle, the Company shall not deal with un-named letters, but only refer to those if necessary.

Article 41. Obligations, rights and responsibilities of complainer, denouncer and of complained, and denounced persons.

1. Authorities, obligations and responsibilities of Complainer.

a. Complainer shall be authorized to:

- Submit letter, directly explain or via his/her legal representative to complain to Leaders of the Company as regulations;
- Being provided with decision on complaint settlement, or being informed about solutions to the problem, which is issued by competent agencies;
- Being recovered with authorities, legal benefits which have been abused;
- Being considered for receiving partly or entirely support for damages (if any).
- b. Complainer shall be responsible for:
 - Carry the complaining as procedures stipulated in Company's regulations;
 - Explaining the problem in objective, truthful, legitimate manner, providing sufficient related information, materials and proofs.
 - When requested, participating in interviews, confronting, clarifying contents of complaint.
 - Strictly obey decisions on solutions to complaint, which are issued by leaders of the Company.
- c. Complainers shall be responsible for accuracy, legality and validity of the complaint, as well as information, materials provided by the complainer. In cases of violating procedures for implementation, or intentionally providing wrong information, etc., which caused damages to complained persons, or obstacle business operation of the Company, or affecting the decision making process of Company leaders, the blaming or punishments shall be applied respectively in comparison to the seriousness of the violation.
- 2. Authorities, obligations and responsibilities of denouncers
 - a. Denouncer is authorized as complainer, and concurrently, he/she can request receiving body to keep secret of his/her name, address and any autograph till a decision on denouncement solution is in effective.
 - b. Denouncer has similar obligations as complainers, and being responsible for his/her denouncing contents, as well as his/her provided information, proofs, and materials.
 - c. If denouncer intentionally lies, distorts, makes counterfeited documents, reports wrongly to the truth, or deforms the information to cause disadvantaged situation to denounced persons, or decreasing the credibility of the Company, he/she shall be punished at highest level, i.e. dismissal, or if serious damages are created, he/she shall be prosecuted and asked for compensation of honor, or of materials to damaged/affected persons and organizations.
- 3. Authorities, obligations and responsibilities of complained, denounced persons
 - a. Those persons shall be authorized to:
 - Provide proofs about the legality of the decisions, the implementation of the decision, and any related proofs, documents.
 - Submit report, or directly explain to higher ranked leaders to explain about the case;
 - Be able to proactively approach to complainer, denouncer (when requested by higher leaders), to explain, reconcile or provide more information, circulating regulations or basis to be applied;
 - Receive decision on solutions to complaints, denouncement, or Be noticed about the solutions of higher leaders;
 - Be recovered with legal authorities, benefits, and requesting for damages' compensation (if any);
 - b. Complained, denounced persons are obliged to:
 - Investigate, verify, review any decisions which cause complaints over him/her;
 - Explain the case in truthful and legitimate manner; provide related information, materials and proofs.
 - Explain to higher leaders when requested;

- c. Complained, denounced persons are responsible for:
 - Explain to complainer or denouncer by following instructions of functional Departments, committees, and by instructions of higher leaders in cooperation manner.
 - Strictly execute decision on complaint or denouncement solving of Company's leaders.
- It is prohibited to depress, give favor or treat unfairly to complainer, denouncer.

Article 42. Procedure, duration of complaining and denouncing.

1. Procedures
 - a. Before complaining, the laborer must discuss, feedback to his/her direct leader, if he/she does not satisfy towards the solutions of those direct leaders, it is possible to complain to higher persons by following below steps:
 - Report in written form to competent authority, clarifying issues which are not satisfactory, and requested for review;
 - If the issue cannot be satisfactorily dealing with or yet solved, it is possible to submit by written form to higher authorities.
 - b. Laborers can prepare Letter of denouncement and submit directly to competent leaders for consideration and solutions.
 - c. While waiting for consideration, solutions to complaints, denouncement, and the laborers still need to work under their responsibilities, trying to complete their tasks, and still following any decisions which are being complained.
 - d. Complaints must be executed by written form, and by following documentation rules of the Company when sending out.
2. Duration
 - a. Duration for a complaint is 30 days since the date of issuance of administrative decision or any activities which caused complaints.
 - b. Duration for a denouncement is 60 days since the date of issuance of administrative decision or any activities which caused denouncements, but if the decision of denounced persons is still harmful to the Company, there will be no regulations for denouncement duration.
 - c. The Company shall not solve complaints, denouncements in the following cases:
 - Unnamed letter (in principle, this will not be considered, but can be refer to, when necessary);
 - The duration of complaining has finished without working out reasonable excuses;
 - Complainers has no civil rights, has mental disease, or another disease which imfunction the acknowledgement, or behavior controlling, and without legal representative;
 - Any complaints or denouncements which have been solved in decisions made by General Director, except for cases under other authorities following Articles of Incorporation, and regulations.

**CHAPTER XI
IMPLEMENTATION PROVISION**

Article 38. Scope of application

This regulation is circulated and applied for unified implementation at Hanoi Metro One Member LLC.

Article 39. Implementation

1. Labor regulations of the organization must be circulated and understood for implementation of each of laborers in respective organization. Before signing in any labor contract, the employer must provide to-be-employee with a copy of labor regulations. Labor regulations will be attachment in Labor contract, and laborers are responsible for studying and implementing.

2. Directors of units, Managers of Departments, Committees/Boards under the Company are responsible for coordinating with Labor union permanent committee, and Organization – HR Departments to promulgate and implement the regulations in good manner.

3. Department of General affairs - Organization is responsible for instructing, explaining laborers in the Company to master all regulations in the labor regulations.

4. Within the scope of authority of General Director, Directors, Managers of departments under the Company shall promulgate specific regulations to comply with features, operation status and business operation of respective organizations, without any violations to this regulations.

Article 40. Effective implementation

1. This regulation is valid since the date of signing for issuing by Company’s General Director, and registered at Hanoi Department of Labor, Invalids and Social Affairs.

2. Any amendments, supplements of these labor regulations shall be decided by General Director.

3. In the case that there are contents that this regulation has not mentioned, but regulated in another legal regulation, those are automatically applied.

4. All other rules, regulations issued by the Company are treated as Appendices of these regulations, without excluding each other. In the case of any discrepancies between this regulation and other rules, regulation of the Company and/or of organizations under the Company, General Director shall be authorized for consider and make final decision.

Hanoi, date... month ... year

GENERAL DIRECTOR

(Sign and seal)

Hanoi City People Committee
Hanoi Metro One Member LLC

THE SOCIALIST REPUBLIC OF VIETNAM
Independent – Freedom – Happiness

DRAFT

RULES ON RECRUITMENT

HANOI METRO ONE MEMBER LIMITED LIABILITY COMPANY

Chapter I GENERAL PROVISIONS

Article 1. Legal basis

- Labor Code 10/2012/QH13 dated 23/6/2012;
- Other relevant legal documents.

Article 1. Scope of application and applicable objects

1. Scope of application:

The rules are issued to define principles in recruitment of Hanoi Metro One member Limited Liability Company (hereinafter called Company), to:

- a. Ensure that the recruitment has been uniformly implemented in the Company.
- b. Provide human resources satisfying requirements of quantity, quality following standards of positions, titles which have been approved by General Director; ensuring high effectiveness of management and operation in the Company.
- c. Recruited labors must possessed sufficient capacity to implement the works as required, well observing policies and regulations of the Government as well as regulations in the Company.

2. Objects of application:

The rules are applied for new recruitment of all titles under the recruitment authority by the Company in accordance with existing regulations, including:

- Recruit new labors from training schools
- Receive labors from organizations out of the Company
- Allocate personnel among departments in the Company
- Transfer labors from this Company to other Company

Article 2. Principles of recruitment

The recruitment must observe general principles of the Government, HPC and the Company, specifically:

1. The recruitment must be based on actual demand for labors, in compliant with titles available in the organization structure of the Company. The recruitment shall be only carried out if there is lack of labors in comparison to personnel regulated quota or creating new jobs under approval of General Director. No recruitment is executed when there is no demand.

2. Recruited personnel must satisfy criteria for in-needed positions; must be selected carefully, appropriately evaluating about knowledge, profession which they have been educated and trained, morality, capability, professional knowledge, health, ensuring to complete assigned tasks properly.

3. The Company monitors:

a. Objectives, demands, principles, standards of labors to be recruited for the entire Company and directly recruit those with speciality.

b. For temporary employees working in line operation units, depending on their position and tasks, General Director will authorize Head of the Unit to directly recruit and report General Director about result of recruitment.

Chapter II

RECRUITMENT PROCEDURES

Article 3. Defining demand for recruitment

1. Demand of recruitment is arisen from the following sources:
 - Pursuant to regulated quota of personnel in the Company,
 - Pursuant to request of General Director,
 - Organization – Human resources Department proposes, in pursuant to demand for supplement to replace labor force who change the work, come up to retirement age, or insufficient health for working, etc.
 - Pursuant to requirements of Departments, boards, units, in pursuant to demand of the work
2. Recruitment demand must satisfy the following requests:
 - Recruit for which jobs?

- Candidates must satisfy conditions of: skills, qualification, techniques and other conditions depending on job requirements.
 - Quantity of employees in need.
 - Type of labor: Full time or part time?
 - Timing of starting.
3. Defining long-term demand: to proactively prepare resources for management, operation and maintenance of UR in Hanoi in the future. Organization – HR Department shall work out the demand, report to permanent board of Recruitment Council to select and train for some distinguished students at universities, vocational training places. Those students after finishing training shall also experience similar recruitment procedures as other cases.

Article 4. Collection of demand for recruitment.

Head of departments, boards, units shall collect demand for personnel of their respective departments and submit Organization – HR Department in accordance with format (Form no. 01). Organization – HR Department shall implement the following steps:

1. Re-define demand for recruitment of Departments, boards and units in terms of quantity, requirements for the jobs.
2. If considering any unreasonable details, it is needed to directly report Heads of related Departments, Boards or units to get consensus on recruitment.
3. After getting consensus on recruitment demand, a combination list of each position, quantity of necessary employees shall be prepared;
4. Prepare recruitment plan to submit General Director to ask for opinions on recruitment (with specific analysis and statement); If requirements are not fulfilled, it is necessary to get consensus again with Heads of related Departments, Boards and Units in accordance with opinions of General Director, if there is any unagreed points, it is necessary to specifically explain to General Director.

Article 5. Plan of recruitment

After getting approval of General Director, Organization – HR Department shall make plan of recruitment following format (Form no. 02) including the following contents:

- Number of and conditions of recruiting labors for each job.
- HR providing source (where to publicize recruitment notice, newspaper, stations, jobs center, training schools).
- Timing of receiving recruitment documents.

- Estimated formation of interviewees to labors (arranging specific person upon each needed position, surveying the skills and qualification).
- Interviewing timing.
- Submit General Director to approve for recruitment plan, including recruitment expenses.

Article 6. Establishment of Recruitment council

1. Recruitment council includes members specifically assigned for each time of recruitment by Decision on formation of Recruitment council signed by General Director.

2. Recruitment council shall include:

- General director as operating person and Chairperson of Recruitment council

- Deputy General Director – in charge of HR – will be Deputy Chairperson of the Council

- Director of Organization – HR department as Member and Secretary of the Council.

- Chairperson of Labor Union, Deputy General Directors, Directors of departments which are in need of recruitment shall be Members.

- Some officers in Organization – HR department, other managerial staff of other units can be asked for consensus to join in Recruitment council.

3. Recruitment council has responsibility to:

- Defining criteria and standards of recruitment for each position;

- Defining methods, measures (tests/multiple choice test and answers, interview questions, etc.) to evaluate candidates;

- Defining and preparing standards, procedures to evaluate candidates;

- Defining contract conditions and benefits for candidates;

- Evaluation of candidates: marking tests, appraisal of candidates via interviews, etc following assignment of the Council. Each member of recruitment council shall have specific evaluation sheet for each candidate;

4. Decision making principles of Recruitment council:

- Members of recruitment council can discuss equally about any of problems relating to recruitment work;

- Discussions of the Council will be recorded in memos;

- Members of recruitment council can vote for decisions made by this Council;

- Result of voting will be referring foundation for Chairperson of Recruitment council to make final decision.

Article 7. Notice on Recruitment.

After recruitment plan is approved, Organization – HR department shall notice the recruitment via newspapers, stations, jobs center, training schools or posted, with the following specific requirements:

1. Application will include:
 - Self declaration (Form no. 03)
 - Resume: original, with certification of local authorities or authorized organization (in case of transferring position) (02 copies)
 - Application letter: original, with certification of local authorities (01 copy)
 - Health certificate as existing regulations of the Government, original (01 copy). For drivers, it is required to pursue Health certificate to make sure sufficient health conditions for driving train by hospitals or medical centers appointed by the Company.
 - ID card: copy, comparing to original (01 copy)
 - Residence book: notarized copy (01 copy)
 - Certificates, degrees (upon each job): notarized copies.
 - Decisions, personal documents, etc (in case of transferring jobs): notarized copy.
 - 02 face photos (4x6), contact information
2. Starting salary
3. Working location
4. Location and timing of receiving applications, etc.

Article 8. Receive and check documents.

Organization – HR department shall receive applications of candidates, instruct candidates about recruitment procedures of the Company. Preliminary qualification of candidates shall be as following:

1. Checking the age of candidates (based on ID card, check and compare other papers, in case of suspecting candidates of insufficient age, this can be checked in interview and if the candidate does not fulfill the requirement of age, he/she will not be accepted).

2. Checking the sufficiency of candidate's documents?

The entire of papers have been made in no more than 6 months till the date of checking by Organization – HR department. In case that candidate has not enough documents, he/she is requested to supplement later.

3. Checking candidate's satisfaction of knowledge, experiences to expected position. If qualified, Organization – HR department shall combine into a list and submit Recruitment council. Afterwards, testing schedule for candidates shall be posted on website and publicized on Notice board of the Company.

Chapter III RECRUITMENT

Article 9. Pre-qualification, Probation

1. Pre-qualification: After receiving and checking proper applications, Organization – HR department shall combine list of candidates who satisfy conditions, criteria of recruitment and report Permanent members of Recruitment council to select official recruitment method.

2. Probation: for newly graduated candidates or experienced ones but yet working at registered positions, it is requested to probate at expecting receiving organization and work on expected works with the following duration:

+ 02 months for labors working on specialities, University or College graduated and more;

+ 01 month for those directly involve in operation and services.

2.1. Probation contents:

+ Implement specialities works following expected positions. Organizations expecting to receive probation labors must arrange experienced staff to instruct;

+ Learn about Labor rules, procedures, regulations relating to works of expected positions and labor safety and hygiene.

2.2. Salaries and allowances for labors during probation: Following regulations on salary payment and allocation of the company.

2.3. Completion of probation:

+ Probation labors report the results in written form, instructor and Head of organization receiving probation labors will comment, evaluate and send to Organization – HR department for compiling, submitting Permanent members of Recruitment council for consideration of official employment.

Article 10. Official employment.

To be officially employed, qualified candidates must experience one of two methods of knowledge exams: direct exams (appointment) or centralized exams (test).

1. *Direct exams (appointment):*

1.1. Recruitment council makes decision for candidates of appointment who have sufficient conditions, professional experience of functional departments and related units to organize comprehensive inspection of candidates' qualification.

1.2. Exams results shall be made into Memos and submit Recruitment council to consider and make decision on the employment.

2. *Centralized exams (test):*

2.1. Prepare plan, promulgate exams regulations, management the exams: Organization – HR department submits Exams plan to Chairperson of Recruitment council (Time, venue, exams room no., etc.), organizes to promulgate internal rules, exams rules and coordinates with other departments, to prepare tests, exams supervising, sealing answers before marking, etc, ensuring security and accuracy of tests, strictness and compliance to regulations during exams.

2.2. Marking tests: After exams, Organization – HR department shall prepare list to send to Evaluation council, which includes capable members from subordinate organizations, who have not violated any exams rules and have no relatives joining exams. If necessary, it is possible to hire outsourcing teachers. Answer sheets must be cut out of its personal information edge. The number of personal information edge will be kept by Chairperson of the Council. To mark the answers, it is requested to refer to marking scale of test's answers. In case that evaluators cannot get consensus with each other, average mark of two marking times will be used.

2.3. Considering exams results: after Evaluation council compiles the marking table (including preferential marks), Organization – HR department shall invite Recruitment council to discuss on approval of list of selected persons, following principle of prioritizing highest mark till satisfying the number of needed personnel. Results of the recruitment is publicized. Afterwards, Organization – HR department will coordinate with functional departments and organize official health check-up for driver positions (if any) to handle with next recruitment procedures.

Chapter IV

LABOR CONTRACT

Article 11. Labor Contract.

1. Based on results of exams, Organization – HR department shall prepare submission letter to request General Director to make decision on receiving labors and organize to sign on Labor contracts.

2. Profile required when signing Labor contracts including:

- Recruitment documents;
- CVs;
- Memo on speciality's exams or self-evaluating memo for probation, with comments by Head of direct instructing organization (if any);
- Decision on receiving labors.

3. Labor contract will last for 12 months for all recruited labors. From the next signing, upon request of the work and satisfying possibility of labors, it is possible to define 3-year contracts or no-term contracts.

Chapter V

APPOINTMENT, TRANSFER

Article 12. Appointment:

1. If a labor wants to move from this organization to another inside the Company, he/she shall submit an application which clearly explains the reasons; permission of old organization and acceptance for receiving from new organization. Organization – HR department shall report for consideration of General Director based on labor arrangement plan and works demand. If not agree, Organization – HR department must promptly report to related individuals and organizations to stabilize the works.

2. In special case, if more labors should be mobilized due to work demand, Organization – HR department shall report General Director to mobilize personnel appropriate to required works. Afterwards, it shall notice opinion of General Director to head of departments which have personnel to be mobilized, those who will receive personnel and make decision.

Article 13. Transferring:

1. If transferring from outer organization to the Company, the procedures is similar to recruitment one.

2. If a labor in the Company wants to transfer to outer organization, he/she must prepare application and report to Head of their departments at least 15 days in advance, in order to prepare replaced ones. If that department fails to arrange, Head of that department must report leaders of the Company for settling methods. If there is not replacing person, requiring individual shall need to continue the work, or unilaterally terminate labor contract as regulations.

3. If labor who wants to transfer to abother organization or unilaterally terminates labor contract shall need to repay the Company all debts, assets assigned by the Company to that person, training costs, as regulations of the Government, sector and other related costs (if any).

Chapter VI

ORGANIZATION OF IMPLEMENTATION

Article 14. Organization of Implementation

1. Apart from function of giving advices in Organization – HR department, and other related functional departments must be much responsible during recruitment: Preparing tests, evaluating, exams, qualification, etc. According to principle, department, board and unit which are assigned works shall need to be fully responsible in front of General Director of the Company about quality, progress of works.

2. Heads of Departments, boards, units, Chairperson of Labor Union must master and apply this rules to all labors, labor union members; explaining, instructing them to understand principles, procedures and orders, etc. of the recruitment.

3. During implementation, if there is any difficulty, Departments, boards and units must report Organization – HR department to compile and report General Director for timely adjustment./.

GENERAL DIRECTOR

Logo	HANOI METRO ONE MEMBER LIMITED LIABILITY COMPANY
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RECRUITMENT PLAN – 6 MONTHS

Name of organization:.....

06 early months of 20....

06 ending months of 20....

No.	Planned positions at organization	Current quantity of personnel	Expecting additional quantity of personnel	Description of expected posts	Qualification/ skills/ specialties of expected posts	Proposed salary	Reason of supplement	Progress of supplement (in month)					
								9	10	11	12	13	14
1	2	3	4	5	6	7	8	9	10	11	12	13	14

Hà Nội, Ngày tháng năm 20.....

ORGANIZATION
HUMAN RESOURCES DEPT.

HEAD OF ORGANIZATION
(Planning)

PREPARED BY

Logo	HANOI METRO ONE MEMBER LIMITED LIABILITY COMPANY
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COMPANY RECRUITMENT PLAN

(Quarter year 20.....)

No.	Position	Quantity	Recruitment criteria	Proposed salary	Priority	Recruitment method	Timing of recruitment	Implementation	Remarks
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
1	GENERAL AFFAIRS DEPT.								
2	ORGANIZATION – HR DEPT.								
3	FINANCE – ACCOUNTING DEPT.								
4	SAFETY – QUALITY DEPT.								
5	BUSINESS – PR DEPT.								
6	PLANNING – PROJECT DEPT.								

7	INTEGRATED TRAIN OPERATION DEPT.								
8	MAINTENANCE TECHNICAL DEPT.								
	RS DEPT.								
	TELECOMMUNICATION, SIGNALING, ELECTRICITY, STATION EQUIPMENT DEPT.								
	TRACK DEPT.								
	CIVIL WORKS DEPT.								

Hanoi, date month year 20....

GENERAL DIRECTOR

**HEAD OF ORGANIZATION
HR DEPT.**

PREPARED BY

Logo	HANOI METRO ONE MEMBER LIMITED LIABILITY COMPANY
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CANDIDATE'S SELF-DECLARATION

Applying position:.....Code:.....
 Candidate code:.....

1. Personal information:

Full name		Staff code	
Applying post.		Dept.	
ID/Passport No.		Date of issue Place of issue	
DOB		Gender	
Place of birth		Religion	
Resident address			
Current address			
Telephone		Mobile	

2. Qualification:

2.1. STUDYING PROGRESS

	Name of school	Major in	Period of studying	Ranked
Vocational school				
College				
University 1				
University 2				

Post-university				
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2.2. Foreign language

Language	English <input type="checkbox"/>	French <input type="checkbox"/>	Japanese <input type="checkbox"/>	Chinese <input type="checkbox"/>	Others <input type="checkbox"/>
Type of degree	A B C	A B C	A B C	A B C	A B C

2.3. Computing skill

Ms. Word Ms. Access Ms. Excel Corel

Photoshop Others

2.4. Other majors (Listing undergoing courses, too)

No,	Degree	Major	Training period	Ranked

3. Occupation:

3.1. Occupation objectives:

Objectives	
Proposed salary (probation)	
Official salary (after probation)	
Expected salary (after making the best efforts)	
Expected date of starting work at Company	

3.2. Working experience:

Name of organization:.....			
Working time: from date monthyear to datemonthyear.....			
Address:.....			
Telephone:.....		Email:.....	
Business:.....			
Time	Position	Work description	Salary (salary ratio, scale, salary rank)
Reason of leaving job:.....			
Reference:.....			Telephone:.....

Position:.....	
----------------	--

Name of organization:.....

Working time: from date monthyear to datemonthyear.....

Address:.....

Telephone:.....	Email:.....
-----------------	-------------

Business:.....

Time	Position	Work description	Salary (salary ratio, scale, salary rank)

Reason of leaving job:.....

Reference:..... Position:.....	Telephone:.....
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Name of organization:.....

Working time: from date monthyear to datemonthyear.....

Address:.....

Telephone:.....	Email:.....
-----------------	-------------

Business:.....			
Time	Position	Work description	Salary (salary ratio, scale, salary rank)
Reason of leaving job:.....			
Reference:..... Position:.....			Telephone:.....

Name of organization:.....			
Working time: from date monthyear to datemonthyear.....			
Address:.....			
Telephone:.....		Email:.....	
Business:.....			
Time	Position	Work description	Salary (salary ratio, scale, salary rank)

Reason of leaving job:.....			
Reference:..... Position:.....			Telephone:.....

3.3. Self-evaluation about qualification and capability:

Personal qualification:	
Aptitude:	
Skills:	

3.4. Members of associations or unions:

No.	Name of associations, unions	Tasks	Participating time
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Contact person in urgent case:
Address:.....	
Telephone:.....	

I commit above information is sufficient and accurate.

I accept any investigation on personal information, working progress which is necessary for recruitment.

I commit:

- In case of being selected, any wrong information provided by me or during interviews can be proofs for Company to terminate contract.
- Observe rules and regulations of the Company, the Government.

Hanoi, date month year

Sign

DRAFT

RULES ON WAGES

HANOI METRO ONE MEMBER LIMITED LIABILITY COMPANY

Chapter I

GENERAL PROVISIONS

Article 1. Scope and objects of application

1. The rules stipulate about the payroll, bonus (if any) for labors in Hanoi Metro One Member Limited Liability Company (hereinafter called the Company). The rules prescribe principles, contents about management of payroll, bonus, in order to uniformly the usage and distribution of wages in accordance with policies and existing regulations of the Government and requirements for management of the Company. At the same time, wages and income of labors will be gradually attached to their work performance and positions assigned.

2. Salaries, wages (commonly called salaries) refer to amount which are paid to employees from employers based on quantity and quality of the works or agreement between two parties in compliant with existing regulations of the Government and the Company.

3. Bonus is amount that employer awards employees or group of employees in holidays, end of quarters, end of year on the basis of results of business and performance of labors, or unscheduled rewards for individuals, groups of employees if there is innovation for work improvement or excellently completing tasks.

Article 2. Common principles in allocation of wages, bonus.

The payment for wages, bonus in Hanoi Metro One Member Limited Liability Company shall follow Circular no. 18/2013/TT-BLĐTBXH dated 9/9/2013 by MOLISA guiding the implementation of management over labors, wages and bonus for labors in One member limited liability company owned by the State, and observe the following basic principles:

1. Manage, use Wages and bonus fund in the right purpose and effective manner, in compliant with common policies and mechanism of the Sate as well as specific conditions of the Company.

2. Wages for labors shall follow principles of labor allocation. Wages are paid based on works and positions hold (works, positions mentioned in Labor contract or decision of Company's General Director). When there is decision to replace titles and works of labors, wages shall be timely adjusted.

3. Labors, who are trained and highly qualified (not including academic rank and degree), equipped with high technical skills, high workmanship and contributing much efforts and creating business efficiency, will be paid with higher salaries.

4. Wages and bonus for individuals or group of labors shall be dependent on productivity, quality and efficiency of the works as well as contribution of individuals, groups of labors, ensuring the transparency and equality between individuals and groups of labors.

5. The entire of wages and bonus must be accurately and sufficiently shown in payroll or wages book of the Company as regulations.

6. In case that one person holds two or more positions at the same time or works in different units at one time, wages, bonus shall be applied following the position/works with highest salary ratio during that time.

Article 3. Legal basis

- Labour law of 10/2012/QH13 dated June 18th, 2012.
- Decree No. 205/2004/ND-CP dated December 14th, 2014 designating salary table, wage table and allowance systems of state-owned companies.
- Decree No. 49/2013/ND-CP dated May 14th, 2013 providing regulations on details of certain Labour law concerning wages and guidance on actual enforcement.
- Governmental Decree No. 50/2013/ND-CP dated May 14th, 2013 providing regulations on management of wages and rewards for employees of state-owned one member LLC.
- Governmental Decree No. 51/2013/ND-CP dated May 14th, 2013 providing regulations on management of wages and rewards for partners, chairman, auditors, president, deputy president and chief accountant of state-owned one member LLC.
- Circular No. 12/2003/TT-BLDTBXH dated May 30th, 2003 and 18/2008/TT-BLDTBXH dated September 16th, 2008 issued by Ministry of Labour, War Invalids and Social affairs providing guidance on the implementation of some articles of Governmental Decree of 114/2002/ND/CP dated December 31st, 2012 on wages.
- Circular No. 18/2013/TT-BLDTBXH dated September 9th, 2013 issued by Ministry of Labour, War Invalids and Social affairs providing guidance on the implementation of management system for employee wages and rewards working for state-owned one member LLC.

- Resolution No. 234/2005/QD-TTg dated September 26th, 2005 issued by the Prime Minister on special system for workers, employees and social works in certain area of state-owned companies as renamed and revised on Article 1 and supplemented and succeeded by Resolution of 43/2012/QD-TTg dated October 12th, 2012.
- Other relevant legal documents.

Article 4. Working principles

Rules on wages, bonus payment are developed based on participation and consensus of Labor Union's permanent committee, and comments contributed by all staff, workers in the Company.

Chapter II

SPECIFIC RULES

Article 5. Sources of forming wages fund.

Sources of forming wages fund for staff, workers in the Company are defined based on business results of the Company, including:

1. Total wages fund is implemented in accordance with State's mechanism (V1):
 - Wages fund following wages price unit which is assigned by HPC
 - Wages fund supplemented in accordance with regulations of the Government

2. Wages fund adjusted from other business, services activities (including soft wages and 13th month salary (**if any**)) (V2)

Wages fund from above sources is called Total wages fund (V)

$$V = V_1 + V_2$$

Article 5. Method to define annual total wages fund of the Company

Annual total wages fund is total amount of money that the Company shall pay to all work types, including:

- Total salaries monthly paid to work types shall include wages, overtime wages, payment of wages for daily / seasonal work individuals, organizations providing daily or seasonal labors (if any).
- Revenue wages (if any) that the Company shall pay the labors in case that they complete and over complete targets in plans, and effectively do business.

Article 6. Annual wages of the Company.

1. Fixed salary (basic salary) paid to labors based on titles, taking into account of training qualification and labor quality.

2. Wages paid for night shift, overtime of labors based on actual accumulation of night shift works and overtime as regulations of the Government.

3. Additional wages (revenue wages) mean wages added due to over completion of targets in plans and effectively doing business.

4. Wages paid to daily or seasonal individuals or organizations which provide daily and seasonal labors (if any).

Article 7. Method of wages payment.

Pursuant to actual situation of the Company, the payment for labors shall follow: time-based payroll.

Article 8. Usage of total wages fund.

To ensure that total wages fund will not surplus the payment within the approved wages fund, and to avoid accumulating the payment of wages in this fund in ending months of a year (leading to unreasonable income distribution) or to prepare for too huge wages fund of the following year, the allocation of total wages fund for funds will be as following:

1. Wages fund for fixed salary (time-based) shall pay directly to staff, workers: This salary fund is used to pay monthly on the basis of ranks, titles, attendance, responsibility ratio, etc for staff and workers in the Company. The payment is equal to 100% of basic salary fund following the payroll of the Company (applying Decree no. 50/2013/NĐ-CP dated 14/5/2013 by the Government), which has been approved by competent authority. When the Government issues new regulations about wages, the calculation will be based on new issued one.

2. Wages fund for additional salary (if any): This wages fund is paid in advance in accordance with business results and settled at the end of the year on the principles:

- This will be paid to departments which reach over target revenue as well as to other indirect departments.

- Apart from fixed salary, additional salary to be paid will not be over 1.5 times of fixed one.

- Profit ratio of over target revenue is at least equal to planned profit ratio.

3. Standby wages fund for following year: After paying fixed and additional salaries, Leaders of the Company, in discussion with Salary council, will decide on the usage of standby fund and will deduct not over 17% of total implemented wages fund (including fixed and additional wages) to prepare standby fund for following year, in case that additional wages has been mentioned in item 2 of Article 8.

4. Additional wages:

a. Overnight, overtime wages to be paid for labors will be based on actual workload as regulations of the Government.

- Upon operation status of the Company and General Director, via Sapary council, to decide.

b. Additional wages is adjusted to reduce in the following cases:

- Revenue is not over assigned plan.

- Accounting of receivable additional wages which have been paid in advance in the year.

Chapter III

ALLOCATION OF WAGES, SYSTEM OF WAGES RANK, CRITERIA TO RANK, SALARY LEVEL, AND INCREASE OF SALARY LEVEL

Article 9. Formula of allocation of common wages

1. Monthly wages paid for staff and workers in time-based manner is defined as following:

Actual wage (V_{tl}) = Basic salary (V_c) + Allowances (V_{pc}) + Additional salary (V_m) – Payables in accordance with regulations (including Health insurance, Social insurance, Accident insurance and Personal income tax)

2. Basic salary (V_c) is calculated as following:

$$V_c = V_{tt} \times H_{l,pc} \times H_{dt}$$

Of them:

V_{tt} : Least salary level (as regulations of the Government)

$H_{l,pc}$: Salary ratio and allowances of positions as regulations of the Government.

H_{dt} : Special work benefit coefficient (This preferential benefit coefficient was adopted to ensure company income and to attract experts of higher skills)

3. Allowances: as regulations of the Government and the Company (per diem, telephone fee for leaders, meals, etc).

4. Additional salary (V_m):

- Overnight, overtime salary paid to labors based on their actual working time as regulations of the Government.

- Upon operation status of the Company and General Director, via Salary council, will decide.

Article 10. Salary ranking for leaders, managerial positions

1. Salary ranking for Chairperson, General Director, Deputy General Director, Auditor, Chief Accountant shall apply Decree no. 51/2013/NĐ-CP dated 14/5/2013 by the Government with following principles:

- Salary ranking is made following the rank of the Company in accordance with Salary ranking table of Chairperson, GD, Deputy GD, Auditors and Chief Accountant. When the rank of the Company is changed (upper or lower), the salary ranking shall be accordingly changed;

- For concurrent positions, only salary for the highest title will be paid;

- If titles following above-mentioned salary table are no longer assigned, salary will be ranked in compliant with new assigned position, without any reservation of previous ranked salary;

- Project owner (HPC) shall make decision assignment on positions following abovesaid salary table and salary rank for those positions.

2. During initial years when the Company is ranked 2nd class, salary table of leaders, managerial staff shall be as follows:

No.	Position	Salary ratio	
		1	2
1	Chairperson	6,97	7,30
2	General Director	6,64	6,97
3	Auditors, Deputy GD	5,98	6,31
4	Chief accountant	5,65	5,98

Article 11. Ranking salary for staff, workers in the Company.

1. Salary ratio, level, title allowance ratio for staff, workers in the Company: applying Decree no. 205/NĐ-CP as following:

a. Salary table of staff, workers in the Company:

No.	Position	Salary ratio, level											
		1	2	3	4	5	6	7	8	9	10	11	12
I .Wage table of Expert staff													
1	Senior officer, senior economic officer,	5.58	5.92	6.26	6.60								

	senior engineer													
2	Principle officer, principle economic officer, principle engineer	4.00	4.33	4.66	4.99	5.32	5.65							
3	Officer, Economic officer, engineer	2.34	2.65	2.96	3.27	3.58	3.89	4.20	4.51					
4	Junior staff, technician	1.80	1.99	2.18	2.37	2.56	2.75	2.94	3.13	3.32	3.51	3.70	3.89	
5	Documents management staff	1,35	1,53	1,71	1,89	2,07	2,25	2,43	2,61	2,79	2,97			
6	Service staff	1,00	1,18	1,36	1,54	1,72	1,90	2,08	2,26	2,44	2,62			

II. Wage table of employees

A. Train car services

1	Driver	4.45	4.87	5.32										
2	Assistant driver	3.70	4.10											
3	Manager on train cars (operation management)	4,10	4,46	4,87										
4	Train Car servicing staff	3,90	4,30	4,70										
5	Managers on passenger	2,51	2,90	3,33	3,85									

	cars and freight cars												
6	Servicing staff on train cars	1,65	2,08	2,62	3,17								
B. Station services													
1	Station commander	2,81	3,19	3,73	4,47								
2	Station supervisor	2,51	2,83	3,26	3,81								
3	Train switching operation manager	2,35	2,65	3,04	3,05								
4	Junction operators, coupler operators, and train car operators	2,05	2,44	2,84	3,30								
5	Station staff	1,55	1,96	2,48	2,99								
6	Maintenance worker for RS	1,78	2,10	2,48	2,02	3,45	4,07	4,80					
7	Maintenance worker for electricity	1,67	1,96	2,31	2,71	3,19	3,74	4,40					
8	Maintenance worker for track	1,67	1,96	2,31	2,71	3,19	3,74	4,40					
9	Ticket sales and servicing staff	1,84	2,33	2,73	3,20	3,72							

10	Security staff	1,75	2,12	2,56	3,04	3,62						
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b. Allowances for the Managers and Deputy Managers of the Company's departments

No.	Titles	Position allowance factor
I . Headquarters		
1	Manager and similar position	0.5
2	Deputy Manager and similar position	0.4
II . Operation Units		
1	President and similar position	0,6
2	Deputy president and similar position	0,5
3	Manager and similar position	0,4
4	Deputy Manager and similar position	0,3
5	Stationmaster	0,2

III. Officials, employees during probation shall receive a salary equal to 85% of scaled salary level of that job.

Article 12. Principles of raising wage level.

Application of Circular No. 12/2003/TT-BLDTBXH dated 30 May 2003 of the Ministry of Labour - Invalids and Social Affairs, Circular No. 18/2008/TT BLDTBXH 16 Sep. 2008 of the Ministry of Labour - Invalids and Social Affairs guiding the implementation of some articles of Decree No. 114/2002 / ND-CP of December 31, 2002 of the Government on wages.

1. Regime of raising wage scale

Regime of raising wage scale is based on clause 2, Article 6 of Decree No. 114/2002/ND-CP to implement as follows:

a) Every year, based on demands of the work, production and business situation, after consultation with the Trade union executive committee of the Company or temporary trade union executive committee or the company shall

make plan and implement wage scale increase for employees working in the company;

b) Basis to increase wage scale for the employees directly involved in production and business is the technical scale standard commensurate with undertaken works; for the specialty officials and serving employees, it is based on standards of specialty and working seniority in the company;

c) Conditions to consider raising wage annually as follows

- Must regularly complete assigned work with the number and quality of labor in the contract signed;

- Not in the time of executing labor discipline prescribed by the Labor Code and the labor regulations of the company;

- For the specialist, specialty officials and performance employee having duration of keeping current wage scale in enterprise at least 2 years (24 months) for the rank with the factor of starting wage (scale 1) of less than 2.34; having at least 3 years (36 months) for the rank with the factor of starting wage (scale 1) of from 2.34 or higher prescribed in Decree No. 205/2004 / ND-CP.

For those employees who directly engage in production and business and pass wage increase examination in accordance with the technical scale standard commensurate with undertaken works will be applied wage in accordance with the scale they achieve.

d) Cases of early increasing wage scale, shortening the time of increasing wage scale:

During the time keeping scale as stipulated in above point c, the employees who gain prize in the national or international profession, technical contests to which the company assigns; Labor Hero Title, Labour Medal, Nation-wide or sector or field emulators, merit certificate of the Prime Minister, of managing ministry shall be early increased wage scales as follows:

- Those who gain first prize and second prize of international contests shall be 2 wage scales increased.

- Those who gain first prize of national contests, third prize of international contest, those who are granted title of Labour Hero, Labor Medal with 1, 2, 3 ranks, nation-wide emulators in accordance with Decree No. 121/2005/ND-CP dated 30 Sept. 2005 of the Government stipulating details and guiding implementation some points of Emulation and award law and amendment of some points of Emulation and award law, shall be 1 wage scale increased early;

- The person who gains second prize in national contest shall be shortened by 2/3 of duration for wage increase review;

- The person who gains third prize in national contest or is granted merit certificate by the Prime Minister shall be shortened by no-higher-than 1/2 of duration for wage increase review;

- The person who is granted ministerial level merit certificate, sectorial-level emulor in two consecutive years shall be shortened one year (12 months) of duration for wage increase review;

The time when new wage scale is applied to those whose duration for wage increase review is shortened is as follows:

- Those whose wage scales is early increased one or more scales shall enjoy new wages from the date of decision and be maintained from the time keeping old wage scale to calculate time for next wage increasing;

- Those whose duration of increasing wage scales is shortened shall enjoy new wage from the date of decision on early wage scale increase and the next wage scale increase shall be effective since the date of decision on new wage.

d) Case of extending the duration of wage scale increase review:

During the time keeping certain wage scale, if the employees are being disciplined as prescribed in point b, clause 1, Article 84 of Labour Code, their duration of wage scale increase shall not be extended more than 6 months.

5. Regime of wage scale increase for the Chairman, General Director, Deputy General Director, Auditor and Chief Accountancy shall be based on conditions and standard of wage scale increase as follows:

- Keep wage scale 1 from 5 years or more;
- Complete annual production and business plan;
- Not violate regime of responsibility in accordance with provisions on the Labour Code;
- Not in the discipline duration.

In case the management officials of the company gain achievement under provisions of the above clause d, their wage scale shall be early increased or shortened its review duration. If they are reprimanded or warned or more, their review durations shall be extended 12 months over the prescribed duration.

Chapter IV

WAGE PAYMENT FOR CASES IN ACCORDANCE WITH GENERAL PROVISIONS

Article 13. Wage payment for difficult cases

1. In case of difficulties due to unexpected demand of production, business and services, the employee is mobilized to carry out work other than their profession (not exceeding 60 days / year); the wages paid to these employees with the new work shall not be lower than the old one.

2. In case of difficulties in production, business and services, revenue and profit do not meet the plan, wages of the employees shall be adjusted to reduce but not lower than the local minimum salary stipulated by the State.

Article 14. Wage payment for individual leave and annual leave

1. Wage of the employees in the annual leaves, nursing leave in accordance with standards, and paid individual leave (in accordance with Article 78 of the Labour Code) shall be 100% of basic salary

2. In case at request of the employer and accepted by the employee, if the employees does not take annual leaves in accordance with standards prescribed by the Labor Code, the employer will pay a proportion corresponding to the number of paid leave days that are not taken as prescribed.

Article 15. Payment of wage in the learning and training days

1. Wage of the employees for days on education and trainings to enhance professional qualification and workmanship in the country or overseas that the company assigns in accordance with policy and plan of training cadres directly for work requirements or cadre planning shall be paid as follows:

a. The employees participate in learning non-consecutively (accumulated less than 01 month/quarter) shall enjoy 100% of wage (basic salary and extra salary) during learning days.

b. The employees participate in learning consecutively 01 or more shall enjoy 100% of basis salary during learning days.

c. The employees participate in learning at their own desire during working time (accepted by the General Director) shall not be paid wage for the learning time.

d. The employees unilaterally terminate the labor contract must compensate the training costs.

Reimbursement amount shall be decided by the General Director after consultation with the Train Union Executive Board on the basis of the current regulations of the state.

Article 16. Payment of wage for leaves due to occupational accident

Wages of the employees during the days-off due to occupational accidents and occupational diseases (by confirmed by the health competent agency) shall

be paid in compliance with the provisions of the Labor Code and the documents guiding the implementation of the Labor Code.

Article 17. Payment of wage for maternity and pregnant leave

Leaves for maternity, abortion, prenatal check-up, family planning (according to the standards and requirements of family planning movement) shall be in compliance with the current Social Insurance.

Article 18. Payment of wage for sick leaves

The employees who have certificate to take days off by doctors shall be paid allowance by Social insurance fund in accordance with current regulations.

Article 19. Payment of wage during termination of work

Under the provisions of the law, wage for duration of work suspension shall be paid as follows:

1. If it is due to fault of the company, the employee shall be paid 100% of wage stated in the contract labor.
2. If it is due to fault of the employees, the employees shall not be paid, other employee in the same department or unit have to stop working shall be paid 100% of wage stated in the contract labor.

Article 20. Payment of wage during waiting for regime settlement

The employees who are in the time of retire or disablement under the regime shall be paid 100% of the basic salary of the job title in 03 months. The previously unpaid wages and bonus shall be paid till the effective date of the decision.

In case the employee is died (while performing labor contract), the legal heirs shall be paid amount of money equivalent to 03 month title wage of the dead in accordance with the work he or she undertook before death.

Article 21. Payment of wage for the time being job suspended

The employees who are in the time of temporary work suspension, detention, seizure related to labor relations (decided by competent level) shall be paid amount of money equal to 50% of the regime wage. When the period of suspension, temporary detention, seizure is expired, if the employees are guilty and disciplined, they must repay the advance amount (to be deducted from the wage for working after a period of suspension, detention, or seizure), if the employees are not guilty, they shall be paid 100% of title wage for the days of temporary suspension, detention or seizure.

Wage paid to the titles in the Article 15, 17, 19, 20 is based on that person's wage in the month before leave under the condition of sufficient working days and good quality achievement.

Article 22. Payment of wage for job quitting

The employee who quits his/her job due to personal expectation, severance shall be paid in accordance with the current regulations.

Article 23. Payment during probation time

The employees who are in probation time shall be paid 85% of initial wage of the person doing similar works.

Probation duration for basic of wage payment:

- The title that requires university qualification or equivalent or higher: 60 days
- The title that requires qualification that is lower than university: 30 days

After probation, based on exam and evaluation results by the person in charge of the unit, the General Director shall review and decide to enter the labour contract in accordance with agreement of the both sides.

Chapter V**ALLOWANCES AND INSURANCE****Article 24. Allowances**

In addition to the monthly main wage based on the wage salary scale system of the company and in accordance with the classified rack/scale, the officials and employees shall, depending on each case as regulated, monthly enjoy one or some of the following allowances:

1. Allowance for job responsibility

Object and level of allowances to be applied is based on the provisions of Circular No. 03/2005/TT-BLĐTBXH

2. Allowances for mid-shift meal, travel, telephone.

These allowances are to assist the officials and employees to cover costs of mid-shift meal, travel, and telephone. Object and level of allowances to be applied shall be decided by the General Director based on the current regulations.

3. Allowance for business trip

This allowance is applied to the officials, employees who are assigned to go on business trip in other provinces, cities and overseas. Object and level of allowances to be applied shall be in compliance with Circular No. 97/2010/TT-BTC and Circular No. 102/2012/TT-BTC of the Ministry of Finance.

4. Toxic allowance

Object and level of allowances to be applied shall be based on the current regulations of The Ministry of Labour - Invalids and Social Affairs.

Article 25. Overtime and working at night salary

In addition to the daily working hours stipulated in the Rules on working of the Company, if the officials and employees are required to work overtime or at night shall be paid as follows:

- On weekdays, equal to 150% of basic salary;
- On weekly days-off, equal to 200% of basis salary;
- On holidays and days-off with pay, equal to 300% of basis salary

+ If overtime is compensated by times, the company shall only pay the difference compared to the wages of the currentwork of the normal working day.

+ All cases of working overtime must be reported to the General Director of the Company for approval.

The other cases, the person in charge of the unit shall prepare request to Directors of the company for decision based on the actual situation.

Article 26. Bonus

Annual bonuses shall be deducted from Bonus –welfare Fund or bonuses from other sources decided by the General Director. Bonuses are defined as follows:

- Bonus shall be given to individuals, groups that complete exceedingly the assigned plan or have initiatives to improve technique, improve labor productivity, and revenue for the company or other reasons. Reasons for, reward and reward level and form shall be decided by the Director General after consultation with the Trade Union Executive Board.

- Bonus for Holidays, Tet Holiday: Level of bonuses shall be specified by the Director General. Form of bonus payment shall have specific criteria prescribed by the State and the specific conditions of the company.

Bonus system for security enhancement:

- Based on Resolution of 234/2005/QD-TTg dated September 26th, 2005 issued by the Prime Minister on special system for workers, employees and social works in certain area of state-owned companies as renamed and revised on Article 1 and supplemented and succeeded by Resolution of 43/2012/QD-TTg dated October 12th, 2012...

1. 20% of salary amount applicable for each position will be applied for the following cases:

1. Employees and staff engaged in operation of repairs, testing and modification of electric facilities, and management and operation of electric power transmission system of 110 Kw or more voltage.

2. *Employees and staff engaged in management and operation of information network system and computer network system through electric power system.*

II. 15% of salary amount applicable for each position will be applied for the following cases:

1. *Employees and staff engaged in management and operation of electric power transmission system of 110 Kw or less voltage.*

2. *Technical maintenance staff of electric power system.*

3. *Train operation instructors, train car managers, train drivers, assistant to train drivers, station staff, train switching operation manager, train car coupling operation staff, patrol staff on rails, bridges and tunnels, and turnout operation staff*

Article 27. Insurance

The Company shall apply insurance payment of social insurance and health insurance in compliance with the current regulations.

Chapter VI

IMPLEMENTATION ORGANIZATION

Article 28. Establishment of Salary Council

The General Director of the company shall decide to establish Salary Council to organize and implement salary regime of the company.

Members of the Salary Council shall include:

- Chairman of the Council: General Manager
- Vice Chairman of the Council: Chairman of the Trade Unit
- Standing Member: Manager of Organization Human Resources Department
- Secretary of the Council: Officer in charge of Human Resources - Organization - Human Resources Department.
- Members of the Council: Representatives of the Party Committee, Managers of the Departments, Division and Units appointment by the General Director.

Article 29. Responsibility of the Salary Council

- Draft regulations on management and distribution of wages and incomes; hold discussion and report to the Company; implement issuance and application.
- Announce wage increase plans; organize examinations for wage increase for the employees directly working in the enterprises; review annual wage increase and early wage increase for the officials and employers.

- Propose annual meeting schedule (at least 02 times) to review all wage issues, discuss problems as well as opinion of the officials and employees and the General Director will review and decide to amend regulations properly.
- Decide on wage issues in accordance with the issued regulations.

Chapter VII

IMPLEMENTATION

Article 30. This rule shall take effect from the date that the General Director signs on issuance decision and develop, register with the competent agency in accordance with the Labour Code.

Article 31: During implementation, this rule is subjected to be supplemented and amended suitable with the actual situation of the Company.

All supplementation and amendment shall take effect for implementation after being approved by the Salary Council, General Director signed on issuance decision and registered with the competent agency in accordance with the current regulations.

Hanoi, day month year

GENERAL DIRECTOR

(Sign, stamp)

Hanoi City People Committee
Hanoi Metro One Member LLC

THE SOCIALIST REPUBLIC OF VIETNAM
Independent – Freedom – Happiness

DRAFT

**REGULATIONS
ON REWARD AND EMULATION
HANOI METRO ONE MEMBER LLC**

**Chapter I
GENERAL PROVISIONS**

Article 1. Legal basis

- Decree No. 09/2009/ND-CP, dated February 5, 2009 promulgating the Regulation on the financial management of State-owned enterprises and management of State capital invested in other enterprises and contributions of the individual, collective in the country and overseas and other legal income.
- Decree No. 42/2010/ND-VP of April 15, 2010, detailing few articles of the Law on Emulation and Reward and providing guidance on its enactment and amending and supplementary laws on few articles of Law on Emulation and Reward.
- Other related legal and regulation documents

Article 2. Scope of adjustment, subject of application

1. Scope of adjustment:

a. The regulations specifies contents of emulation, organization of emulation movement, standards and titles of emulation; forms, subjects, standards of reward; process, procedure, and request document for reward; emulation and reward fund; rights and obligations of rewarded individuals and collectives; violations and settlement of violations; claim, accusation and settlement of claim; accusation of emulation and reward.

b. Other contents of emulation and reward that are not mentioned in this document shall be implemented in accordance with the existing provisions of Law on emulation and reward.

2. Subject of application:

The Regulations shall be applied to hold emulation and reward movement for individuals and collectives under the following subjects:

a. Individuals:

Individuals are officials and employees (indefinite contracts and definite contracts) in Departments, Divisions, and Units of Hanoi Metro One Member LLC (hereafter referred to as the Company);

b. Collectives:

Collectives are Departments, Divisions, and Units of the Company;

Article 3. Principles of Emulation and reward

Execution of emulation and reward activities shall follow the general principles of the State and Hanoi City People Committee, concretely:

1. Principles of Emulation:

a. Emulation must have specific goals with a view to creating motivations to attract and encourage all individuals and collectives in the company to bring into full play of traditions of patriotism, creative dynamism and effort to complete assigned tasks, contributing to the development goals of the Company and always for the goal of "rich people, strong country and a fair, democratic and civil society.

b. Voluntary, self-awareness, publicity; solidarity, cooperation and together development; every individual, collective participating the emulation movement must register otherwise emulation will not be considered and recognized the title of emulator.

2. Principle of reward evaluation:

a. Reward must be accurately, regularly and timely conducted, open voted, justice, democratic and ensuring the achievement proper with standards for each title emulation and reward forms; have effect to motivate individuals and organizations to promote patriotic spirit, to eager emulation of production; set examples for individuals and collective's learning

b. Reward with reasonable form shall be considered based on the influent level of achievements, reward respective to achievement, not necessarily in the order for low form to high form of reward; achievement getting in difficult conditions and having greater influence may be considered and proposed a rewarded of higher levels; achievement is not accumulated, not taking the form of the previous reward for raising the next one; it is not necessarily that following reward is higher than the previous one; rewards shall not be coincided.

c. Reward shall be focus on individuals who directly involves in production and work; collectives of units that operate in the key fields of the Company; individuals and collectives that work in difficult and hard conditions;

- d. The levels that launch emulation and reward shall mainly carry out reward; in case there are especially excellent achievements, such achievements shall be proposed to the senior for reward.
- e. Close combination between spiritual encourage and material benefits

Chapter II

EMULATION AND TITLES OF EMULATION

Article 4. Form of organizing emulation movement

- 1. Regular emulation:**
 - a. It is an emulation form based on the assigned functions and tasks of individuals and collectives to organize and launch the movement in order to well perform daily, monthly, quarterly and yearly works of the agency, Departments, Divisions and Units.
 - b. It is applied among individuals in the same collective, among collectives of the same unit, or among units with the same or similar functions and tasks and features.
 - c. It is necessary to clearly define purpose and requirements and specific targets and carry out registration and agreement of emulation among individuals, collectives and units. By the end of the planned year, the unit shall summarize and review titles of emulations and rewards for the individuals, collectives having excellent achievements.
- 2. Stage, subject emulations:**
 - a. It is an emulation form aiming at well dealing with key and unscheduled tasks during certain duration or dealing with difficult, urgent works, weak and outstanding works, works that a large member of people expects to deal with, other forms of emulation launched and implemented by the City's People Committee, Departments, Fatherland Front in order to well carry out focus missions in the certain time towards the great holidays of the nation, the city and the Company.
 - b. Stage emulation shall be launched when purpose, requirement, targets and time are defined in order to complete the set goals and missions.

Article 5. Contents of emulation movement organization

- 1. In execution of Article 7 of Decree 42/2010/ND-CP dated 15/4/2010 of the Government detailing the implementation of some articles of the Law on Emulation and reward and the Law on Amending and Supplementing a Law on Emulation and reward, the contents of movement organization must be linked to the political tasks of Hanoi City and of the Company.

2. Form of emulation-launching organization shall be practical, diversified and attractive for people enthusiastically to participate. The identification of emulation target shall be feasible. The target set shall be from the progressive level so as each individual, collective to try effort for completion. It is focused on advocacy of participants and conditions for ensuring spirit and material for the movement while enhancing inspection and supervision of implementation process, discovering new elements, typical development, instructing to draw experience promptly. Any individual or collective who can early reach the emulation target shall be praised and rewarded timely.

3. Emulation movement shall be launched in compliance with the provisions of law, ensuring solidarity, cooperation and together development.

Article 6. Titles of emulation

1. Titles of emulation for collective shall include the following forms:
 - Emulation flag of the Government; Emulation flag of the City's People Committee;
 - Excellent labor collective; Progressive labor collective.
2. Titles of emulation for individual shall include the following forms:
 - National emulator flag, city emulator, local emulator;
 - Progressive labor.

Article 7. Standards and number of rewards of the title of emulation for collective

1. Emulation flag of the Government:

“Emulation flag of the Government” shall be granted annually for the excellent typical collective among the leading collectives of the emulation Clusters and Blocs of the City in the fields and carrers of new model for other collectives learning, meeting standards as prescribed in Article 25 of the Law on Emulation and Reward;
2. Emulation flag of the City's People Committee:
 - a. “Emulation flag of the City's People Committeeshall be granted to the collective that gains the excellent achievement of the City's emulation movement, reviewed and voted by the Clusters and Blocs in accordance with Article 26 of Law on Emulation and Reward;
 - b. Emulation flag of the City's People Committee based on the subject shall be granted in the subject emulation movements of the City.
3. Title of “Excellent labor collective”:
 - a. The collective requested to be granted to the title of “Excellent labor collective” shall be the typical, excellent collective selected from one of the “Progressive labor” collective, satisfying standards as prescribed in Article 27 of the Law on Emulation and Reward;

b. The ratio of the collectives requested to be granted to the “Excellent labor collective” shall not be higher than 15% of the collectives gaining the title of “Progressive labor collective” of the unit.

4. Title of “Progressive labor collective”:

a. It is the collective selected among the collectives that complete their tasks and meet the standards as prescribed in Article 28 of the Law on Emulation and Reward

b. The ratio for review to grant the title of “Progressive labor collective” shall be stipulated by the company suitable with actual situation.

Article 8. Standards and number of rewards of the title of emulation for individuals

1. Title of “National emulator”:

a. Title of “National emulator” shall be granted to the individual having typical, excellent achievement among the individual who twice consecutively received Title of “City emulator”; having initiatives and working solutions, study subject of this individual that have nation-wide influences;

b. Evaluation and recognition of influence of initiatives and working solutions, study subject shall be executed by the City-level council of science and initiative.

2. Title of “City emulator”:

a. Title of “City emulator” shall be annually granted to the individual having typical, excellent achievement among the individual who three times consecutively received Title of “Local emulator”; having initiatives and working solutions, study subject, application of new technology of this individual that have city-wide influences;

b. Number of emulations for the title of “City emulator” to be requested annually shall not be higher than 10% of total individuals of the Company receiving the Title of “Local emulator”. If 10% is not enough to present 01 individual, it is allowed to submit maximally 01 individual;

c. The Council City-level of Science and Initiative shall review and recognize the initiatives, solutions, study subject, and application of new technology.

3. Title of “Local emulator”:

a. Title of “Local emulator” shall be granted on the occasion of year summarization of the Company to the typical, excellent individual who achieves the title of “Progressive labor”; having initiatives, working solutions, study subject, application of new technology, new policy to increase productivity and work efficiency.

b. The ratio of the Title of “Local emulator” shall not be higher than 20% of the number of the Company’s officials and employees who achieve the title of “Progressive labor”.

c. Establishment of the Council of Science and Initiative shall be decided by the General Director. Members of the Council shall include those who have professional, and technical qualifications able to evaluate and appraise improvement initiatives or solutions, subjects in management and implementation of the agency's and unit's tasks.

4. Title of "Progressive labor":

a. This title shall be granted on the occasion of year summarization of the Company to the officials and employees who work in the departments, divisions and units of the Company, actively participate in the emulation movements launched by the Company and unit and meet the standards as prescribed in Clause 1, Article 24 of the Law on Emulation and Reward.

b. The women who are on maternity leave under the regulations of the State; those who act bravely rescuing people and property, are injured and need treatment, or nursing in accordance with the conclusions of the medical institution shall be also considered for the title "Progressive Labor"

c. Individuals who attend school, short-term training under 01 years, if having good or better results, well observing the rules of training facilities, these individuals' training duration shall be combined with their working time to review for the title "Progressive Labor". In case of training 01 years or more, with learning results ranging from good level, these individuals shall be classified the title equivalent to title "Progressive Labor" as a basis for consideration and reward of the other titles or forms of emulation.

For individual who is shifted his/her work, the unit shall be responsible for review and vote the title of "Progressive labor" based on the comments of the old unit (for the case of working in the old unit 06 months or more).

d. "Progressive labor" shall not be granted to the following cases: not register in emulation; just be recruited less than 10 months; take days off from 40 days; be under administrative penalty; be reprimanded.

e. Ratio to review for granting the title of "Progressive labor" shall be decided by the Departments, Divisions and Units suitable with the actual situation.

Chapter III

FORMS, SUBJECTS AND STANDARDS OF REWARD

Article 9. Concept of reward and form of reward

Followed the Point II, Clause 1 of Circular No. 02/2011/TT-BNV dated 24/01/2011 of MOHA guiding implementation of Decree No. 42/2010/ND-CP dated 15/4/2010 of the Government detailing some articles of Law on emulation and reward and law on amending and supplementing some articles of Law on emulation and reward.

Article 10. Forms of reward decided by the General Director or submitted by the General Director to the higher levels for reward.

1. The General Director decides forms of reward (local level) for the following titles:

- a. Merit Certificates:
 - Progressive labor;
 - Progressive labor collective;
 - Other titles as stipulated.
- b. Certificates:
 - Emulator;
 - Good persons, good works;
 - Excellent Collective;
 - Other titles as stipulated.

2. The General Director submits to the higher levels for reward:

a. Based on the local-level title of reward, to submit the City's People Committee for decision on forms of reward "Merit Certificate", "Certificate" of the city level for the following titles:

- Emulator;
- Good persons, good works;
- Excellent labor collective;
- Other titles as stipulated.

b. To request the City's People Committee to submit the Government to decide forms of reward of the State level:

- National emulator;
- The First Class, Second Class and Third Class Labor Medals;
- Other titles as stipulated.

Article 11. Registration of emulation title

1. Every year the Company shall plan to organize Emulation-Reward for individual and collective to register emulation and emulation title in the year for striving.

2. Based on the Emulation – Reward plan of the Company, Departments, Divisions and Units shall send registration application of the individuals and collectives to the Emulation and Reward Council of the Company for supervision and as a basis to review titles of emulation in the year.

Article 12. Rights and Obligations of individuals and collectives to be rewarded.

1. Right:

- Individuals, Collectives that are granted the title of Emulation, reward forms shall be entitled to retain, use and display reward object;

- To be considered salary increase before the time-limit under the current regulations of the the City's People Committee on wage increase before

the time-limit thanks to excellent performance achievement of the officials and contractual employees in the units of the City's People Committee;

- To be prioritized assigning to study, learn, work, raise their professional qualifications in the country and overseas;
- The title of emulation and reward forms shall be the basis for the assessment, plan, appoint, and re-appoint staffs.

2. Obligations:

- Individuals, collectives that are recognized with the title of emulation and commendation forms by all the levels shall be obliged to preserve reward objects and shall not allowed letting others borrow to take illegal actions.

- Individuals and collectives shall usually maintain the titles that have been awarded.

Article 13. The Emulation and reward council of the Company.

1. The Emulation and reward council of the Company shall be the council consulting for the Leader of the Company in the field of emulation and reward within the Company or submission to the higher level for reward if the reward is higher than the local level. The Council shall work in accordance of collective, democratic and central principles. When meeting is held, it is required to have at least two third of the members of the council to participate, then it is deemed to be valid. In unexpected cases, the chairman of the Council may ask the members of the council in written document for their comments, acceptance of at least two third of the council member shall be valid.

2. The Emulation and reward council of the Company shall be decided by the General Director to establish, including:

- General Director : Chairman of the Council
- Chairman of the Trade Union of the Company: Vice Chairman of the Council
- Deputy General Directors, Manager of Human Resource and some Managers of Departments, Divisions and Units of the Company: Members of the Council.
- The Standing Unit of the Council: Human Resource Department
- Secretary of the Council: the official in charge of emulation and reward activities.

3. Functions, tasks and rights of the Standing Unit of The Emulation and reward council of the company:

a. Advise the General Director and the Emulation and reward Council of the Company to realize the guidelines and policies of the Party and State Laws on emulation and reward activity of the Company;

b. Perform the standing tasks of the Emulation and reward. All contents of emulation and proposal of reward forms from city level or higher, guidance of rewards for comprehensive achievement, subject, unscheduled shall

be performed, evaluated and submitted by the Standing unit of the Emulation and reward Council to the Leader of the Company for decision and approval.

c. Advise the General Director on development of program, plan, emulation and reward contents in order to successfully perform production and business task in the year. Assist the General Director in organizing emulation movement and timely carrying out regular and irregular emulation and reward activities in the planning year;

d. Propagate and disseminate, instruct in organizing and supervising the units in the Company to perform activities of emulation and reward and assist the General Director in preliminarily summing up, summarizing, finding out the typical, concluding and sharing experience, and replicating widely emulation and the advanced models; propose to innovate emulation and reward activities; review and evaluate proposed forms of reward to ensure accurate and timely manner in accordance with law.

e. Conduct inspection of implementation of regulations and policies on reward; participate in dealing with claims and accusations of emulation and reward activities. Build up and manage Emulation and Reward Fund of the Company.

f. Manage and distribute reward items of the Company, carry out organization of offering rewards in accordance with the provisions of the laws. Execute procedure of allocating and changing lost, damaged items and determine reward forms for individuals and collectives.

g. Based on the regulations of the higher, issue guidance documents to the departments, divisions and units of the Company for implementation.

Article 14. Standards of the Company Titles.

1. Title of “Local emulator”:

Title of “Local emulator” shall be granted for the individuals who achieve the following standards:

- The officials who excellently complete their tasks;
- Actively participate in emulation movement and union movement;
- Well perform guidelines and policies of the Party and the laws of the State;
- Exemplarily abide by the rules and regulations and actively participate actively in company development;
- Having worked at the company full 10 months (200 days or more, in accordance with working mode).

2. Title of “Progressive labor”:

The titles of “Progressive labor” shall be granted to the officials, staffs and contractual employees who meet the following standards:

- The officials who well complete their tasks;
- Actively participate in emulation movement and union movement;

- Well perform guidelines and policies of the Party and the laws of the State;
- Exemplarily abide by the rules and regulations and actively participate actively in company development;
- Having worked at the company full 10 months (200 days or more, in accordance with working mode).

3. Title of “Good person, Good work” of local level:

Title of “Good person, Good work of local level” shall be granted the officials, staffs and contractual employees who meet the following standards:

- Well complete assigned tasks;
- Nonstop learning to enrich political and professional qualifications.
- Build up civilized and happy family. Bring up and educate children well. Family is recognized to be civilized family. Actively participate in social activities, especially in residential cluster;
- Do good work every day, actively fight and limit bad works in the family and society, be loved, trusted and honored by the community.
- Actively participate in emulation movement and union movement, be aware of building the company strongly;
- Other standards in accordance with the Rules on review for the title of “Good person, Good work” of the the City’s People Committee if any.

4. Title of “Excellent Collective of the local level”:

Title of “Excellent Collective of the local level” shall be granted to the collectives that meet the following standards:

- Be the typical collective among the collectives having the tile of “Progressive labor collective”, with at least 70% of individual having titles of “Local emulator” and “Progressive labor”;
- Internally unite, always take care of and help each other for together progress, do many good works;
- Actively participate in social activities, have many typical achievements in the emulation movement of the company;
- No individuals in discipline “Warning or higher”;
- Other standards in accordance with the Rules on review for the title of “Good person, Good work” of the City’s People Committee if any.

5. Title of “Progressive labor collective”:

Title of “Progressive labor collective” shall be granted to the collectives that meet the following standards:

- Well complete tasks;
- Actively participate in emulation movement and union movement;
- Actively develop mechanism, policy, scheme, regulation, rules etc. approved by the complete levels;
- Have over 50% of individual in the collective achieves the title of “Local emulator”, “Progressive labor” and none of them are in disciplined from warning or higher.

Chapter IV

DOCUMENTARY PROCEDURE AND PROCESS OF REWARD REVIEW

Article 15. Documents to request forms of rewards

1. Documents of the Emulation titles under reward authority of the General Director shall include:

- Submission letter to request reward of the department or unit enclosed with the list of individuals and collectives proposed to be rewarded;
- Minutes of Meeting of the department, unit (in which individual order is listed in accordance with their scores and the titles to be rewarded); In case of reviewing to grant titles of emulation of all levels, it is required to get acceptance votes of the members from 75%.

- Score sheet of individuals and collectives proposed to be rewarded (with certificate of Managers of Departments and Units) except irregular merit or subject merit;

- Copies of reward certificates received within the year if any;
- Summary of individual, collective achievements (with certificate of the unit manager). For individual proposed for “Emulator” of all level. In the report on achievement, it is required to indicate clearly contents of the subjects, initiatives, and solutions for working and management that bring practical effectiveness approved by the competent levels.

2. For the titles of emulations under reward authority of the City’s People Committee, Government and State: Documents shall be in compliance with Law on Emulation and Reward, Government’s Decrees and Guidance of the state competent agencies.

Article 16. Process of reward review.

1. Departments, divisions and units shall organize to review and rank individuals and collectives for titles of emulation of the local level before 20 December annually. Unscheduled and subject-based reward shall be in accordance with the time instructed in the year.

2. Standing unit of the Emulation and Reward Council of the Company shall be responsible to receive documents of requesting for reward, summarize and submit to the Emulation and Reward Council for review and decision.

3. Organization and offering types of rewards shall be executed in accordance with the current regulation to ensure to make it formal, scientific, civilized, to create effervescent spirit and encouraging and education effect, and avoid showing off and wasting.

Chapter V

EMULATION AND REWARD FUND

Article 17. Source and fund extract amount

Expense source for reward shall be extracted from the Emulation and Reward Fund of the unit in accordance with Decree No. 09/2009/ND-CP, dated February 5, 2009 promulgating the Regulation on the financial management of State-owned enterprises and management of State capital invested in other enterprises and contributions of the individual, collective in the country and oversea and other legal income.

Article 18. Management and use of the Fund

1. Fun management: execution in accordance with regulations of Article 69 of Decree No. 42/2010/ND-CP of the Government.
2. Fund use: execution in accordance with regulations of Article 68 of Decree No. 42/2010/ND-CP of the Government.

Article 19. Reward amount and preferential

3. Reward amount: execution in accordance with regulations of Articles 70 and 71 of Decree No. 42/2010/ND-CP of the Government.
 - a. At the same time, the same achievement, if one object achieves many emulation titles with different bonuses, this object shall only receive the highest bonus.
 - b. At the same time, if one object achieves many emulation titles, the times to achieve these titles are different emulation; this object may receive bonuses of the different emulation titles.
 - c. At the same time, if one object receives emulation title and achieves reward form, this object shall receive both bonus of emulation title and form of reward.

Chapter VI

SETTLEMENT OF EMULATION AND REWARD VIOLATION

Article 20. Violation behavior and settlement form for rewarded individual and collective.

In implementation of Article 80 of Decree No. 42/2010/ND-CP of April 15, 2010, detailing a number of articles of the Law on Emulation and Reward and the Law on Amending and Supplementing a Number of Articles of the Law on Emulation and Reward.

Article 21. Claim, accusation and settlement of claim and accusation of emulation and reward

In implementation of Articles 82 and 83 of Decree No. 42/2010/ND-CP of April 15, 2010 of the Government

Article 22. Procedure and documents to revoke or recover titles of emulation and forms of reward

1. Revocation of emulation title and reward form shall be carried out in accordance with the following procedures and documents:

a. Submission letter of the Manager of the Department, Division and Unit of the Company sending to the General Director.

b. Report on summary of basis and reasons to revoke the title of emulation or form of reward.

2. Recovery of Revocation of emulation title and reward form shall be carried out in accordance with the following procedures and documents:

a. Submission letter of the Manager of the Department, Division and Unit of the Company sending to the General Director.

b. Report on summary of basis and reasons to recover the title of emulation or form of reward

Chapter VII

IMPLEMENTATION PROVISIONS

Article 23. Responsibilities of Departments, Divisions and Units

1. The Managers of Departments, Divisions and Units shall be responsible in front of the Emulations and Reward Council for registrations and review of emulation within their management in proper with the plan and progress.

2. Be responsible for the accuracy of documents and report of achievement for request of reviewing reward for collectives and individuals of their units.

3. Declaration and report that are untrue shall be settled in compliance with Article 19 of the Regulations.

4. Manage and keep all documents related to the activities of Emulation and Reward of their units regulated.

Article 24. Responsibilities of individual

1. The Individual who is proposed to be rewarded shall be responsible for the accuracy for declaration and report of achievement for reward request. If

the individual is deceitful in declaration and report of the achievement to be rewarded, he or she shall be disciplined as Article 19of the Regulations.

2. The individual who is confirmed to be untrue or fake documents for others to request for reward; those who take advantages of their titles or power to decide on reward illegally shall be disciplined as stated in Article 19 of the Regulations.

Article 25. Implementation

1. All official and employees (definite or indefinite contracts) in the Departments, Divisions and Units shall be responsible to implement the Regulations.

2. During implementation, if there are any difficulties, the Departments, Divisions and Units shall inform the Standing Unit of the Emulation and Reward Council for summarization and submission to the General Director for timely adjustments./.

GENERAL DIRECTOR

Hanoi City People Committee
Hanoi Metro One Member LLC

THE SOCIALIST REPUBLIC OF VIETNAM
Independent – Freedom – Happiness

DRAFT

WORKING RULES

HANOI METRO ONE MEMBER LIMITED LIABILITY COMPANY

Chapter I GENERAL RULES

Article 1. Legal basis

- Labor Code 10/2012/QH2013 dated 18/6/2012;
- Other relevant legal documents.

Article 2. Scope of regulation and subjects of application

1. These rules provide principle, liability regime, working mode, working relationships and work resolution sequence of departments, divisions and units of Hanoi urban railway operation and maintenance one member limited liability company (hereinafter referred to as the Company).

2. All officers, officials, employees, departments, divisions and units of the Company; organizations and individuals working relationship with the Company are subject to these rules.

Article 3. Definition

In these rules, the words and phrases are understood as follows:

1. Hanoi urban railway operation and maintenance one member limited liability Company is referred to as the Company.
2. The board of General Directors includes General Director and Vice General Directors.
3. Leaders of the units include Office Manager and Managers of departments, divisions and units under the Company.
4. Units and individuals assigned to preside over are the units and individuals mainly take responsibility and proactive coordinate in work organization and implementation.

Article 4. Working principles

1. Hanoi urban railway operation and maintenance one member limited liability company is 100% State owned enterprise directly under the Hanoi City People Committee, performing functions and duties of management and operation of urban railway lines in Hanoi and performing other duties as assigned by Hanoi City People Committee.

2. The Company is working under the Leader mode; all activities of the Company are subject to the provisions of law and working rules of the Company. Officers, official, employees of the Company have to handle and carry out their works properly in accordance with their responsibilities and competence

3. In work allocation, each work is only assigned to the hosted unit, one person is mainly in charge and responsible. If the work is already assigned to that unit, the head of the unit must bear primary responsibility for their assigned work. The concerned departments and units shall cooperate to solve common tasks and contribute opinion with functions and powers as prescribed. (Private authorities in implementation of the work are regulated at Appendix 1. Requirements on criteria of positions is stipulated in enclosed Appendix 2).

4. Ensure compliance with order, procedures and duration for work settlement in accordance with laws, programs, plans, schedules and working rules, except for extraordinary cases or other requirements of the superior agency.

5. Ensuring democracy, clear, transparent and effective in all activities.

Chapter II

RESPONSIBILITY AND SCOPE OF WOTK AND WORK RELATIONS

Article 5. Responsibilities and scope of work of the General Director

1. The General Director is the Leader of the Company with the following responsibilities:

a. Direct and manage the operating activities of the Company; under the direction of the Hanoi City People Committee and the instruction of specialty and profession of a number of Central Ministries and Sectors. Take responsibility by law and to Hanoi City People Committee for the entire operation of the functions, duties and powers of the Company and work under the functional competence of the General Director, even when already assigns or delegates to the Deputy General Director and execution of assignment of the officer, officials and employees under management authority prescribed by law.

b. Based on work requirements, the General Director decides to establish, dissolve, and assign functions, tasks to subordinate units of the Company, after Hanoi City People Committee's approval. Based on mission requirements, the leaders and officers are alternated in the subordinate units in order to meet the requirements of the assigned tasks. Working Group is established in accordance with task requirement in each period. The activities of the Working Group are on a basis of part-time mode.

c. Steering guidance, inspection of the operation of the subordinate unit under the Company in the implementation of laws, assigned and level-allocated tasks of management field.

d. Sign documents under the competence of the General Director

2. Scope of work of the General Director

a. Work under competence prescribed in these working rules and relevant legal documents. Works assigned and authorized by the chairperson of Board of Members.

b. Decide to assign tasks, regulate and coordinate in the process of work settlement between the General Director and Deputy General Director and subordinate units of the Company. General Director decides the works under the resolve of the Deputy General Director in the following cases:

- When work is urgently required to be resolved but the Deputy General Director is absent;

- When Deputy General Director is unable to resolve;

- When the Deputy General Directors have different opinions;

- When Deputy General Director does not resolve the work properly with the policy and the direction of the General Director.

c. Assign a Deputy General Director to be in charge of the Standing Deputy General Manager to assist the General Director in controlling common works of the Company.

d. Convene and chair regular meetings and extraordinary meetings within the management scope of the Board. Attend meetings, conferences, and seminars convened by the superior levels. Depending on the contents of the meetings, it is possible to authorize the Deputy General Director or unit leaders to participated the meeting instead.

Article 6. Responsibilities and scope of work of the Deputy General Director

1. The responsibilities of the Deputy General Director for work resolution:

a. The Deputy General Director shall assist the General Director who assigns the Deputy General Director to supervise and direct some specific assignments, directly instruct some subordinate units, authorized to resolve some works. Within the scope of the assigned work, entitled to use the powers

of the General Director, on behalf of the General Director while addressing the works of the assignments and is responsible to the General Director and by law for the his/her decision to the in-charge field and assigned works.

b. When the General Director adjusts assignments among the General Deputy Directors, the Deputy General Directors have to hand-over their work contents, records, and related documents one another and report to the General Director.

2. Scope of work:

a. Instruct the units in charge of construction: work plans, processes, work handling sequence according to plan, schedule, proposal, project and other management documents in the fields assigned by the General Director;

b. Direct to examine task implementation; direct to solve derivative works, report proposals of the units under assigned areas; detect and suggest matters need to be amended and supplemented to ensure compliance with the laws and regulations of the City and take responsibility for these decisions.

c. Deputy General Director contacts and responses to the questions of the house organs on the in-charge matters and has to be individually responsible for these contents and at the same time reports such information to the General Director. Proactively carry out the assigned tasks, if there is any issue related to the field of other Deputy General Directors, directly coordinate with these Deputy Directors to resolve it.

Where it is necessary to obtain the opinion of the General Director or there are different opinions among the Deputy General Director, it is required to report to the General Director for decision.

d. In the regular committee or extraordinary meeting, Deputy General Director states the directive results of his/her in-charge works overall leadership of the Company, and simultaneously raises new issues that need to be resolved to the conference for discussion and decision. Regularly report directly and obtains the General Director's opinion on the measures and the task solution results. Deputy General Director leads and controls through the leaders of the units. In case of necessity, Deputy General Director may control the work directly to each officer, official, and employee.

e. Task assignment of Deputy General Director is stipulated in other document.

3. Deputy General Director is entitled to give power to sign in documents:

Document, introduction letter for officers, officials, and employees under the direct management to take business trip and the texts in the in-charge fields in accordance with the State's regulations.

Article 7. Responsibilities and scope of work of the Standing Deputy General Director.

The Standing Deputy General Director, besides carries out his/her regular responsibilities within task assignment, has the following responsibilities and tasks:

1. Authorized by the General Director to be on behalf of the General Director to instruct common settlement of the Company and sign in documents on behalf of General Director when he is absent;
2. Authorized by the General Director to chair and coordinate activities among the Deputy General Director and directly monitor and direct the activities of the administration office of the Company;
3. Solve some urgent works of other Deputy General Director who is absent in accordance with authorization by the General Director.

Article 8. Responsibilities and scope of work of the leaders of the subordinate units

1. Unit leaders are nominated or dismissed by the General Director in accordance with official management level allocation of the City. The Unit Leaders have the following responsibilities:

- a. Actively implement the works under the unit's functions, duties and powers, build up monthly, quarterly and annual work programs and plans of its unit. Assign tasks for each staff, officer, and employee in the unit in separately written documents;
- b. Consult proposals, review the situation and report the results to the Deputy General Director and General Director;
- c. Manage human resource, check daily works and abide by the work time, abide by the rules and regulations on officials, officers, and employees in the unit; attendance records as prescribed;
- d. Be responsible for comments, evaluation of the officers, employees; proposal for recruitment, and staff training, vote for irregular or periodic emulation prescribed by the Company; review for discipline and wage increase, certification of sick leaves, annual leaves, overtime and other benefits for officers, officials, and employees in the unit.
- e. The Unit Leader is responsible for dissemination the contents in the Leader hand-over meetings and direct implementation tasks to all officials and employees in the unit; to organize to archive materials and working records of the unit in accordance with State's regulations and Company's regulations on archives.
- f. Set up regular (or irregular) schedule to hold unit meeting to review the implementation of the work plan; exchange profession, fully implement information and reporting mode in accordance with laws and the Company's regulations.

g. It is required to dignify personal responsibility, complying properly with assigned powers and duties. Actively address the assigned work. If newly works that is beyond the power of the Unit Leader arises, it is necessary to promptly report to the General Director or in-charged Deputy General Director for opinion and solution, not transferring the works under duty and authority of one unit to the other or to the Leader of the Company, not solving the works under duties and authority of other units;

h. Actively coordinate with the Leaders of other units to handle issues related to the work of the functions and duties of the unit and perform common tasks of the Company;

When sending a work report, propose to resolve the professional work in the field of the unit to in-charge Deputy General Director and send to the Director General as well;

i. Perform other duties as assigned by General Director or in-charge Deputy General Director; or authorized by General Director to solve or to sign by order of some documents under the authorization of the General Director and be responsible individually law and to the General Director for the authorized contents;

j. When absent from the unit, it is necessary to authorize the Deputy Leader to operate units; 02 day or more absence, it is required to report to the Office Manager of the Company. The authorized person is responsible for the Unit Leaders, and General Director by law for all activities of the units during the authorized time ;

k. The Deputy Leader of the Unit is the person to assist the Unit Leader to directly execute and instruct officials and employees in their units to perform their tasks. Responsible to the Unit Leader, by laws for the tasks assigned by the Unit Leader. Where the General Director or Deputy in-charge General Director directly assigns tasks, the Deputy Leader of the Unit is responsible for implementing and after that reporting to the Unit Leader; the Deputy Leader of the Unit is only to initial on the documents submitted to the Leaders of the Company when he/she is authorized and assigned by the Unit Leader or tasks directly assigned by the Leader of the Company.

Article 9. Responsibilities and scope of work of officials and employees

1. Officials and employees in the units (hereafter referred as to official) have the following responsibilities:

a. Proactively study and advises in the expertise field which is assigned to supervise, works are assigned by the Unit Leaders or the Company Leaders based on the functions and professional duties of the unit.

b. Subject to the executive management, direct assignment of the Unit leaders and take individual responsibility to the Unit Leaders and the Company leaders and by law for the proposals, schedule, quality, efficiency each assigned

work; regarding forms, sequences and procedures of promulgating documents and processes of handling the work which is assigned to supervise.

c. Have obligations to implement the provisions of the law on officials and the rules and regulations of the Company and the provisions of the Unit.

2. Scope of work of the officials and employees:

a. In the process of solving the work, if facing any difficulties or beyond its authority, it is required to report and obtain the directive opinion of the person who assigns work.

b. The Officials have to make plans for their works, actively being creative and dealing with difficulties in their works, coordinating and supporting colleagues at work to complete common tasks of the Unit.

c. When the Officials whose tasks are directly assigned by the Company Leader are responsible to implement the assigned tasks and reporting to the Unit Leaders for the results of the assigned tasks.

d. The cases of working under temporary contracts with probationary period of less than 03 months, responsible for the implementation of the assigned work in accordance with the provisions of the contract and obliged to comply with the rules and regulations and regulations of the Company .

e. Officials would like to take leave (annual leave, unpaid leave, funeral or marriage leave etc.), it is required to submit application form with detail reasons, date and location and ask for the Unit Leader's approval, after that send to the Human Resources Division for management. 01 day leave requires informing and obtaining consent of the unit leaders. More-than-01 day leave requires application form and obtain the consent of the Unit Leader, and submit to the General Director for decision; The Unit Leaders must arrange other officials to handle the work to ensure work schedule stick to the set plan.

f. The officials who are sent for long-term study, part-time study, postgraduate study or self-study to improve qualification still have to complete their assigned tasks and report learning results for the Company Leader, Human Resources Department depending on each semester.

g. Officials must strictly comply with regulations on security, absolutely are not allowed to provide documents and information to organizations and individuals outside the agency without the consent of the General Director. When the officers are transferred or labor contracts terminated, they must hand over all records and documents to the Unit Leaders or the person assigned by the Unit Leader.

3. Document compilation and submission for signature:

The Officials have to compile and type documents and materials of their work duties, and is responsible for the contents and form of the documents. The Unit Leader checks and initials on such documents before submitting to the Company Leader signing for issuance. In case of necessity, the Company Leaders can assign the Unit Leaders or the officials to compile documents, the

assigned person has to initial and take individual responsibility to the Company Leader and by law regarding the content and form of the document that he/she already prepares.

Article 10. Work relations between the departments and divisions of the Headquarter and the Company subordinate units.

1. Departments and divisions of the Company headquarter are responsible to direct, instruct and check the activities of the Company subordinate units. The Company subordinate units are under direction and instruction of departments and divisions of the Company headquarter regarding expertise and profession; subject to examination and inspection by Departments and Divisions of the Company Headquarter depending on the functions and duties of the compliance with mechanism, policy, legal, strategy, planning and company development plans approved by the Company.

The General Director and Deputy General Director shall take the time to conduct regular and irregular inspection to examine, urge and direct work implementation under the authority and responsibility of the Company.

2. The Leaders of the Company subordinate units implement programs and plans of the Company at the units, report to the Company Leader the work results of units as prescribed, and fully participate general activities and attend company meetings with arrangement of properly specified participants; fully implement management provisions of the Company.

Article 11. The relationship between the Company Leader and the subordinate units.

1. General Director and Deputy General Director in charge of the areas and units shall hold periodic or unscheduled meeting with the Unit Leaders or work the Unit Leaders to listen directly to their reports on the situation of instructing implementation programs, work plans of the units and the Company.

2. The Unit Leaders are responsible for promptly reporting to the Company Leaders on implementation results and recommendations of issues to be addressed when implementing the provisions of Article 7 of these Rules and issues of mechanism and policies need to be amended and supplemented with programs and work plans to meet the requirements of the Hanoi City People Committee and the Company.

Article 12. Relationship between leaders of affiliated Departments, Units

1. Any leaders who are assigned to chair the handling of relevant issues to functions, responsibilities and authorities of another departments shall

need to exchange ideas with such respective organizations' leaders. Leaders of departments, who are being consulted with, must be responsible for answering as requirements of chairing ones.

2. According to arrangement of General Director, Leaders of departments/units shall be responsible for coordinating in implementation of projects, programs, plans of the Company. For any issues which relate to different organizations, and are above the authorities or insufficient of conditions for implementation, the leaders of chairing departments must report and propose leaders of the Company for consideration and decision making.

Article 13. Other relationship

1. Relationship between General Director and Communist Party Committee, Labor Union, Youth Union, social – profession organizations of related braches following regulations of the Government, legal documents and related rules.

- For every half year, General Director or Deputy General Director authorized by General Director to work with Executive committee of Company's social and political organizations to announce on working policies of the Company, solutions, recommendations of union members and listening to contributing comments from organizations, unions regarding the operation of the Company;

- Leaders of Company's social and political organizations shall be invited to join in meetings, workshops which are chaired by leaders of the Company, those discussing about operation, responsibilities, authorities and legal interests of members in such organizations;

- General Director creates favorable conditions for above organizations to operate effectively, contributing to execution of political responsibilities of the Company, which have been assigned by HPC; referring to opinions of organizations before making decision on issues relating to responsibilities, authorities and legal interests of members.

2. The Company shall closely work with Office of HPC, Departments and Boards to frequently exchange information, coordinating and reviewing the implementation of work programs, ensuring quality completion and in timely manner of programs, plans, works assigned following the instructions and monitor of HPC.

3. Departments and Boards in HQs often coordinate with under-units to monitor the implementation of Company's tasks, and building under-units as stable ones, and training, educating to pursue skillful, disciplined staffs to ensure the completion of every task.

4. Relationship between leaders of units under the Company with committees, public organizations, and laborers in the Company:

a. Leaders of the units shall create favorable conditions for Communist party and unions to operate as their regulations, missions and objectives; coordinating with Party's committee and public organizations to monitor and create favorable conditions for working, training and improving the political, professional knowledge for laborers in the organization; ensuring the execution of democracy scheme in operation of the organization, building up office culture and customs, and management disciplines;

b. Officers, laborers who are members of Communist party and of unions must be typical ones for completing assigned tasks as regulations about officers and laborers; seriously executing regulations on responsibilities and obligations of members of communist party and of unions, as well as regulations relating to official tasks of officers and laborers; dealing with tasks as procedures and in timely manner; being responsible in front of leaders of the unit, regarding the implementation results of assigned tasks.

Chapter III

PROCEDURES OF WORK PROCESSING BY COMPANY'S LEADERS

Article 14. Work processing method by Company's leaders

1. General Director, Deputy G.Director will consider and handle works on the basis of "Report on work processing" under Company's format.

2. General Director, Deputy G.Director will chair and work with leaders of organizations and related experts to refer to their opinions before handling with important issues which are necessary but not yet handling rightaway following regulated method as regulations in Item 1 of this Article.

3. Other handling methods as regulations of this rules such as working trips or handling works at site or directly with organizations in charge, guest receiving and other methods as stipulated or authorized by General Director.

Article 15. Procedures of documents submission for work processing.

1. Procedures to submit General Director, Deputy G. Director to process works:

a. Documents and submissions to leaders of the Company must be signed and stamped (if any) as authority of leaders of respective units under Company;

b. For issues relating to functions and responsibilities of other organizations, it is a must to pursue official opinions by written document of relevant organizations;

c. Submitting dossiers of documents and proposal shall include:

- The submission letter to General Director shall clearly explain the main contents of the proposal, arguments for different recommendations. For legal documents, contents of the submission letter must follow regulations of Law on promulgation of legal documents and execution instructing documents. For international treaties and agreements, it is necessary to follow regulations stipulated in relevant documents;

- Documents or opinions of proposal's evaluating organizations as regulations of the Company;

- Report to explain the review on contributing opinions of relevant organizations, including opinions of other consultants (if any);

- Other necessary documents.

2. It is required only 1 original copy of documents, submission letter to ask for handling of the work to authorized organizations. If other organizations should be noticed for information or coordination, it is only requested to indicate those in the Recipients part of the document.

3. For organizations which are not under the management of the Company in terms of administration or profession, it is necessary to execute procedures to send the documents/letters to the Company as current regulations on the documentation. International organizations can proceed the submission of documents/letters by following international practices.

Article 16. Documentation work

1. General Affairs Department shall be responsible for united management of all documents, incoming – outgoing letters. Be responsible for dispatching outgoing letters and incoming letters to receivers in timely manner. Documents with “confidential” stamped shall be particularly managed; “urgent” or “express” stamps, GA Department shall need to transfer rightaway to General Director for timely handling.

2. After issuance of documents, the documentation controller must check again the document's format, authority of the signer as regulations, if those documents are in compliant with regulations, they can be issued at that day to related organizations and individuals. Storing the documents and updating to internal information network of the Company. The issuance and management of documents must be in complaint with regulations on management over documentation and information.

3. Within 05 working days since the approval date of Company's leaders or instructions over the work, the GA Department shall coordinate with relevant organizations to complete the procedures in order to be able to issue documents or notice of the meeting conclusions of Company's leaders.

4. Within 03 working days since the monthly meeting day, GA Department shall notice of the meeting conclusions of Company's leaders.

5. The management over the seals of the Company shall be under documentation unit, and it must ensure the security of the stamp. It totally cannot loss the stamp. It is prohibited to bring the stamp out of the office or give to another persons without approval of General Director or Chief of Office, and there shall be specific record of the delivery, otherwise punishments shall be applied as regulations. It is strongly prohibited for documentation controllers to stamp before signature.

6. The inspection over Departments and Units under the Company in the implementation of relevant documents shall be proceeded as regulations.

Chapter IV

SCHEME OF MEETINGS AND REPORTING, NOTICING

Article 17. Meetings

Based on requirements of the work and scope of works, the Company shall organize workshops and meetings in practical, effective and economical manners.

1. Workshops may include: Company conference, seminars (implementation, summing up or concluding or discussions on several topics), workshop of skill trainings.

2. Meetings to be chaired by Company's President shall include:

a. Weekly meeting of Board of Managers of Company;
b. Other important, unscheduled meetings shall be chaired by President.

3. Meetings chaired by Company's leaders shall include:

a. Monthly, quarterly meetings among Company's leaders;
b. Weekly meetings among Company's leaders;
c. Company's leaders shall meet and work with leaders of counterparts, other organizations at Company's HQs;

d. Company's leaders shall mêt and work with Company's affiliated Departments, Units;

e. Meetings gathering Company's leaders and other meetings to deal with works;

f. Other important, unscheduled meetings shall need General Director to chair.

4. Meetings to be chaired by Deputy GD shall include:

a. Departments, Units, organizations under the Company shall organize meetings chaired by their respective leaders, to discuss on profession contents or others following their functions, responsibilities as regulations;

b. Other important and unscheduled meetings shall need Deputy GD to chair.

5. Leaders of Company's affiliated units can chair meetings and discussions with representatives from relevant organizations under the authority of General Director, Deputy GD as regulations in this Rules;

If Departments, units and organizations under the Company will invite Leaders from relevant profession departments or organizations to meetings, it is necessary to notice to Leaders of Company for permission and is required to consent on the meeting agenda with GA Department to avoid similarities/overlaps.

6. Preparation of Workshops, meetings

a. General Director, Deputy GD shall instruct organizations who are responsible for organizing workshops, meetings for preparation of agenda, contents, location, time, estimation of costs, invitations and enclosed documents (2 working days in advance). If upper ranked leaders are invited, it is necessary to register, submitting documents in advance and preparing speeches (if required);

b. Any documents to be utilized for workshops, meetings shall need to be approved or permitted by Leaders of Company before circulation; to request contributing opinions of relevant organizations for topics which are allowed by Leaders of Company;

c. GA Department is responsible for serving during workshops, including sending invitations and enclosed documents, preparation of meeting halls, coordination with related organizations to receive guests. If workshops or meetings are organized not as scheduled, the GA Department shall need to proactively implement preparation works for workshops and meetings.

7. Post-meeting works:

GA Department and assigned departments are responsible for implementing the contents of conclusions to be made by leaders at workshops, meetings, inspecting, accelerating and compiling for reporting to leaders of the Company on the implementation results of those conclusions.

Article 18. Noticing and reporting

1. General Director to report President about

Working implementation status of the Company, those works which are above the authorities of the Company and those needed opinions and directions of President.

2. Deputy General Director(s) to report General Director about

a. Implementation status of their respective tasks, those above the authorities and those needed opinions and directions of General Director;

b. Contents and results of workshops and meetings attended under the authorization of General Director, or direct at those authorized workshops, meetings;

c. Working results and recommendations of counterparts and other organizations to the Company if participating in working trips in and outside the country.

3. Departments, Units to report Leaders of the Company about

a. Leaders of Departments and Units under the Company shall ensure sufficient noticing scheme to leaders of the Company as regulations of the Company. Semi-annual and annual reports must be submitted for approval of responsible Deputy GD;

If there is above-authority issues, leaders of the departments/units must report to leaders of the Company for timely solutions;

b. Aside from implementation of regulations at item a, clause 3 of this article, Company's office chief shall be responsible for following tasks:

- Provide daily information for General Director, Deputy GD about issues to be dealt with;

- Prepare to report during weekly meetings of Company's leaders;

- Compile and develop working progress report of the Company to submit HPC and upper ranked organizations;

- Guide, follow and supervise Departments, units under the Company to seriously execute the noticing, reporting scheme and using of information, in complaint with instructions and monitoring of General Director;

- Propose and report to Company's leaders on Company related issues to be handled, which are raised by mass media and the society.

4. Provision of information about operation of Departments, units under the Company

Departments, units under the Company are responsible for noticing by suitable manners, which are convenient for officers to grasp the following information:

a. Policies of the Communist Party, the Government and the Company relating to responsible works;

b. Working programs of the Company and of Departments, units, operation budget and settlement of annual fund (if any);

c. Recruit, participate in trainings, awarding, punishing, increasing salary level or staff level, and assigning officers;

d. Conclusion documents of handling with complaints of Departments, units;

e. Internal working rules of the Company, Departments, units;

f. Others as regulations.

5. Provision of information about operation of the Company

- a. Provision of information:
 - General Director shall regulate on the information management of the Company, frequently provide information as reference for instructions of HPC and related Departments and organizations; creating favorable conditions for mass media to approach information of company's operation in correct, timely manner;
 - Answers to mass media upon proposals of media agencies or requests of HPC, requesting mass media which already posted or publicized news or reports with untrue problems to correct or the Company shall undertake other authorities as regulations;
 - When providing information, it is prohibited to disclosure confidential information of the Company as well as information relating to sensitive issues under progress.
- b. The answering to mass media must be implemented as regulations as well as those for the information management of the Company.
6. Information circulation on broad band internal network of the Company
 - a. Following documents shall be publicized on internal broad band network:
 - Legal documents issued which are related to the Company;
 - General affairs documents, reports of all kind, formats, other documents which are assigned by Office Chief;
 - b. GA department is responsible for using and circulating information, legal documents, reports and related information onto the computer network of the Company, for effective operation of Leaders of the Company.
 - c. Departments, units under the Company must exchange information via computer network to timely receive documents of guiding, monitoring and information that the Company shall send out for acknowledgement and implementation.
 - d. The update of information on Company's online site must be in compliant with legal regulations on information posting on the Internet and related regulations of the Company.

Chapter V

IMPLEMENTATION

Article 19. Scope of application

Leaders of the Company, of Departments, Units under the Company, and officers, staff and workers of the Company are responsible for implementing these rules.

Article 20. Implementation

During the implementation, if there is any new issue or findings arisen, Departments, units under the Company shall compile and report in written submissions to Organization – HR Department for studying and advising to leaders of the Company for their consideration and decision making./.

Hanoi, date ... month ... year

GENERAL DIRECTOR

(Signed and sealed)

APPENDIX 1
Regulations on authority delegation

Main items	Manager	Deputy Manager	Secretary	Head of unit	Staff
1. <i>Relating to promulgation, amendment or discard materials in respective department.</i>	X				
2. <i>Relating to report.</i> + Important matters, to report to higher leaders + Common works of the department + Matters relating to the department + Matters relating to Line OUs. + Simple matters, relating to solving alternatives	X	X	X	X	X
3. <i>Relating to organization structure, personnel arrangement.</i> + Common instruction, important matters + Coordinating, simple matters	X	X			
4. <i>Relating to internal affairs, foreign affairs.</i> + important matters + simple matters	X	X	X		
5. <i>Relating to organization, coordination in participating meetings.</i> + important matters + simple matters + Prepare, implement if assigned	X	X	X	X	X
6. <i>Relating to</i>					

<p><i>department personnel management.</i></p> <ul style="list-style-type: none"> + managing the implementation of labor rules/regulations. + Approve for working records, OT sheets. + Approve for annual leavers (as regulations) + Dispatching personnel suddenly <ul style="list-style-type: none"> - Important matters - Matters of the Department 	<p>x</p> <p>x</p> <p>x</p> <p>x</p>	<p>x</p> <p>x</p>	<p>x</p>	<p>x</p> <p>x</p>	
<p>7. Matters relating to Department's In-Expense (if any).</p> <ul style="list-style-type: none"> - Important matters - Department's simple matters 	<p>x</p>	<p>x</p>			

APPENDIX 2
Table of title level standard requirements

Title	Qualification and skill level	Making plan and creative ability	Instruction and negotiation ability
CHIEF OF DEPT.	<ul style="list-style-type: none"> - Very high level of knowledge and skill; and sharp argument; - High management knowledge 	<ul style="list-style-type: none"> - Ability to decide and evaluate good ideas necessary for the activities of the department; - Ability to make plan and propose operation motto of the department based on the Company's business motto. 	<ul style="list-style-type: none"> - Good ability to negotiate necessary for controlling the department; - Ability to direct and train their subordinates to become senior managers.
DEPUTY CHIEF OF DEPT.	<ul style="list-style-type: none"> - High level of knowledge and skill; and sharp argument; - Management knowledge 	<ul style="list-style-type: none"> - Good ability to decide and evaluate ideas to perform the works related to the fields that he is in charge. - Ability to make plan and propose operation motto of the division that is assigned to be in charge based on the operation mottos of the department. 	<ul style="list-style-type: none"> - Good ability to negotiate for the activities of the division that he is assigned to be in charge of; - Ability to direct and train his subordinates to become managers.
ASSISTANT TO THE CHIEF OF DEPT.	<ul style="list-style-type: none"> - High level of knowledge and skill; and sharp argument; - General management knowledge 	<ul style="list-style-type: none"> - Good ability to decide and evaluate ideas to perform the works related to the fields that he is in charge. - Ability to make plan and propose operation motto of the division based on the operation mottos of the department. 	<ul style="list-style-type: none"> - Good ability to negotiate for the activities of the department; - Ability to direct and train his subordinates to become managers. - Ability to connect and coordinate the activities of the department.
LEADER OF THE DIVISION	<ul style="list-style-type: none"> - High level of knowledge and skill; and sharp argument; - General management 	<ul style="list-style-type: none"> - Good ability to decide and evaluate ideas to perform the works related to the division that he is assigned to be in charge. - Ability to make plan and 	<ul style="list-style-type: none"> - Ability to negotiate in a wide range for activities of the division that he is assigned to be in charge.

	knowledge	propose operation motto of the division based on the operation mottos of the Department.	-Ability to direct actual work to the staff of the lower levels.
STAFF	- Particular knowledge and skill on the assigned work	<ul style="list-style-type: none"> -Fully understand the instructive materials and regulations related to the assigned task. - Ability to evaluate each part in accordance with various conditions within the area of the work progress which is commonly prescribed. - Ability to bring creation into full play in the actual works. 	<ul style="list-style-type: none"> -Ability to negotiate within the assigned work area. - Contact and report accurately.

HQ personnel plan

Order	Department	Job duty	Head-count	Requirements for recruitment *				Deadlines for recruitment			Educational Content
				Academic Background	Age	Experience	Qualification/skill	2014.6 (O&M company establishment)	2014.8 (Operational commencement)	2015.6 (Line 2 undertaking)	
1	General Affairs Department	Department manager	1	University	45 or younger	·3 years or more of experience with management work in governmental agency or state enterprise (5 years or more of work experience in railway industry and 3 years or more of work experience with the specialized job)	·Appropriate expertise for the position ·Qualification B or higher in any foreign language	1			·OJT by TA project ·OJT at the work trial of Line 2A
		Deputy manager (in charge of foreign affairs)	1	University	45 or younger	·1 year or more of experience with management work in governmental agency or state enterprise (3 years or more of work experience with the specialized job)	·Appropriate expertise for the position ·Qualification B or higher in any foreign language		1		·OJT at the work trial of Line 2A
		Deputy manager (responsible for internal affairs)	1	University	45 or younger	·1 year or more of experience with management work in governmental agency or state enterprise (3 years or more of work experience with the specialized job)	·Appropriate expertise for the position ·Qualification B or higher in any foreign language		1		·OJT at the work trial of Line 2A
		Staff in charge of external affairs, translation and Interpretation	2	University	40 or younger	·To give priority to those who have experience with this job	·Appropriate English for the position or person who have a bachelor's degree in foreign language		1	1	·OJT at the work trial of Line 2A ·OJT by precedent employees
		Staff in charge of legal work	1	University	45 or younger	·1 year or more of experience with legal work in governmental agency or state enterprise	·Knowledge of law		1		·OJT at the work trial of Line 2A
		Staff in charge of documents and records	2	University	35 or younger				1	1	·OJT at the work trial of Line 2A ·OJT by precedent employees
		Staff in charge of office and business property management	1	University	40 or younger		·Person with experience of building management is favorably treated.	1			·OJT by TA project ·OJT at the work trial of Line 2A
		Staff in charge of control information system and IT office management	2	University	35 or younger	·1 year or more of experience with system management in governmental agency or state enterprise	·Person with a qualification related to IT is favorably treated.	1	1		·OJT by TA project ·OJT at the work trial of Line 2A ·System education by RPMU
		Staff in charge of clerical work, land and environment	1	University	40 or younger			1			·OJT by TA project ·OJT at the work trial of Line 2A
		Staff in charge of incidents and logistics	1	University	35 or younger				1		·OJT by TA project ·OJT at the work trial of Line 2A
		Total	13					4	7	2	
2	Department of Organization and Human Resources	Department Manager	1	University	45 or younger	·3 years or more of experience with management work in governmental agency or state enterprise (5 years or more of work experience in railway industry and 3 years or more of work experience with the specialized job)	·Appropriate expertise for the position ·Qualification B or higher in any foreign language	1			·OJT by TA project ·OJT at the work trial of Line 2A
		Deputy Manager	2	University	45 or younger	·1 year or more of experience with management work in governmental agency or state enterprise (3 years or more of work experience with the specialized job)	·Appropriate expertise for the position ·Qualification B or higher in any foreign language		2		·OJT at the work trial of Line 2A
		Staff in charge of personnel	1	University	45 or younger		·Knowledge related to labor legislation	1			·OJT by TA project ·OJT at the work trial of Line 2A
		Staff in charge of systems, policies and payroll	1	University	45 or younger		·Knowledge related to labor legislation	1			·OJT by TA project ·OJT at the work trial of Line 2A
		Staff in charge of competition, award and general affairs	1	University	45 or younger		·Knowledge related to labor legislation	1			·OJT by TA project ·OJT at the work trial of Line 2A
		Staff in charge of education	1	University	45 or younger				1		·OJT at the work trial of Line 2A
		Total	7					4	3	0	
		Department Manager	1	University	45 or younger	·3 years or more of experience with management work in governmental agency or state enterprise (5 years or more of work experience in railway industry and 3 years or more of work experience with the specialized job)	·Ability to implement practical railway business or comparable expertise	1			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU

Order	Department	Job duty	Head-count	Requirements for recruitment *				Deadlines for recruitment			Educational Content
				Academic Background	Age	Experience	Qualification/skill	2014.6 (O&M company establishment)	2014.8 (Operation trial commencement)	2015.6 (Line 2 undertaking)	
3	Department of Safety and Quality	Deputy Manager	1	University	45 or younger	·1 year or more of experience with management work in governmental agency or state enterprise (3 years or more of work experience with the specialized job)	·Ability to implement practical railway business or comparable expertise		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of service quality	1	University	45 or younger	·Experience with quality control in governmental agency or state enterprise	·Person with knowledge of quality control is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of railway system technical quality	1	University	45 or younger	·Experience with quality control in governmental agency or state enterprise	·Person with knowledge of quality control is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of service safety	1	University	45 or younger	·1 year or more of experience with safety management in railway operators			1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of railway system technical safety	1	University	45 or younger	·1 year or more of experience with safety management in railway operators		1			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Total	6					2	4	0	
4	Department of Sales and Public Relations	Department Manager	1	University	45 or younger	·3 years or more of experience with management work in governmental agency or state enterprise (5 years or more of work experience in railway industry and 3 years or more of work experience with the specialized job)	·Appropriate expertise for the position ·Qualification B or higher in any foreign language	1			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Deputy Manager	2	University	45 or younger	·1 year or more of experience with management work in governmental agency or state enterprise (3 years or more of work experience with the specialized job)	·Appropriate expertise for the position ·Qualification B or higher in any foreign language	2			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of planning and investment	1	University	45 or younger		Knowledge of work relating to accounting and finance	1			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of contract management and equipment purchase	1	University	45 or younger		Knowledge of contract management work	1			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of general affairs and personnel test/management	1	University	45 or younger	1 year or more of experience with general affairs and personnel matters in governmental agency or state enterprise		1			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of fare management	1	University	45 or younger		Person with experience of accounting work is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of non-fare management	1	University	45 or younger				1		·OJT at the work trial of Line 2A ·Introductory education of Line 3A by RPMU
		Staff in charge of public relations	1	University	45 or younger				1		·OJT at the work trial of Line 2A ·Introductory education of Line 4A by RPMU
Total	9					6	3	0			
5	Department of Planning and Project	Department Manager	1	University	45 or younger	·Company management or equivalent experience (corporate management planning / investment planning as a manager) (5 years or more of work experience in railway industry and 3 years or more of work experience with the specialized job)	·Knowledge and sense of corporate management ·Qualification B or higher in any foreign language	1			·OJT by TA project ·OJT at the work trial of Line 2A
		Deputy Manager	2	University	45 or younger	·Corporate management planning / investment planning as a manager (3 years or more of work experience with the specialized job)	·Knowledge and sense of corporate management ·Qualification B or higher in any foreign language			2	·OJT by precedent employees
		Staff in charge of planning	1	University	45 or younger		Knowledge of accounting and finance	1			·OJT by TA project ·OJT at the work trial of Line 2A
		Staff in charge of investment promotion	1	University	45 or younger		Knowledge of finance	(concurrently served by planning staff)	1		·OJT at the work trial of Line 2A
		Staff in charge of contract work (contract management)	1	University	45 or younger		Knowledge of contract law	1			·OJT by TA project ·OJT at the work trial of Line 2A
		Staff in charge of capital/fund management	1	University	45 or younger		Knowledge of accounting and finance	(concurrently served by planning staff)	1		·OJT at the work trial of Line 2A

Order	Department	Job duty	Head-count	Requirements for recruitment *				Deadlines for recruitment			Educational Content
				Academic Background	Age	Experience	Qualification/skill	2014.6 (O&M company establishment)	2014.8 (Operation trial commencement)	2015.6 (Line 2 undertaking)	
		Total	7					3	2	2	
6	Department of Finance and Accounting	Department manager	1	University Graduate in finance and accounting, economics is favorably treated	45 or younger	·3 years or more of experience with finance and accounting work in governmental agency or state enterprise (3 years or more of work experience with the specialized job, to have a certificate of chief accountant by the current provisions of the country)	·Knowledge of finance ·Knowledge of accounting ·Chief accountant	1			·OJT by TA project ·OJT at the work trial of Line 2A ·System education by Line 2A EPC
		Deputy manager in charge of finance	1	University Graduate in finance and accounting, economics is favorably treated	45 or younger	·5 years or more of work experience with finance, accounting and contract management work in governmental agency or state enterprise	·Knowledge of finance ·Knowledge of contract		1		·OJT at the work trial of Line 2A ·System education by Line 2A EPC
		Deputy manager in charge of accounting (account manager)	1	University Graduate in finance and accounting, economics is favorably treated	45 or younger	·3 years or more of work experience with finance and accounting work in governmental agency or state enterprise (especially experience with preparation for Financial Statements)	·Knowledge of finance (Financial Statements) ·Knowledge of accounting	1			·OJT by TA project ·OJT at the work trial of Line 2A ·System education by Line 2A EPC
		Staff in charge of management/allocation of capital/fund/budget	1	University Graduate in finance and accounting, economics is favorably treated	45 or younger	·1 year or more of experience with finance and accounting in governmental agency or state enterprise	·Knowledge of accounting ·Knowledge of finance	1			·OJT by TA project ·OJT at the work trial of Line 2A ·System education by Line 2A EPC
		Staff in charge of calculation, checking forms, taxes, etc. (accounting)	3	University Graduate in finance and accounting	45 or younger	·1 year or more of experience with accounting in governmental agency or state enterprise	·Knowledge of accounting ·Knowledge of tax ·Person with accounting qualification	1	2		·OJT by TA project ·OJT at the work trial of Line 2A ·System education by Line 2A EPC
		Treasurer	1	University	40 or younger	·1 year or more of experience with treasury in governmental agency or state enterprise	·It is desirable to have knowledge of accounting	1			·OJT at the work trial of Line 2A ·System education by Line 2A EPC
		Staff in charge of management of fixed asset/material/contract	2	University	45 or younger	·1 year or more of experience with asset management or contract management in governmental agency or state enterprise	·Knowledge of asset management ·Knowledge of contract		1	1	·OJT at the work trial of Line 2A ·System education by Line 2A EPC ·OJT by precedent employees
		Total	10					5	4	1	
7	General Operation Department	Department manager	1	University	45 or younger	·3 years or more of experience with management work in governmental agency or state enterprise (5 years or more of work experience in railway industry and 3 years or more of work experience with the specialized job)	·Ability to implement practical railway business or comparable expertise	1			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Deputy manager	2	University	45 or younger	·1 year or more of experience with management work in governmental agency or state enterprise (3 years or more of work experience with the specialized job)	·Ability to implement practical railway business or comparable expertise		2		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of operation planning division	2	University	45 or younger	· Experience with ordinary general affairs and human resources at some enterprise		2			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of operation division	2	University Graduate in a department pertinent of electric railway	45 or younger	·Practical experience with railway train service or comparable knowledge, in this case, "practical experience with railway train service" refers to experience with either operation planning, operation management, safety management or crew	·License of a train operator or comparable expertise	2			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU

Order	Department	Job duty	Head-count	Requirements for recruitment *				Deadlines for recruitment			Educational Content
				Academic Background	Age	Experience	Qualification/skill	2014.6 (O&M company establishment)	2014.8 (Operation trial commencement)	2015.6 (Line 2 undertaking)	
		Staff in charge of driving/safety division	2	University Graduate in a department pertinent of electric railway	45 or younger	•Practical experience with railway train service or comparable knowledge, in this case, "practical experience with railway train service" refers to experience with either operation planning, operation management, safety management or crew	•License of a train operator or comparable expertise	2			•OJT by TA project •OJT at the work trial of Line 2A •Introductory education of Line 2A by RPMU
		Total	9					7	2	0	
	Maintenance Technology Department	Total	30					12	18	0	
	Train Car Department	Department manager	1	University Graduate in mechanical engineering or electric engineering, or comparable expertise	45 or younger	•3 years or more of experience with management work in governmental agency or state enterprise (5 years or more of work experience in railway industry and 3 years or more of work experience with the specialized job)	•Person with experience of maintenance or design of electric railway car is favorably treated	1			•OJT by TA project •OJT at the work trial of Line 2A •Introductory education of Line 2A by RPMU
		Deputy manager	1	University Graduate in mechanical engineering or electric engineering, or comparable expertise	45 or younger	•1 year or more of experience with management work in governmental agency or state enterprise (3 years or more of work experience with the specialized job)	•Person with experience of maintenance or design of electric railway car is favorably treated.	1			•OJT by TA project •OJT at the work trial of Line 2A •Introductory education of Line 2A by RPMU
		Staff in charge of maintenance design	1	University Graduate in mechanical engineering or electric engineering, or comparable expertise	45 or younger	•Practical experience with maintenance of mechanical equipment or electrical equipment (including railway car)	•Person with experience of railway car maintenance is favorably treated		1		•OJT at the work trial of Line 2A •Introductory education of Line 2A by RPMU
		Staff in charge of planning	1	University Graduate in mechanical engineering or electric engineering, or comparable expertise	45 or younger	•Practical experience with maintenance of mechanical equipment or electrical equipment (including railway car)	•Person with experience of railway car maintenance is favorably treated		1		•OJT at the work trial of Line 2A •Introductory education of Line 2A by RPMU
		Staff in charge of maintenance technology	1	University Graduate in mechanical engineering or electric engineering, or comparable expertise	45 or younger	•Practical experience with maintenance of mechanical equipment or electrical equipment (including railway car)	•Person with experience of railway car maintenance is favorably treated		1		•OJT at the work trial of Line 2A •Introductory education of Line 2A by RPMU
			Total	5					2	3	0
		Department manager	1	University Graduate in electric engineering or mechanical engineering, or comparable expertise	45 or younger	•3 years or more of experience with management work in governmental agency or state enterprise (5 years or more of work experience in railway industry and 3 years or more of work experience with the specialized job)	•Person with experience of maintenance or design of electrical equipment or mechanical equipment of railway is favorably treated (more preferred if it is electric railway) •With regard to the presence or absence of qualifications(license) required for the maintenance of electrical equipment, it is desirable to have acquired this qualification until the adoption time (In the case of Japan)	1			•OJT by TA project •OJT at the work trial of Line 2A •Introductory education of Line 2A by RPMU

Order	Department	Job duty	Head-count	Requirements for recruitment *				Deadlines for recruitment			Educational Content	
				Academic Background	Age	Experience	Qualification/skill	2014.6 (O&M company establishment)	2014.8 (Operation trial commencement)	2015.6 (Line 2 undertaking)		
8	Telecommunications Department (station facilities)	Deputy manager	2	University Graduate in electric engineering or mechanical engineering, or comparable expertise	45 or younger	· 1 year or more of experience with management work in governmental agency or state enterprise (3 years or more of work experience with the specialized job)	· Person with experience of maintenance or design of electrical equipment or mechanical equipment of railway is favorably treated (more preferred if it is electric railway)		2		· OJT at the work trial of Line 2A · Introductory education of Line 2A by RPMU	
		Staff in charge of planning	1	University Graduate in electric engineering or mechanical engineering, or comparable expertise	45 or younger	· Practical experience with maintenance of electrical equipment or mechanical equipment	· Person with experience of design or maintenance of electrical equipment or mechanical equipment of railway is favorably treated (more preferred if it is electric railway)		1		· OJT at the work trial of Line 2A · Introductory education of Line 2A by RPMU	
		Staff in charge of electrical equipment	2	University Graduate in electric engineering or mechanical engineering, or comparable expertise	45 or younger	· Practical experience with maintenance of electric equipment	· Person with experience of design or maintenance of electrical equipment or mechanical equipment of railway is favorably treated (more preferred if it is electric railway)		2		· OJT by TA project · OJT at the work trial of Line 2A · Introductory education of Line 2A by RPMU	
		Staff in charge of electrical machine	1	University Graduate in electric engineering or mechanical engineering, or comparable expertise	45 or younger	· Practical experience with maintenance of electric equipment and mechanical equipment	· Person with experience of design or maintenance of electrical equipment or mechanical equipment of railway is favorably treated (more preferred if it is electric railway)		1		· OJT by TA project · OJT at the work trial of Line 2A · Introductory education of Line 2A by RPMU	
		Staff in charge of communicating device	1	University Graduate in electric engineering or mechanical engineering, or comparable expertise	45 or younger	· Practical experience with maintenance of communication equipment	· Person with experience of design and maintenance of railway communication equipment is favorably treated (more preferred if it is electric railway)		1		· OJT by TA project · OJT at the work trial of Line 2A · Introductory education of Line 2A by RPMU	
		Staff in charge of signal device	1	University Graduate in electric engineering or mechanical engineering, or comparable expertise	45 or younger	· Practical experience with maintenance of signal equipment	· Person with experience of design and maintenance of railway signal equipment is favorably treated (more preferred if it is electric railway)		1		· OJT by TA project · OJT at the work trial of Line 2A · Introductory education of Line 2A by RPMU	
		Staff in charge of AFC	2	University	20 – 29	· Because it has not introduced the AFC in Vietnam, inexperienced person even possible	· Graduate in electric or communication engineering		2		· OJT by TA project · OJT at the work trial of Line 2A · Introductory education of Line 2A by RPMU	
		<i>Total</i>	11						8	3	0	
			Department manager	1	University Graduate in railway systems engineering or civil engineering	45 or younger	· 3 years or more of experience with management work in governmental agency or state enterprise (5 years or more of work experience in railway industry and 3 years or more of work experience with the specialized job)	· Person with experience of electric railway is favorably treated		1		· OJT by TA project · OJT at the work trial of Line 2A · Introductory education of Line 2A by RPMU
			Deputy manager	1	University Graduate in railway systems engineering or civil engineering	45 or younger	· 1 year or more of experience with management work in governmental agency or state enterprise (3 years or more of work experience with the specialized job)	· Person with experience of electric railway is favorably treated		1		· OJT at the work trial of Line 2A · Introductory education of Line 2A by RPMU

Order	Department	Job duty	Head-count	Requirements for recruitment *				Deadlines for recruitment			Educational Content
				Academic Background	Age	Experience	Qualification/skill	2014.6 (O&M company establishment)	2014.8 (Operation trial commencement)	2015.6 (Line 2 undertaking)	
	Rail Facilities Department	Rail inspection management	1	University Graduate in railway systems engineering or civil engineering	45 or younger	·3 years or more of experience with railway maintenance (track)	·Person with experience of electric railway is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Management of rail maintenance planning (including developing plans and checking budgets)	1	University Graduate in railway systems engineering or civil engineering	45 or younger	·3 years or more of experience with railway maintenance (track)	·Person with experience of electric railway is favorably treated. ·Person with experience of budget control is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Rail maintenance management	1	University Graduate in railway systems engineering or civil engineering	45 or younger	·3 years or more of experience with railway maintenance (track)	·Person with experience of electric railway is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Technology management	1	University Graduate in railway systems engineering or civil engineering	45 or younger	·1 year or more of experience with railway maintenance (track)	·Person with experience of electric railway is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of general affairs	1	Junior college	35 or younger				1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		<i>Total</i>		7					1	6	0
	Structure Department	Department manager	1	University Graduate in civil engineering	45 or younger	·3 years or more of experience with management work in governmental agency or state enterprise (5 years or more of work experience in railway industry and 3 years or more of work experience with the specialized job) ·3 years or more of experience with civil engineering structures management	·Person with experience of building maintenance is favorably treated.	1			·OJT by TA project ·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Deputy manager	1	University Graduate in civil engineering	45 or younger	·1 year or more of experience with management work in governmental agency or state enterprise (3 years or more of work experience with the specialized job) ·1 years or more of experience with civil engineering structures management	·Person with experience of building maintenance is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of inspection	1	University Graduate in civil engineering	45 or younger	·3 years or more of work experience with management of civil engineering work	·Person with experience of building maintenance is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of planning	1	University Graduate in civil engineering	45 or younger	·3 years or more of work experience with management of civil engineering work	· Person with experience of building maintenance is favorably treated. · Person with experience in budget control is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of maintenance	1	University Graduate in civil engineering	45 or younger	·3 years or more of work experience with management of civil engineering work	·Person with experience of building maintenance is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		Staff in charge of technology	1	University Graduate in civil engineering	45 or younger	·1 year or more of work experience with management of civil engineering work	·Person with experience of building maintenance is favorably treated.		1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU

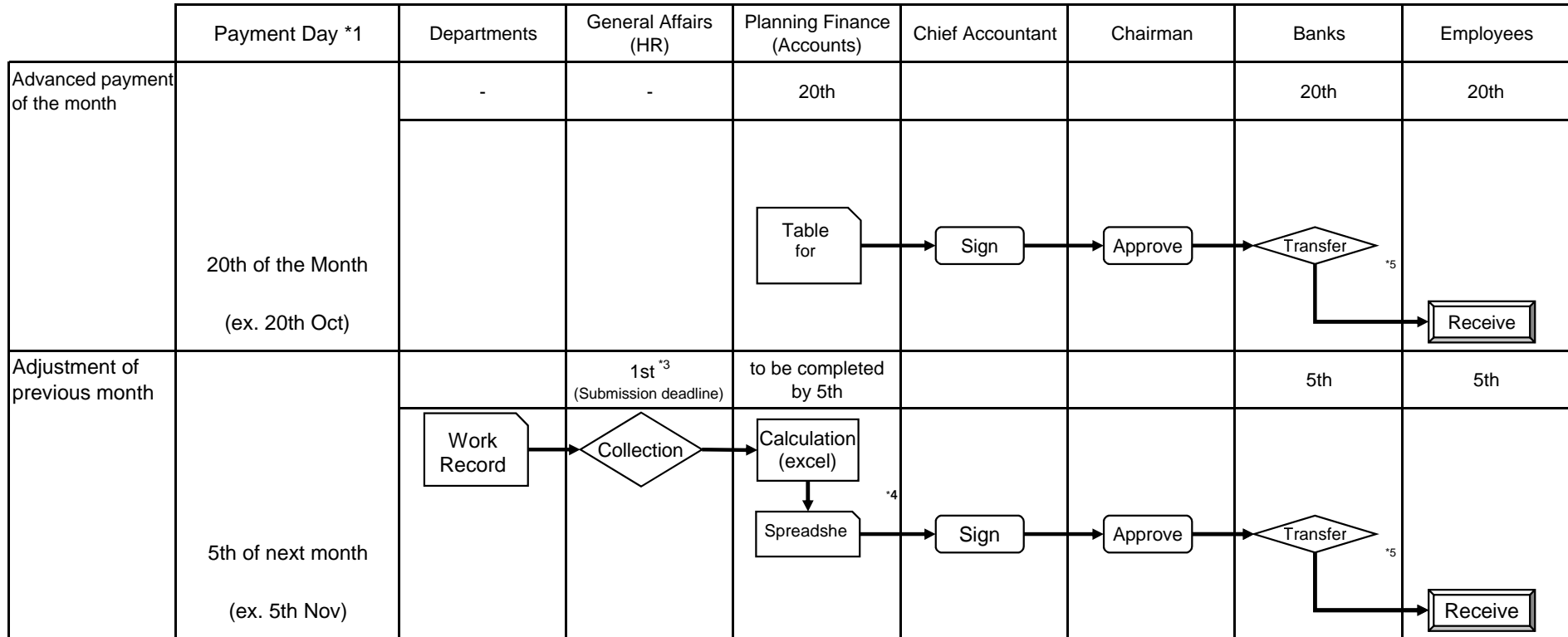
Order	Department	Job duty	Head-count	Requirements for recruitment *				Deadlines for recruitment			Educational Content
				Academic Background	Age	Experience	Qualification/skill	2014.6 (O&M company establishment)	2014.8 (Operation trial commencement)	2015.6 (Line 2 undertaking)	
		Staff in charge of general affairs	1	Junior college	35 or younger				1		·OJT at the work trial of Line 2A ·Introductory education of Line 2A by RPMU
		<i>Total</i>	7					1	6	0	
	Total		91					43	43	5	

※1 Other requirements for recruiting are listed below.

- Wellness that satisfy the required level
- For key job positions such as department manager and deputy manager, leadership skills related requirements for these positions have to meet the requirements in accordance with HMC regulations besides meeting the requirements above.
- It is recommended to staff OMU members who educated by TA project to appropriate positions of the company.

* Recruiting method: Public

Salary Payment Workflow (Ex. Oct)



*1 When payment day is holiday, in principal, payment will be made on the following working date. However, if it is possible, it is paid on the previous working day. (It is on 4th Nov in the above case.)

*2 Calculation is not performed for advanced payment, since the payment amount is already fixed.

*3 When the scheduled submission-deadline (1st of month) is holiday, in principal, the following working day, 2nd Nov in the above case, will be the alternative day. However, if it is possible, it may be performed earlier.

*4 It is performed using excel sheet. Accounting software which was purchased by HMC is not used for this work.

*5 The spreadsheet which contents employee's bank account and payment amount is transferred to banks.

Accounting Rules

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I - General rules

Article 1: Purpose

The purposes of these rules are to establish the company's accounting and financial standards, to classify and systematize the company's accounting and financial operations depending on the economic situation, to make economic and political decisions and to evaluate operation results of the Company.

Article 2: Scope and subject of application

1. Scope of application: The rules are applicable to accounting operations, book keeping system and reporting.

2. Subject personnel: Finance and accounting department and employees engaged in accounting and settlement operations.

Article 3: Definition, terms and abbreviations

1. Definition and terms

- Accounting means to collect, process, inspect, analyze and to provide economic and financial information in the form of value, physical substance and working hours.
- Accounting book: Accounting book means book keeping notes in a certain form to record each economic transactions based on the original evidence in accordance with accounting procedures and regulations and to systemize them.
- Accounting forms: Accounting forms means documents or recorded objects of information on accounting transactions to prove economic / financial transaction has been occurred and filed so that the information could be utilized as a basis for recording on accounting book.
- Sorting: Sorting means to sort relevant documents and to revise, finalize and systemize each item in order to manage, store and use accounting documents efficiently.
- Assets- cash (monetary assets): Cash is part of current assets of a company and exists in a form of money. This type of asset is the most fluid asset and consists of cash at hand, deposits of a company and cash in transit.

2. Abbreviations

Abbreviations	Means
TCKT	Financial accounting
TSCD	Fixed assets
UBND TP HANOI	Hanoi People's Committee
TGD	President

Article 4: Legal basis and related documents

1. Legal basis

- Accounting laws of Viet Nam
- Tax management law of 78/2006/QH11
- Partial amendments and supplements law of 21/2012/QH13 to tax management law
- Corporate income tax law of 14/2008/QH12
- Partial amendments and supplements law of 32/2013/QH13 to corporate income tax law
- Personal income tax law of 04/2007/QH12
- Partial amendments and supplements law of 26/2012/QH13 to personal income tax law
- Value added tax law of 13/2008/QH12
- Partial amendments and supplements law of 31/2013/QH13 to value added tax law
- Statistics law of 04/2003/QH11

- Decree No. 128/2004/ND-CP which stipulates details of certain articles of accounting law applicable to national accounting area and provides guidance on enforcement.
- Decree No. 83/2013/ND-CP which stipulates details of certain articles of tax management law and revised tax management law, provides guidance on enforcement and defines details of certain articles of tax management law.
- Decree No. 51/2010/ND-CP which stipulates receipts for sales of goods and providing services
- Decree No. 04/2014/ND-CP which revises decree of 51/2010/ND-CP which stipulates receipts for sales of goods and providing services
- Resolution No. 218/2000/QD-BTC that announces the storage system for accounting documents
- Circular No. 200/2014/TT-BTC which provides guidance on enactment of corporate accounting system.
- Circular No. 39/2014/TT-BTC providing guidance on enactment of Decree of 51/2010/ND-CP concerning receipt of product sales and providing services and decree of 04/2014/ND-CP.
- Circular No. 119/2004/TT-BTC to revise Circular No. 156/2003/TT-BTC, 111/2003/TT-BTC, 219/2013/TT-BTC, 08/2013/TT-BTC, 85/2011/TT-BTC, 39/2014/TT-BTC and 78/2014/TT-BTC to improve tax related procedures to simplify whole process.
- Circular No. 26/2015/TT-BTC to provide guidance on enactment of Decree of 12/2015/ND-CP which provides rules concerning additional value and tax managements and to revise Circular No. 39/2014/TT-BTV which provides regulation concerning receipts on product sales and providing services.

2. Related documents

- Vietnamese Accounting Standards (VAS)

Article 5: Responsibilities

1. President

- To set up accounting organization and to assign accounting staff and chief accountant as provided in the standards and conditions provided by the nation.
- To direct accounting organization to execute accounting operations as provided in the rules and regulations concerning accounting and to take responsibilities for the result arising from own mistakes or misbehavior.

2. Head of financial and accounting department (Controller)

- Is responsible for execution of accounting operation as provided in the regulation.
- To provide support to President in the financial management operation.
- Is responsible for managing, using and storage of accounting documentations.

- Is responsible for providing accounting information and materials to organization and personnel as provided in law in a timely manner, with adequate volume, with integrity and clarity.
3. Staff of financial and accounting department
Is responsible to ensure compliance with regulations concerning accounting and to execute tasks as assigned, within the capacity of own expertise. When replacement occurs, preceding accounting staff should take initiative to pass his assignment and related information to the succeeding accounting staff. Preceding accounting staff is responsible for the accounting works executed during his tenure.

II - Details of regulations

1. Business year, account title, and accounting books

Article 6: The company's business year

1. A budget period shall be the business period commencing on January 1 according to the solar calendar of each year and ending on December 31 of the same year. However, the first business year following the incorporation of the company shall commence on the effective date of the certificate of acceptance of the registration of the company for business purposes and end on December 31 of the same year.
2. If the business year for either of the initial or final business year is for less than ninety (90) days, the business year may be merged with the immediately succeeding or proceeding year, as the case may be. In this case, however, either of the initial or final business year shall be for less than fifteen (15) months.
3. The company shall publish its financial details as required in the company's operational systems and the government's regulations.

Article 7: Accounting basis

The company's economic and financial operations involving assets, liabilities, stockholders' equity, revenues and expenses shall be recorded in the accounting books when the operations occur, but not when the relevant monies are actually received or paid, as the case may be. If it is difficult to determine the date of occurrence of such operations, the business year that such operations belong to shall be determined on the basis of the date when a fact constituting the grounds for such operations is recognized.

Article 8: Recording of accounting transactions

1. All accounting transactions involving increases, decreases or changes in assets, liabilities or capital, or involving accrual of revenues or expenses shall be recorded and organized in the accounting books.
2. Accounting measurement shall be performed on the basis of the accounting books and vouchers in which transactions that occurred are recorded.

Article 9: Account titles

Accounting transactions shall be organized in accordance with the Rule Governing the Table of Account Titles.

Article 10: Account title system

Should be in accordance with Corporate Accounting System as provided in the Circular No. 200/2014/TT-BTC dated December 22nd, 2014 with appendix.

Article 11: Accounting books

Should be in accordance with regulations concerning accounting books and accounting formats as provided in the Circular No. 200/2014/TT-BTC dated December 22nd, 2014.

2. Cash

Article 12: Handling of cash

Cash shall be handled as specified in the Rule for the Handling of Cash.

Article 13: Receipt and payment of monies

Cash shall be received and paid upon such request and on the basis of such vouchers as specified in the Rule for the Handling of Cash. The financial accounting department may request the submission of other documents as required.

Article 14: Rules on receipts

1. Issuance and collection of receipts

Receipts should be issued at the time of receiving money. Receipts should be collected at the time of disbursement. This rule does not apply to instances where rules on cash receipts and payment are applicable.

2. Rules to be paid due attention at the time of using receipts.
 - a. Official receipts

Receipts that are used for calculation of amount of deduction from value added tax, return of value added tax, deduction, and reimbursement should be in compliance with the followings:

- 2nd copy of the original receipt of products and services (Customer copy)
 - The information items should be filled in as provided by the applicable regulations and should be in a mint condition with no damage.
 - Number and words should not be either modified or erased as provided by the applicable regulations and written clearly with sufficient accuracy.
- b. Report on the loss of receipts:
- In case receipts including receipts for purchases by the tax authorities and/or self-printed receipts are lost by organization or personnel, immediate reporting is required to the tax authorities where the receipts is purchased or to the institution where self-printed receipts are registered.
- c. Report on the use of receipts:
- Organization and personnel should report the monthly use of receipts which are issued by the Ministry of Finance and/or self-printed receipts by the 20th of the immediate following month. Also the annual receipts use report should be submitted to the tax authority in charge by February 25th of the immediate following year.
- d. Unlawful receipts
- Sale and purchase of receipts where details are not provided as required by the applicable regulations apart from cases where receipts issued by tax authorities are purchased.
 - Sale and purchase and use of receipts where subject products and services described in the items as economic activity are not transacted.
 - Changing the official status of receipts for products and services purchased without evidencing documents, fraudulent tax treatment at the time of sales, and purchase and use of receipts of fraudulent nature or of other sales branches to sell products without making tax declaration.
 - Sale and purchase of receipts where there are discrepancies between the products and services purchased and the description on the receipt copy.
 - Sale and purchase and use of receipts with expired validity.
 - Receipts that are judged as illegal by official institutions, security office or other administrative offices even if the bankruptcy of the issuer was not announced at the time of purchasing the products and services.

Article 15: Safekeeping of cash

Cash received, except cash on hand to meet business requirements, shall be deposited with the prescribed financial institution.

Article 16: Advance payment, payment and payment of advances

Bills for advance payment, payment or payment of advances to be forwarded to the financial accounting department shall be accompanied by a complete set of the required documents set forth below, and be in the regular form.

1. For travel expenses, the following documents are required as applicable:
 - Written decision on the approved business trip.
 - Written budget for the approved business trip.
 - Bill for advance payment (For payment in advance of travel expenses)
 - Bill for payment (For payment of travel expenses)
 - Bill for payment of advances (For payment of advance on travel expenses)
 - Written description of travel expenses
 - Receipt, relevant vouchers and others.
 - Other vouchers (if any).

2. For the purchase of goods or services, the following documents are required as applicable.
 - Approved budget
 - Comparative statement of three competing estimates (For goods or services with value of VND 500,000 or more.
 - Bill for advance payment (For payment in advance for goods or services)
 - Bill for payment (For payment for goods or services)
 - Bill for payment of advances (For payment of advance for goods or services)
 - Documents set forth in the Contract and Purchase Rules.
 - Other vouchers (if any).

3. Funds**Article 17:** Financial plans

To understand the operation situation of cash control and facility investment budget control, based on the financial plans, controlling activities will be executed based on the cash flow management statement.

Article 18: Financing

1. Financing needs to be considered carefully in accordance with the financial plan, with close attention being paid to economic conditions in general and the company's financial conditions.
2. It is the authority of the president to make decisions about financing.

Article 19: Fund management

1. Financial planning and financing shall be made by the planning and project department.
2. The financial accounting department shall be responsible for managing and assigning funds in accordance with the approved financial plan.

Article 20: Reserve funds

Reserve funds shall be included in discounts on inventory and doubtful debts.

4. Supplies

Article 21: Control of supplies

1. Control of supplies shall be made carefully in accordance with the Clerical Rules for the Control of Supplies.
2. Each person in immediate charge of controlling supplies shall be responsible for controlling supplies in the department that the person belongs to. The financial accounting department shall deal with the accounting of supplies.
3. If any of the company's supplies is damaged, the person involved shall be responsible for compensating for the damage in accordance with the shares of responsibility stipulated by the head of the financial accounting department. However, if the person involved is found to have been in custody of the supply with the due care of a prudent manager, he or she shall be exempted from the responsibility.

Article 22: Valuation method for inventories

The price for inventories issued shall be determined by the moving average method.

Article 23: Physical inventory

Physical inventory of supplies shall be taken once or more for each business year.

Article 24: Contracts for supplies or the like

Contracts for the sale, lease, manufacturing, repairing or processing of supplies or the like shall be entered into in accordance with the Procurement Rules.

5. Fixed assets

Article 25: Control of fixed assets

1. Control of fixed assets shall be made carefully in accordance with the Rules for Fixed Assets.
2. Fixed assets should be managed in a deliberate and strict manner.

3. Each person in charge of controlling fixed assets shall control the fixed assets of the department that he or she belongs to. The financial accounting department shall deal with the accounting of fixed assets.

Article 26: Loaning, assignment or the like of fixed assets

Lending and selling of fixed assets should be subject to the approval of the owner: Hanoi People's Committee.

No fixed assets may be loaned to, allowed to be used by, assigned to, or exchanged with those of, any person outside the company, unless adequate consideration is received from the person. However, the consideration may be reduced or exempted if there are any special reasons for doing so.

Article 27: Depreciation of fixed assets

Depreciation of fixed assets shall be made using the direct write-off method on a straight line basis.

Article 28: Sale of fixed assets

To sell off fixed assets, it should be effected in accordance with the detailed regulations provided in the Decree of 71/2013/ND-CP regarding financial management applicable to companies receiving national fund investment or wholly owned by state entities and detailed regulations of the rules on fixed assets management.

Article 29: Book inventory

The person in charge of controlling fixed assets shall take a book inventory of fixed assets while referring to the actual results concerning them and their books.

6. Budgets

Article 30: Purpose

The purpose of a budget is to indicate the numerical objectives of business operations based on the company's business plan for each business year and to bring about smooth business operations and adjustment among the company's departments, for better operational efficiency of the company.

Article 31: System of budgets

The financial accounting department shall prepare budgets in accordance with the company's business plan.

- Budget of revenues and expenditures (Fare and non-fare components)
- Capital investment budget (Fare and non-fare components)
- Financial plan

Article 32: Control, implementation and assignment of budgets

1. The financial accounting department shall be responsible for controlling and assigning budgets to relevant departments.
2. In the implementation of a budget, it shall be ensured that the objectives of the budget will be achieved within the limits of the budget.
3. Budgets and actual results of their implementation shall always be compared, and if there arises any variance between the two, each relevant department shall report to the finance department and identify its cause.

Article 33: Change to budgets

1. If it is necessary to effect a change to a budget, the change shall be made in accordance with the prescribed procedure.
2. Any change to budgets shall be subject to the president's approval.

Article 34: Financial plans

Financial plans shall be prepared in accordance with the budget of revenues and expenditures and the capital investment budget.

7. Fiscal year end and reporting result

Article 35: Purpose

Accounting transactions in an accounting period shall be organized to clearly show the company's financial conditions during the period.

Article 36: Types of reports

The types of reports shall comply with Government Ordinance No. 71/2013/NĐ-CP for the Investment of the Government in Privates Businesses and the Control of Debts of Private Businesses Wholly Owned by the Government.

Article 37: Timing of reporting

The timing of reporting shall comply with Decision No. 15/2006/QĐ-BTC for the Publication of Corporate Accounting Systems and Decision No. 77/2010/QĐ-TTg for the Publication of Basic Reporting and Statistical Systems for Application to State-Run Businesses, and Private Businesses and Projects Invested in From Abroad.

(Details will be provided in the financial regulation at the year end)

III - Regulations on documents storage

Article 38: Storage system of accounting documents

The system of storage of accounting documents is as provided in Article 40 of Accounting law and Resolution of 218/2000/QĐ-BTC regarding storage system of accounting documents.

Points to be reminded on storage of original voucher:

- Unused vouchers and used vouchers should be stored in a safe place without a risk of being lost or broken.
- Used vouchers should be sorted out by the calendar date and stored as provided in the regulations on national storage for at least 5 years. Should any vouchers need to be separated, copy of the original at hand should be sorted out by the reference number and bound in one sheet and stored accordingly.

IV – Appendix

1. Accounting name system

Account code		Account name	Remarks
Level 1	Level 2		
		Type 1: Short term asset	
111	.	Cash	
.	1111	Cash in Viet Nam Dong	
.	1112	Cash in foreign currency	
112	.	Bank deposits	Detailed by each bank
.	1121	Deposits in Viet Nam Dong	
.	1122	Deposits in foreign currency	
113	.	Cash in transit	
.	1131	Cash in transit in Viet Nam Dong	
.	1132	Cash in transit in foreign currency	
121	.	Securities	
.	1211	Stocks	
.	1212	Bonds	
	1213	Securities and other financial products	
128	.	Other short term investments	
.	1281	Term deposits	
.	1288	Other short term investments	
131	.	Account receivable	
133	.	Deduction on value added tax	Detailed need to be itemized
.	1331	Deduction on value added tax in relation to products and services	
.	1332	Deduction on value added tax in relation to fixed assets.	
136	.	Receivable from affiliate companies	
.	1361	Receivable from affiliate companies	
.	1368	Loans to subsidiaries and affiliate companies	
138	.	Other receivables	
.	1381	Accounts in suspension	
.	1385	Receivable in relation to privatization	
.	1388	Other receivables	
141	.	Prepaid expenses	
151	.	Goods in transit	

152	.	Raw materials	Details need to be itemized
153	.	Tools and machineries	
154	.	Cost of manufacturing	
155	.	Products	
156	.	Goods	
.	1561	Cost of Purchased goods	
.	1562	Expenses related to purchasing	
.	1567	Real estates	
157	.	Goods on consignment	
158	.	Goods kept within bonded warehouse	
161	.	Business expenses	
.	1611	Business expenses of the previous year	
.	1612	Business expenses of the current year	
		Type 2: Long term fixed assets	
211	.	Tangible fixed asses	
.	2111	Land and buildings	
.	2112	Machineries and devices	
.	2113	Vehicles	
.	2114	Industrial tools, appliances and equipment	
.	2115	Industrial animals and plants	
.	2118	Other fixed assets	
212	.	Finance lease assets	
.	2121	Tangible assets under finance lease	
.	2122	Intangible assets under finance lease	
213	.	Intangible fixed assets	
.	2131	Right to the use of land	
.	2132	Right to distribution	
.	2133	Patent right	
.	2134	Trademark	
.	2135	Software	
.	2136	Franchising right	
.	2138	Other intangible fixed assets	
214	.	Accumulated amount of depreciation on fixed assets	
.	2141	Accumulated amount of depreciation on tangible fixed assets	
.	2142	Accumulated amount of depreciation on assets under finance lease program	
.	2143	Accumulated amount of depreciation on intangible fixed assets	

	2147	Accumulated amount of depreciation on real estate under investment	
217	.	Real estate under investment	
221	.	Investment in subsidiaries	
222	.	Shares of affiliate companies	
228	.	Other long term investment	
.	2281	Stocks	
.	2282	Bonds	
.	2288	Other investments	
229	.	Allowance for unrealized loss on long term investment	
	2291	Allowance for unrealized loss on investment in securities	
	2292	Allowance for loss on investment in other companies	
	2293	Allowance for doubtful account	
	2294	Allowance for unrealized loss on inventories	
241	.	Construction in progress	
.	2411	Purchase of fixed assets	
.	2412	Basic construction	
.	2413	Major repairs on fixed assets	
242	.	Long term prepaid expenses	
243	.	Deferred tax assets	
244	.	Long term deposit, long term pledged collateral	
		Type 3: Liabilities	
331	.	Accounts payable	
333	.	Unpaid corporate tax and others	
.	3331	Unpaid value added tax	
.	33311	<i>Temporary receipt of value added tax</i>	
.	33312	<i>Import value added tax</i>	
.	3332	Special sales tax	
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.	3334	Corporate income tax	
.	3335	Personal income tax	
.	3336	Natural resources tax	
.	3337	Rent tax on buildings and lands	
.	3338	Environment protection tax and other related tax	
.	33381	<i>Environment protection tax</i>	
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.	3339	Charges and other unpaid account	
334		Accounts payable to employees	
.	3341	Unpaid salary	
.	3348	Other accounts payable and other unpaid salaries to employees	
	.		
335		Unpaid expenses	
	.		
336		Accounts payable to affiliate companies	
	.		
337		Unpaid portion of construction in progress	
	.		
338		Other accounts payable	
.	3381	Adjustments for surplus asset	
.	3382	Budget for labor union expenses payable	
.	3383	Social insurance expenses payable	
.	3384	Welfare insurance expenses payable	
.	3385	Accounts payable for expenses related to privatization	
.	3386	Unemployment insurance expenses payable	
.	3387	Unrealized revenue	
.	3388	Other payables	
	.		
341		Financial lease loan amount and liabilities	
.	3411	Loans	
.	3412	Financial lease liabilities	
	.		
343		Corporate bonds	
.	3431	Ordinary bonds	
.			
.			
.			
	34311	<i>Price of corporate bonds</i>	
	34312	<i>Discount on corporate bonds</i>	
	34313	<i>Difference between over par issuing price and the nominal value</i>	
	3432	Convertible bonds	
	.		
344		Long term deposit payable	
	.		
347		Deferred income tax payable	
	.		
	.		
352		Allowance payable	
	3521	Allowance for products guarantee	
	3522	Allowance for construction work guarantee	
	3523	Allowance for business restructuring	
	3524	Other allowances	

353	.	Bonus and welfare	
.	3531	Bonus expenses	
.	3532	Welfare expenses	
.	3533	Welfare expenses in the form of fixed assets	
.	3534	Bonus fund for Company Operation Control Committee	
356	.	Expenses for Scientific and Research and Development projects	
.	3561	Expenses for scientific and technological development projects	
.	3562	Expenses for scientific and tenological development projects in the form of fixed assets	
357	.	Fund for Pricing stabilization	
		Type 4: Capital	
411	.	Capital	
.	4111	Paid-in capital	
.	4112	Capital surplus	
.	4118	Other capital	
412	.	Unrealized gain on revaluation of assets	
413	.	Translation adjustment for foreign exchange transactions	
.	4131	Translation adjustment for revaluation of foreign exchange related transactions	
.	4132	Transaction adjustment for foreign exchange transactions before the beginning of operation activity	
414	.	Accumulated reserve for investment development	
417	.	Accumulated reserve for business operation	
418	.	Other reserves	
419	.	Investment trust fund for stocks investments	
421	.	Unappropriated profit after tax	
.	4211	Unappropriated profit after tax in the first half of the year.	
.	4212	Unappropriated profit for the year	
441	.	Basic construction capital	
461	.	Subsidizing fund from the government	
.	4611	Subsidizing fund from the government for the first half of the year	
.			

	4612	Registered subsidizing fund from the government	
466	.	Fund in the form of fixed assets	
		Type 5: Sales	
511	.	Sales from selling goods and products and providing services	
.	5111	Sales of goods	
.	5112	Sales of products	
.	5113	Sales of services	
.	5114	Income from subsidy	
.	5117	Income from real estate business	
	5118	Income from other sources	
515	.	Income from financial activities	
521	.	Deduction from sales	
	5211	Discount on sales	
	5212	Price discount on goods	
	5213	Sales return	
		Type 6: Manufacturing cost and operation expenses	
611	.	Cost of goods purchased	
.	6111	Cost of raw materials	
.	6112	Cost of goods	
621	.	Direct manufacturing cost	
622	.	Direct labor cost	
623	.	Cost of machineries and facilities	
.	6231	Human expenses	
.	6232	Expenses on materials	
.	6233	Cost of manufacturing tools	
.	6234	Depreciation expenses on construction machineries.	
.	6237	Subcontractors service expenses	
	6238	Other cash expenses	
627	.	General manufacturing cost	
.	6271	Labor expenses at factories	
.	6272	Cost of materials	
.	6273	Cost of manufacturing tools	
.	6274	Depreciation expenses on fixed assets	
.	6277	Subcontractors service expenses	
.	6278	Other cash expenses	
631	.	Cost of manufacturing	

632	.	Cost of goods manufactured (Cost of raw materials, labor cost and so on)	
635	.	Financial activities cost	
641	.	Sales expenses	
.	6411	Labor cost	
.	6412	Materials and package cost	
.	6413	Tools and equipment cost	
.	6414	Depreciation expenses on fixed assets	
.	6415	Product quality guarantee cost	
.	6417	Subcontractors service expenses	
.	6418	Other cash expenses	
642	.	Company management cost	
	6421	Cost of management employees	
	6422	Cost of materials for management purposes	
	6423	Office supply expenses	
	6424	Depreciation expenses on fixed assets	
	6425	Tax, fees and charges	
	6426	General allowance expenses	
	6427	Subcontractors service expenses	
	6428	Other cash expenses	
		Type 7: Other income	
711		Other income	
		Type 8: Other expenses	
811		Other expenses	
821		Corporate income tax	
	8211	Corporate income tax for the year	
	8212	Deferred income tax expenses	
		Type 9: Operation profit and loss	
911		Operation profit and loss	

Hanoi Metro One Member LLC
Planning and finance department

The Socialist Republic of Viet Nam
Independent, Freedom, Happiness

Hanoi, Date/ Month/ 2015

2. Request for Prepayment, Advanced payment, and Reimbursement (Article 16)

Prepayment request

To: : President
Manager, Finance and Accounting
General Manager, XX Department

I, working at the department below would like to request prepayment for the items below:

Department :

Prepayment amount:

Amount in words :

Reason for the prepayment request :

President approval

**Manager, Finance and
Accounting**

**General manager, XX
Department**

Person of request

Request for reimbursement

To: : President

Manager, Finance and Accounting

General Manager, XX Department

I request for the reimbursement of the followings to President and Manager, Finance and Accounting:

Department:

No.	Receipt number	Details	Amount of reimbursement		
			Amount of goods	Tax	Total
01					
02					
Total					

*Amount in words***President approval****Manager, Finance and
Accounting****General manager, XX
Department****Person of request**

3. Accounting Process

Category	Class	Sub Class	Activity	Details on activity	Related party			Frequency	Documents
					Finance and Accounting dept.	Internal	External		
Finance and accounting	Accounting	Preparation of accounting slip	1 Before making payment request	① After execution of transaction, each department receives invoice from the customer		each department	customer	at any time	Invoice
			2 Preparation of payment request	② Staff in charge prepares payment request after reviewing the received invoice and verifying its compliance with related evidencing documents such as underlying agreement, invoices, receiving notice, transaction statements and so on.		each department		at any time	Payment request
			3 Approval from responsible department	③ Forward payment request along with all related documents to the head of each department for approval.		each department		at any time	All relevant documents required for effecting payment
				(In case approval is not granted, all documents should be returned to the staff in charge)					
				④ In case approval is granted, all documents are forwarded to Finance and Accounting dept.		each department		at any time	
			4 Examination of accounting documents	⑤ Staff in charge of documents inspection of the Finance and Accounting dept. reviews and examines the payment request and related evidencing documents. Should the approval is not granted, the documents are returned to the requesting department.		each department		at any time	
			5 Data posting	⑥ Posting data (Data entry into system)	accounting			at any time	
			6 Verification of posted data	⑦ Verification of posted data if necessary	accounting			at any time	

			7 Retaining accounting slip	⑧ Retain accounting slip and related evidencing documents after attaching them to designated papers.	accounting			at any time	
			8 Checking of unapproved accounting slip	⑨ Staff in charge of approval of each department and staff in charge of accounting operation should ensure that no unapproved accounting slip exists.	accounting	each department		at any time	
		Changing and cancellation of accounting slip	1 Requesting for changes or cancellation of posted accounting slip	① Staff in charge of each department should prepare request for changes or cancellation and forward to department head for approval when examining documents and finding that such changes or cancellation deemed necessary.		each department		at any time	Request for changes or cancellation of posted accounting slip
			2 Approval on request for changes or cancellation of posted accounting slip	② Request authorizer of each department reviews the details of such changes or cancellation and approves such action.		each department		at any time	
				③ Forward request for changes or cancellation to Finance and Accounting dept.		each department		at any time	
			3 Entering changes or cancellation of posted accounting slip	④ Staff of Finance and Accounting department makes changes or cancellation to the subject accounting slip.	accounting	each department		at any time	
				⑤ In case of cancellation, the retained evidencing documents should be returned to the staff of originating department for making revised accounting slip.	accounting			at any time	
			4 Reviewing posted accounting slip	⑥ Review posted accounting slip to check the details of request.	accounting	each department		at any time	

Rules for Fixed Assets

Contents

- I. General rules
 - 1. Purpose
 - 2. Scope and subject of application
 - 3. Definition, terms and abbreviations
 - 4. Legal basis and related documents
 - 5. Responsibilities
- II. Details of regulations
- III. Regulations on documents storage
- IV. Appendix

I- General rules

Article 1: Purpose

These Rules are intended to establish the basic requirements for controlling fixed assets in accordance with accounting rules.

Article 2: Scope and subject of application

- 1. Scope of application: Applicable to accounting operation on fixed assets and management, investment and storage operation of fixed assets.
- 2. Subject of application: Finance and accounting department, General Managers of each department, and staff in charge of management and investment of fixed assets.

Article 3: Definition, terms and abbreviations

- 1. Definiton and terms

Fixed assets :

- a. Criteria for tangible fixed assets

In order for an asset to be recognized as a tangible fixed asset, it must meet the following three criteria:

- It is certain that using the asset will enable the user to achieve economic benefits.

- The number of years the asset is expected to be used is not less than one year.
- The cost of the asset is determined, and its value exceeds 30,000,000 VND.

One asset system includes a number of individual assets with different useful lives, and even if some of them are lacking, the system as a whole may still be able to function. If an individual asset needs to be controlled in accordance with control and use requirements for fixed assets, and at the same time meets the three recognition criteria, the asset in question must be considered as an individual fixed asset.

b. Criteria for intangible fixed assets

An asset that meets the three criteria under Article 3.1 but does not belong to that category must be classified as an intangible fixed asset.

2. Abbreviations

Abbreviations	Meaning
TSCD	Fixed assets
TCKT	Financial accounting
UBND TP Ha Noi	Hanoi People's committee

Article 4: Legal basis and related documents

1. Legal basis

- Circular No. 45/2013/TT-BTC providing guidance on implementation of systems of management, investment and depreciation of fixed assets.
 - Decree No. 71/2013/ND-CP providing details on investment of national capital to enterprises and financial management of 100% state owned enterprises.

2. Related documents

- Vietnamese Accounting Standard (VAS)

Article 5: Responsibilities

1. Persons responsible

a. President

In accordance with the government's rules, the president must be responsible for instructing his or her employees to ensure the use and control of the company's fixed assets and for reporting to HPC periodically or specially.

b. Head of the financial accounting department

The head must be responsible for supervising office tasks relating to fixed assets, and periodically or specially reporting the usage of assets to the president.

c. Each departmental head (at HQ)

Each departmental head of the headquarters must be responsible for clarifying the status quo and usage of assets under his or her control; periodically or specially preparing and sending reports thereon to the financial accounting department; and instructing the departmental heads under his or her supervision as to office tasks relating to the control of assets.

d. OU head (at OU)

The OU head must be responsible for monitoring the implementation by each section head of control work on OU assets under his or her control. .

e. Section head (at OU)

Under the supervision of the head of the department he or she belongs to and of the OU head, each section head must be responsible for appropriate arrangement, use and maintenance of fixed assets of the section under his supervision, and for examining the assets to determine unnecessary or surplus ones, or otherwise dealing with their maintenance requirements.

f. Operators of fixed assets

Operators of fixed assets must be responsible for keeping and using fixed assets in appropriate manners for appropriate purposes.

2. Responsibility for compensation

- If any fixed assets are lost or damaged intentionally or through gross negligence, any persons involved in the loss or damage must pay the amount of compensation for any resulting loss or damage to the fixed asset.
- The head of the financial accounting department must determine who must pay that compensation according to the share of responsibility of those involved in the loss of or damage to the asset.
- The amount of compensation shall be based on the book value of the fixed asset current at the time of the loss or damage.
- If the loss or damage is due to a compelling reason, those involved in it must be exempt from the responsibility for compensation.

II. Details of regulations

1. Management of fixed assets

Article 6: Classification of fixed assets

Classification of fixed assets must be in accordance with the chart of accounts.

1. Tangible fixed assets

- Buildings and structures
- Machinery and equipment
- Rolling stock and power transmission
- Tools, furniture and fixtures
- Leased assets
- Other fixed assets

2. Intangible fixed assets

- Rights to use land and structures
- Goodwill
- Software
- Trademarks and geographical indications
- Patents
- Leased assets

3. Construction in process

Construction in process must include assets under item 1 or 2 that are being constructed.

4. Other assets

Article 7: Registration of ownership

If necessary, copyrights, rights to use assets, goodwill, patents and the like must be registered promptly in accordance with current legal requirements.

Article 8: Principles for control

1. All fixed assets needs to be accompanied by documents (including records of their delivery, their agreements in writing, receipts issued when they were purchased, and

other relevant documents). Fixed assets must be classified and each fixed asset numbered. Each fixed asset must have a control tag attached to it.

Fixed assets must be monitored in detail and the results of monitoring reflected in the fixed asset ledger.

2. Fixed assets must be controlled for each of their acquisition cost, amount of depreciation, and book balance.
3. Unused fixed assets that are being considered for resale but yet to be depreciated in full must be controlled, monitored, stored and depreciated in accordance with the relevant rules.
4. Fully depreciated fixed assets for use in the company's business activities must be controlled as ordinary fixed assets.

Article 9: Ledgers and forms

1. The head of the financial accounting department must establish control forms for fixed assets.
2. The head of the financial accounting department must prepare the fixed asset schedule for each fiscal year on the basis of each organizational unit's report.
3. The head of each department must be responsible for preparing a fixed asset ledger for the department's fixed assets.
4. The person in control of each fixed asset must attach a control tag to it. However, if that person decides that it is difficult to attach the control tag, he or she must make a method available for checking an actual fixed asset against its asset number included in the relevant document.
5. Each fixed asset ledger must be classified into the following sections: fixed assets for use in the railroad business, fixed assets for use in related business, fixed assets for use in miscellaneous activities related to business, and other assets. .
6. If a change - acquisition, loss or transfer - is made to the fixed assets, the person in control of them must record the change in the fixed asset ledger, and prepare and send a report thereon to the financial accounting department.
7. The person in control of the fixed assets must annually check the actual fixed assets against their quantity and balance included in the fixed asset ledger, and prepare and send a report on the check results to the financial accounting department.

Article 10: Acquisition, loss and transfer of fixed assets

1. Acquisition
 - a. Acquisition includes:
 - Creation, purchase or exchange of fixed assets
 - Improvement of fixed assets
 - Donation of fixed assets
 - b. Required documents
 - (1) For creation or improvement of fixed assets.
 - Financial statements for projects or construction works (To be prepared in accordance with the provisions of Directive No.48/2010/NĐ-CP and other related provisions.)
 - Written agreements
 - Receipts
 - Records of delivery
 - Other documents (if required)
 - (2) For purchase, exchange or donation of fixed assets
 - Receipts
 - Slips of delivery
 - Records of delivery
 - Acceptance records (if required)
 - Explanatory documents about assets (Drawings, designs, and related reference materials)
 - Customs documents (if required)
 - Written purchase agreements (if required)
 - Related reference materials
2. For loss
 - a. Loss includes:
 - Assignment or exchange of fixed assets
 - Scrapping, withdrawal or resale of fixed assets
 - Loss of or damage to fixed assets

b. Assignment or resale of fixed assets must be conducted as specified in Government Ordinance No. 71/2013/ND-CP for the Investment of the Government in Private Businesses and the Control of Debts of Private Businesses Wholly Owned by the Government.

- The Company may actively liquidate fixed assets that are broken, obsolete, not needed, or unusable to recover capital in an open and transparent manner to preserve capital.
- Prior to assets directly for use in the railroad business being assigned or resold, HPC's permission must be obtained.
- Resale or assignment of fixed assets must be conducted by a bidding organization and the company itself in an open manner in accordance with the procedures as specified in law for resale and assignment of fixed assets. If a fixed asset worth not more than a hundred million VND in book balance is assigned, the president must select the method of assignment either by bidding or by competitive quotation, and no resale price may be less than the fair market price of the fixed asset. Non-commercial assets may be assessed as to their price on the basis of quotations from appraiser organizations.
- Procedures for the resale and assignment of assets must be in accordance with the rules specified by the Ministry of Finance.

3. Transfer of assets

Transfer includes:

Transfer between sections, between departments, and between internal storage points.

Article 11: Construction in process

1. Definition Construction in process refers to a fixed asset that is being created, added, improved or otherwise dealt with and yet to be put into use.
2. A construction in process must be transferred from the construction in process account to the fixed assets account in either of the following events:
 - If a fixed asset starts being used in part prior to the completion of the construction works (Limited to the portion that starts being used.); or
 - If a fixed asset starts being used wholly after the completion of the construction works.

3. Settlement of discrepancies

Any discrepancies arising from the transfer of a construction in process into a fixed asset must be settled in accordance with applicable rules.

In order for precise settlement of discrepancies between assets to be conducted, their approximate amount must be used for preliminary adjustment, and then their precise amount for final adjustment.

4. Transfer of assets

Prior to a construction in process being transferred from one organizational unit in control of it to another unit, an inventory in transfer, a report of asset transactions involved, and other required documents must be prepared.

Article 12: Lendings, securities, and collaterals

1. Prior to the company lending assets, or taking securities or collaterals, it must obtain HPC's permission.
2. Lending, or taking securities or collaterals must be conducted effectively in such a manner as to maintain or increase the company's funds and in accordance with applicable legal rules, without adversely affecting the company's business.
3. Prior to lending assets, the business department must make an agreement with the lessee, for which the department must be responsible.

Article 13: Calculation of fixed-asset value

The acquisition value of a fixed assets refers to all the costs incurred to acquire the asset.

The method for calculating the acquisition value of an asset must be in accordance with Accounting Standards No. 3 (Tangible fixed assets) and No. 4 (Intangible fixed assets), Directive No.45/2013/TT-BTC, and other applicable current rules.

The value of a fixed asset must be calculated by the organizational unit in control of the asset, confirmed with the financial accounting department, and recorded in the fixed asset ledger.

Article 14: Depreciation of fixed assets

- Depreciation method: Straight-line method
- Useful life: As per the provisions of Directive No.45/2013/TT-BTC.
- For assets to which Directive No. 45/2013/TT-BTC is not applicable, another rules must be established and submitted to DOF for its approval.
- The depreciation method and service life must be reviewed annually.

- Leased assets must be depreciated in accordance with the current applicable rules in the same manner as the company's owned fixed assets. If the company promises at the commencement of a lease not to buy the leased asset, the asset must be depreciated over the lease term.

Article 15: Insurance on assets

1. Insurance on assets of high value must be effected and maintained in accordance with Government Directive No.71/2013/NĐ-CP in order to ensure the maintenance of the company's capital.
2. Insurance must be effected and maintained in accordance with the Insurance Management Law and other current applicable legal rules.

2. Organizing of fixed assets

Article 16: Principles for organizing fixed assets

1. Tangible and intangible fixed assets must be classified into the following categories:

- Fixed assets for use in the railroad business
- Fixed assets for use in related business
- Fixed assets for use in miscellaneous activities related to business

Further, fixed assets for use in the railroad business and related business must be subclassified and organized by route and line of business, respectively.

2. Construction in process and other fixed assets must be monitored and organized separately from the above fixed assets.

Article 17: Fixed assets for use in the railroad business

1. Tangible fixed assets

Tangible fixed assets must be organized by individual asset or by group of assets, and must be monitored in terms of quantity and price.

Subclassification and organizing of tangible fixed assets must be as detailed in Appendix 1 (attached hereto).

- Buildings and structures
- Machinery and equipment
- Rolling stock and power transmission

- Tools, furniture and fixtures
 - Other fixed assets
2. Intangible fixed assets Intangible fixed assets must be subclassified by individual asset and monitored in terms of price.

Article 18: Fixed assets for use in related business

Fixed assets for use in related business must be organized in the same manner as fixed assets for use in the railroad business.

Article 19: Fixed assets for use in miscellaneous activities related to business

Fixed assets for use in miscellaneous activities related to business must be organized in the same manner as fixed assets for use in the railroad business.

Article 20: Other fixed assets

Other fixed assets refer to fixed assets that do not belong to any of the categories of fixed assets for use in the railroad business, related business and miscellaneous activities related to business. The method for organizing fixed assets for use in miscellaneous activities related to business must be established by the head of the financial accounting department.

Article 21: Organizing of construction in process

Construction in process must be classified into the categories of construction in process for use in the railroad business, in related business and in miscellaneous activities related to business.

Further, construction in process for use in the railroad business and related business must be subdivided by route and by line of business, respectively.

III - Regulation on documents storage

The documents are regarded as accounting documents and should be stored in accordance with regulations specified in Article 40 of accounting law and those specified in Decision No. 218/2000/QD-BTC which announces the storage system of accounting documents.

IV – Appendix

1. Format of fixed assets control sheet (Separately prepared for each type of fixed assets)

Example: Control sheet of IT System

Hanoi City Urban Railway One Member LLC
8 – Ho Xuan Huong – Hai Ba Trung – Ha Noi

Time

Format:

Control sheet of IT System

Date: Month: Year: 20XX

Reference number	Asset code	Details of asset	Location	Department in use	Descriptions and specifications	Department	Volume	Current user	Remarks
1									
2									
3									

2. Format of Phisyical Inventory of Fixed Assets

Hanoi city Urban Railway One Member LLC
 8 – Ho Xuan Huong – Hai Ba Trung – Ha Noi

:

Inventory statement of fixed assets

Date: Month: Year: 20XX

Date: -

Location:

Examiner:

.....

Reference number	Asset code	Asset name	Descriptions and specifications	Department	Volume on book	Volume on actual count	Location/ position	remarks
1								
2								
3								

Cash Handling Rules

Contents

- I. General rules
 - 1. Purpose
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 - 3. Definition, terms and abbreviations
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 - 5. Persons responsible
- II. Details of regulations
 - 1. Receipt and payment, and storage of cash
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I.- General rules

Article 1: Purpose

The Rules shall provide the work items needed for the payment and receipt of cash to accurately, safely, and rapidly handle receipt and payment and work based on the Accounting Rules.

Article 2: Scope and subject of application

- 1. Scope of application: Applicable to receipt and payment and storage of cash
- 2. Subject of application: Staff of finance and accounting department, General Managers and staff who are engaged in receipt and payment of cash at each station

Article 3: Definition, terms and abbreviations

- 1. Definition and terms

Cash means cash, deposits, and cash in transit.

- 2. Abbreviations :

Abbreviations	Meaning
TCKT	Finance and accounting
KTT	Chief accountant

TGD	President
PTGD	Deputy President

Article 4: Legal basis and related documents

Accounting law, related circular and announcements

Article 5: Persons responsible

1. Persons responsible

a. Accounts section (Headquarters)

- General manager (Chief accountant): The chief person responsible for the accurate receipt and payment, and storage of cash in conformity with laws.
- Treasurer: The person responsible for the storage, receipt and payment of cash in the company.
- Accounting clerk responsible for receipt and payment: The accounting clerk who has instructions to inspect cash receipt and payment slips and take responsibility for the rationality and legality of their inspection.

b. General Affairs Section

- General manager of General Affairs Section (Headquarters): A person who takes responsibility for the, receipt and payment, and management of cash carried out in OU.
- Head of OU (OU): A person who takes responsibility for cash management and the allocation of cash management staff in OU.
- Person responsible for the receipt and payment, and storage of cash (OU): A person who has instructions to carry out and takes responsibility for the receipt and payment, and storage of cash.

2. If a person or a group of persons causes monetary damage to the company, the persons concerned takes responsibility for reimbursement based on the division of responsibility provided by the general manager of Financial Accounting Department. In the case, however, where it is proved that a person has been carefully performing management as a good manager, the person is exempted for responsibility.

II. – Details of regulations

1. Receipt and payment, and storage of cash

Article 6: Receipt and payment of cash, payment for receipts, and deposit to a bank 1. Requests for payment to outside the company shall be conducted by the department of the company responsible for the concerned business.

2. A business requiring prompt payment shall be handled on a priority basis.

3. In principle, payment shall be conducted by cash transfer to a bank account. A payment of two million VND or less may be paid by cash after consultation.

4. Processes

- An accounting clerk receives a request for the receipt or payment of cash.
 - An accounting clerk checks the details of the receipt or payment of cash (within three days).
 - A chief accountant approves these actions (within three days).
 - A chief accountant applies for the president or the entrusted vice president approval (within two days).
 - An accounting clerk prepares receipt or payment slips or request forms for cash transfer to a bank account after receiving a proper voucher (within one day).
 - A chief accountant and the president approve slips or cash transfer request forms (within two days).
 - When receiving cash by transfer to a bank account, Financial Accounting Department always checks receipts transferred to the account.
 - When a business connection does not pay cash by the due date, Financial Accounting Department prepares a debt notice and sends it to the business connection.
 - An accounting clerk responsible for receipt and receipt stores slips, cash transfer request forms, and vouchers.
5. As to demands for the receipt/payment/advance payment/advance payment return, following conditions should be met:
- Approved by the person responsible (the leading person of Group/Department/Section or the president or the entrusted vice president).
 - The other party and the details of demand must be appropriate.

- Documents such as a purchase request, a demand for payment/advance payment/advance payment return, and other necessary documents (estimates, receipts, etc.) must be attached.
 - An amount of cash must be accurately calculated.
6. The request for reimbursement and return of prepaid expenses should be prepared by each department and submitted to finance and accounting department within 10 days of receiving the bill and before 10 days prior to the payment deadline.
 7. Cash receipts shall be immediately accepted within two days after the Section manager approves the request for receipt.

Article 7: Registration of a payment account

1. In the case of cash transfer to a bank account, the person concerned shall send information on the payment account to Financial Accounting Department together with the request for payment (only for the first payment).
2. When changing the payment account, the person concerned shall send information on the change of the payment account to Financial Accounting Department together with the request for payment.

Article 8: Management of operating revenue

1. Management of station revenue: Business Department shall manage station revenue. Station receipts shall be directly deposited to the bank account.
2. Management of revenues from relevant businesses
 - Accounting Section prepares receipt slips and schedule by contract and by business connection.
 - An accounting clerk responsible always checks the above and reports to the general manager every month.
 - When payment from a business connection is delayed, the accounting clerk cooperates with Business Department to make a request for immediate payment.

Article 9: Issue and management of receipts

1. In accordance with the current law, print and issue the receipts.
2. When accepting cash from business connection, the person concerned shall issue a receipt (except the case no receipt is required).
3. Financial Accounting Department shall take responsibility of storing receipts.

Article 10: Monitoring of receipt and payment

1. The chief accountant shall take responsibility for preparing a monitoring form.
2. The accounting clerk responsible for receipt and payment and the treasurer shall use the form for reporting.
3. The accounting clerk shall take responsibility for inquiring and reporting the balance.
4. Timing of reporting
 - Report of station cash: every day.
 - Report of the deposit and cash: every day.

2. Inspection

Article 11: Inspection

The general manager of Financial Accounting Department shall take responsibility for carrying out the work below on a periodic or temporary basis and assign persons in charge of implementing the work.

- Inspection of cash
- Inspection of cash management of stations
- Inspection in the case of the movement of the chief accountant or persons responsible for cash handling
- Inspection shall be conducted whenever necessary.

III – Regulations on documents storage

Article 12 : Accounting documents concerning receipt and payment of cash should be stored in accordance with the regulations provided in Article 40 of Accounting law and Decision:218/2000/QD-BTC concerning the announcement of management system of accounting materials.

Separate storage required: Receipt of cash income, Receipt against payment of cash, Monthly cash balance statement

IV- Appendix

Sample of monthly cash balance statement

Cash Balance Statement

At XX hour of Date/ Month/ Year, at the Accounting department of Hanoi Urban Railway One Member LLC, we have audited cash balance with the following members:

Representatives of Hanoi Urban Railway One Member LLC:

1. Mr./Ms. (Accounting staff in charge of receipt and payment of cash)
2. Mr./Ms. (Accounting staff)

The result is as follows:

Reference	Cash note type	Counted number	Amount (in VND)
1	500,000		
2	200,000		
3	100,000		
4	50,000		
5	20,000		
6	10,000		
7	5,000		
8	2,000		
9	1,000		
10	500		
11	200		
12.	Others (Foreign currency, notes, tickets and others)		
	Total amount		
	Amount by the documents		
	Difference		

Cause of difference :

Receipt of the most recent cash received : ref. no.

Amount :

Receipt of the most recent cash paid: ref. no.

Amount :

Manager, cash receipt and
payment

Chief accountant

Staff, accounting

Budgeting Rules

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I - General Rules

Article 1: Purpose

These Rules stipulate the basic requirements for the procedures for preparing, implementing and controlling budgets in accordance with the accounting rules.

Article 2: Scope and subject of application

1. Scope of application: These Rules stipulate the requirements for the procedures for preparing, implementing and controlling budgets in accordance with the accounting rules.

2. Subject of application: Finance and accounting department, General Managers of each department, and staff responsible for budget planning

Article 3: Definition, terms and abbreviations

1. Definition and terms

Budget means calculating estimated values based on certain premise.

- Calculation based on fixed unit cost
- Application of similar cases
- Calculation method based on indexes (nationally available)

2. abbreviations

Abbreviations	Meaning
TCKT	Financial accounting
TSCD	Fixed assets
TGD	President

Article 4: Legal basis and related documents

1. Legal basis:

- Accounting laws and related decrees and circulars

2. Related documents:

- Vietnamese Accounting Standards (VAS)

Article 5: Responsibilities

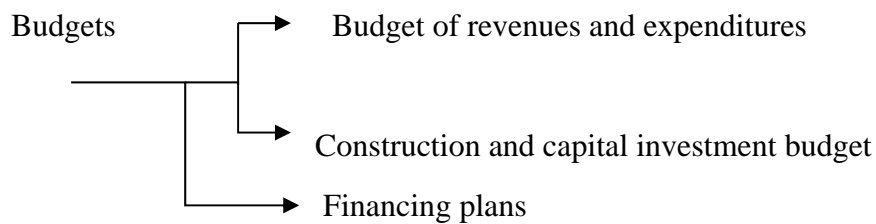
1. Each department shall appoint a person in immediate charge of budgeting.
2. The head of each department shall be responsible for checking, approving and sending budgets to the financial accounting department.
3. The financial accounting department shall be responsible for checking and organizing and submitting budgets to the president for approval.
4. The head of the financial accounting department shall stipulate the form of a budgeting table.

II - Details of regulations

1. Budget system

Article 6: Budget system

1. Budget system



2. A budget needs to be divided into two components: fare and non-fares.

Article 7: Budget period

2. A budget period shall be the business period starting on January 1 of each year and ending on December 31 of the same year.
3. A budget of revenues and expenditures shall be prepared in accordance with the three-year plan (the budget for the initial year being prepared in detail on a monthly basis and the budgets for the following two years in yearly total for each budget item).
4. A construction and capital investment budget shall be prepared in accordance with the five-year plan. (The budget for the initial year being prepared in detail on a monthly basis and the budgets for the following four years in yearly total for each budget item.)

Article 8: Basis for budgeting

1. A budget shall be prepared on the basis of the company's short- and long-term plans.
2. A budget of revenues and expenditures shall be prepared on the basis of the company's activity plan.
3. A construction and capital investment budget shall be prepared on the basis of the company's construction and capital investment plan.

2. Budget planning

Article 9: Preparation and implementation of a budget

1. The planning and project department shall prepare the company's short-term business plan (annually) and long-term business plan (each three or five years).
2. Such plans shall be subject to the president's approval.
3. In accordance with the form stipulated by the financial accounting department, each department shall prepare and organize a budget of detailed items properly. Except for the initial year, a budget of revenues and expenditures shall be prepared in accordance with the results of revenues and expenditures for the immediately preceding year.
4. The head of each department shall control, approve and send a budget of his or her department to the financial accounting department.
5. The financial accounting department shall check, evaluate, and adjust budgets for agreement with other relevant departments, prepare the company's budget, and submit it to the president for approval.
6. Such budget shall be subject to the president's approval.
7. The financial accounting department shall be responsible for assigning a budget to each budget implementation department.
8. Each budget implementation department shall compare the budget assigned to it and the results of implementing the budget, analyze the variance (if any), and prepare and send a monthly report to the financial accounting department.

Article 10: Budget monitoring

The financial accounting department shall, on the basis of the report from each department, prepare a table comparing the budget and the implementation results, monthly, thereby monitoring the budget.

Article 11: Change to budgets

If, as a result of budget monitoring, it is found necessary to effect a change to the budget for any compelling reasons, the department in

question, in consultation with the financial accounting department, shall obtain the president's approval of the change to the budget.

3. Financing plans

Article 12: Steps in preparing and implementing a financing plan

1. In accordance with of a budget of revenues and expenditure and a construction and capital investment budget, the planning and project department shall prepare a financing plan and obtain the president's approval of it.
2. The financial accounting department shall be responsible for managing and assigning funds for their efficient use in accordance with the approved financing plan.
3. For efficient assignment of funds, each department shall monthly send a schedule of monies to be received and paid for the month in question and the following three months.

Article 13: Change to financing plans

For any important change to a budget, the planning and project department shall change the financing plan accordingly, and obtain the president's approval of the changed plan.

Article 14: Monitoring of financing plans

The financial accounting department shall, on the basis of the report from each department, prepare a table comparing the forecast and results of financing, monthly, and analyze any variance between the plan and the results.

III – Regulations on documents storage

Article 15: Documents storage

1. The documents are part of financial and accounting documents and should be stored in accordance with Article 40 of Accounting law and Decision of 218/2000/QD-BTC, announcement on storage system for financial and accounting documents.

2. In addition to finance and accounting department, each department should keep one original copy of the documents for budget related operation.

IV - Appendix

1. Format of budget control sheet detailed for each item

Budget		Department				
number	Detailed operation/ items	Department	Volume	Unit price	Total	Remarks
Total amount						
Remarks :						

2. Annual budget planning sheet (monthly breakdown)

Budget for 20XX (Ordinary expenditures)	Department :												
Items	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1. Sales/ Revenue													
1.1. Revenue from fare business													
1.2. Revenue from non-fare business													
Total													
2. Cost													
2.1. Cost of raw materials and materials													
2.2. Workers' wages directly engaged in the operation													
2.3. Cost for Transport Operation													
2.4. Other cost													
Total Cost													
3. Fixed expenditures													
3.1. Salary of office workers													
3.2. Office rent													
3.3. Utilities (Electricity, water and heating supply)													
3.4. Scheduled maintenance, repair and improvements on buildings													
3.5. Cleaning													
3.6. Gasoline bill / transportation benefit													
3.7. Travelling expense													
3.8. Fixed telephone bill of the office													

3.9. Postage														
3.10. Internet														
3.11. Mobile phone expense														
3.12. Rent on internet data transmission														
3.13. Subscription fee/ maintenance and page renewal fee for the internet website														
3.14. Advertising														
3.15. Conference meeting related expenses														
3.16. Expenses for technical information materials														
3.17. Insurance														
3.18. Subscriptions														
3.19. Seminars														
3.20. Computers														
3.21. Rent for factory and office														
3.22. Other miscellaneous expenses														
3.23. Regular maintenance fee														
3.24. Attorney fee														
3.25. Other consulting services														
3.26. Additional reserve for extra expenses (5%)														
Total														

3 . Detailed budget statement for each item (To be used in case one item contains many sub items)

Detailed budget statement for 2-XX <i>Detailed statement (To be attached)</i>	Department :												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Cost													
1.1. Cost of raw materials and materials													
1.1.1.													
1.1.2.													
....													
Total													

4 . Format of budget control sheet for facilities investments (For whole year)

Budget of 20XX <i>Investments</i>	Department :												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Disbursement													
1. Facility 1													
2. Facility 2													
3. Facility 3													
....													
Total													

5. Format of 5-years budget control sheet (Ordinary expenditures)

5-years budget plan (2016-2020) <i>Ordinary expenditures</i>	Department :					
Items	2016	2017	2018	2019	2020	Total
1. Sales/ Profit						
1.1. Profit from fare business						
1.2. Profit from related business						
Total						
2. Cost						
2.1. Cost of raw materials and materials						
2.2. Workers' wages directly engaged in the operation						
2.3. Transportation cost						
2.4. Other cost						
Total Cost						
3. Fixed expenditures						
3.1. Salary of office workers						
3.2. Office rent						
3.3. Utilities (Electricity, water and heating supply)						
3.4. Scheduled maintenance, repair and improvements on buildings						
3.5. Cleaning						
3.6. Gas line bill / transportation benefit						
3.7. Travelling expense						
3.8. Fixed telephone bill of the office						
3.9. Postage						
3.10. Internet						
3.11. Mobile phone expense						
3.12. Rent on internet data transmission						
3.13. Subscription fee/ maintenance and page renewal fee for the internet website						
3.14. Advertising						
3.15. Conference meeting related expenses						
3.16. Expenses for technical information materials						
3.17. Insurance						
3.18. Subscriptions						
3.19. Seminars						
3.20. Computers						
3.21. Rent for factory and office						
3.22. Other miscellaneous expenses						
3.23. Regular maintenance fee						
3.24. Attorney fee						
3.25. Other consulting services						

3.26. Additional reserve for extra expenses (5%)						
Total						

6. Format of 5-years budget control sheet (Facilities investments)

5-years budget plan (2016-2020) <i>Investments</i>	Department :					
Items	2016	2017	2018	2019	2020	Total
Disbursement						
1. Facility 1						
2. Facility 2						
3. Facility 3						
...						
Total						

Rules for the Closing of Accounting Books

Contents

I – General Rules

1. Purpose
2. Scope and subject of application
3. Definition, terms and abbreviations
4. Legal basis and related documents
5. Responsibilities

II – Details of regulations

III - Regulations on documents storage

IV - Appendix

I - General rules

Article 1: Purpose

In accordance with applicable legal rules, these rules for the closing of accounting books establish the procedures required for the closing of accounting books and the preparation of financial reports.

Article 2: Scope and subject of application

1. Scope and details of closing of accounting books
 1. Compliance with standards for recording of accounting transactions
 2. Closing of accounting books
 3. Closing adjustment
 4. Preparation of financial statements
 5. Financial reporting
2. Subject of application

Finance and accounting department

Article 3: Definition, terms and abbreviations

1. Definition and terms

Closing of accounting books means to aggregate accounting data concerning income,

expense, profit, assets and capital and corporate liabilities against nation. The operation involves Corporate income tax filing statement, Value added tax filing statement (incase direct filing is selected), Accounting balance sheet, Reporting of result of business operation, Statement of cash flows (financial reporting) and the total trial balance for whole year (365 days basis) in accordance with Decision 48.

2. Abbreviations

Abbreviations	Meaning
TCKT	Financial accounting
TGD	President

Article 4: Legal basis and related documents

- Decision No. 77/2010/QĐ-TTg announcing the basic statistic reporting system which shall be applicable to corporations and projects that have received investment from state-owned corporations and foreign corporations.
- Decree No. 71/2013/NĐ-CP regarding the investment of national capital to the corporation and financial management of the 100% state-owned corporations.
- Decree No. 83/2013/NĐ-CP which stipulates detailed regulations on implementing tax administration law and revises and supplements certain articles of tax administration law.

Article 5: Responsibilities

1. President

Is responsible for directing staff to close accounting as provided in the governmental regulations. Also is responsible to ensure the legality of accounting vouchers at the time of account closing and to report regularly or at request.

2. General Manger, Finance and accounting

Is responsible to ensure the legality of accounting vouchers, to settle regularly or at request, and to report to the President.

II. Details of regulations

1. Recording of accounting transactions

Article 6: Standards for the recording of accounting transactions

1. Accounting transactions must be recorded on the accrual basis of accounting.
2. Records of the accounting books must be in the order in which the economic or financial affairs occurred.
3. Records of the accounting books must be in accordance with the provisions of the Accounting Law, and related government ordinances and directives.

Article 7: Accounting books

1. General ledgers: General journal and general ledger
2. Detailed ledgers: Subsidiary ledgers and vouchers
3. Forms, contents and entry methods for ledgers and journals must be in accordance with Decision No.15/2006/QĐ-BTC.

Article 8: Preparation of vouchers

1. Vouchers must be prepared in accordance with the chart of accounts.
2. Vouchers must be in accordance with the standards for the recording of accounting transactions.
3. Vouchers must be based on evidence of the occurrence of the transaction involved.
4. Any errors in the records of the accounting transactions must be corrected in accordance with Decision No.15/2006/QĐ-BTC.

Article 9: Subsidiary ledgers

Subsidiary ledgers must be used to record economic or business affairs that occur with respect to accounting items required to be monitored in detail for control purposes. Data included in detailed ledgers must give information for use in the control of such properties, funds, revenues and expenses as not reflected in the journals or ledgers.

Article 10: General ledger

The general ledger must be used to record economic and financial affairs that occur in each accounting or fiscal period, in accordance with the chart of accounts as specified in the chart of accounts system applicable to corporations in general. Accounting data included in the general ledger must reflect the conditions and results concerning the properties, funds, production and management of the corporation involved.

Article 11: General journal

The general journal must be used to record economic and financial affairs that occur in each accounting or fiscal period, in the order in which the affairs occur and in their corresponding accounts. Accounting data included in the general journal must reflect the total of the amounts entered on each of the debit and credit sides of the account titles used by the corporation involved.

Article 12: Organizing of accounting books

1. Vouchers must be organized in the order of their issue number.
2. Subsidiary ledgers must be organized in the order in which the account titles are arranged in the chart of accounts. However, the following account titles must be organized as specified below.
 - Fixed assets for use in the railroad business: By route and by account title

- Fixed assets for use in related business: By line of business and by account title
 - Construction in process for use in the railroad business: By route segment and by account title
 - Construction in process for use in related business: By line of business and by account title
 - Operating revenues from the related business: By line of business and by account title
 - Operating expenses from the related business: By line of business and by account title
3. The general ledger must be organized in the order in which the account titles are arranged in the chart of accounts.
 4. The trial balance of totals must be organized by month.

Article 13: Retention of accounting books and forms

The retention periods for the accounting books and forms must be as specified below.

1. Accounting data used by the financial accounting department for control purposes, including accounting books and forms not directly used for the recording in accounting books or for the preparation of financial reports: Five years at minimum.
2. Accounting books and forms directly used for the recording in accounting books and for the preparation of financial reports, unless otherwise specified by law: Ten years at minimum.
3. Accounting data of historic value and of significance in economic, security and defense terms: Permanently.

2. Closing of accounting books

Article 14: Timing for the closing of accounting books

Accounting books must be closed at the end of each month, each quarter and each year.

Article 15.: Closing adjustment

1. Closing adjustment must be made, in principle, in accordance the following requirements:
 - Supplies must undergo a physical inventory taking at the end of the current period, and their physical inventory must be checked against the book inventory in order to adjust any discrepancies between the physical balance and book balance.
 - Goods delivered or works completed by the end of the current period that have been accepted or successfully inspected must be treated as accounting transactions in the current period when adjustment is made to either of the two accounts.
 - Receivables or payables belonging to the current period that have not been settled by the end of the current period must be adjusted by using the Accrued Receivables and Accrued Payables accounts, respectively.

- Revenues or expenses belonging to the current period that are yet to be received and paid, respectively (known as accrued accounts) must be adjusted by using the Accrued Revenue and Accrued Expense accounts, respectively. On the other hand, revenues or expenses belonging to the next and subsequent periods that are received and paid in advance, respectively (known as deferred accounts) must be adjusted by using the Deferred Revenue and Deferred Expense accounts, respectively.
 - Items adjusted by using suspense accounts (payments in advance and other suspense payments for liquid assets, temporary payments involving construction in process, deposited received and others) for which settlement for any discrepancies are possible must be adjusted by transferring them to their corresponding account.
 - Tangible and intangible fixed assets must be depreciated by using the direct method of cost allocation.
 - Any loss to assets must be accounted for in accordance with the current law (Article 27.2 of Government Ordinance No.71/2013/NĐ-CP).
 - Allowances for assets must be in accordance with VAS Standard No.18.
 - Common cost for railway business and non-fare business shall be allocated pro rata to the ratio of income.
 - Profit shall be first adjusted for the loss carried over from the previous year as provided in the corporate income tax law and then used as contribution to research and science and technology development fund as provided in the relevant law, and then corporate income tax will be paid out. Any remaining profit shall be distributed as follows:
 - + Adjust for the loss of previous year which is not deducted from pre-tax profit.
 - + Any remaining portion of profit shall be distributed as follows:
 - a) Contribute 30% of the remaining profit to development and investment fund
 - b) Contribute to the fund for reward and welfare
 - c) Contribute to the fund for corporate manager bonus
 - d) In case contribution is made to the fund for reward and welfare as provided in b) above, if any shortage in the amount occurs, the Company may reduce the contribution to development and investment fund for that shortage and use the fund to supplement the fund for prize and welfare. However, that amount should not exceed the contribution amount made for the fund for development and investment for the year.
 - e) Any residual profit after the contribution and payment as provided in a), b), c) and d) above, will be appropriated to enterprise arrangement and development fund.
2. The closing adjustments in the preceding paragraph No.1 must be made as specified below.

The closing adjustments for the items in the preceding paragraph No.1 must be made at the end of each month.

Article 16: Preparation of a trial balance of totals

A trial balance of totals must be prepared at the end of each month on the basis of the general ledger.

3. Reporting

Article 17: Financial reporting system

The financial reporting system must include annual and interim financial reporting. The reporting form must be in accordance with Decision No.200/2014/TT-BTC.

1. Annual financial reporting

- Balance sheet of accounts (Format B 01 – DN)
- Reporting of operating results (Format B 02 – DN)
- Cash flow statement (Format B 03 – DN)
- Explanatory document to financial reports (Format B 09 – DN)

2. Interim financial reporting (Short version)

Interim financial reporting at mid-year should contain the following items:

- Interim balance sheet (Form B 01b – DN)
- Report of interim operating results (Form B 02b – DN)
- Midyear interim statement of cash flow (Form B 03b – DN)
- Explanatory document to selective financial reports (Form B 09b – DN)

Article 18: Statistical reporting

1. Statistical reporting must be in accordance with Decision No.77/2010/QĐ-TT.

2. Reporting period:

(1) Monthly reporting: Monthly reporting must include the following items:

- Net receipts by area of activity
- Volumes of traffic offered, by area of activity

(2) Interim reporting: Number and wages of employees

(3) Annual reporting: Annual reporting must include:

- Identification information about the reporting corporation
- Indexes reflecting the results of management and production of the reporting corporation, including revenues, taxes, expenses paid to the government and profits, each by area of activity

- Number and wages of employees; and social, medical, unemployment and labor-union expenses paid by the reporting corporation
- Funds invested during the reporting period, by source and object of investment
- Investments made for research, technological development, and environmental treatment and protection purposes
- Indexes of utilization of information technology at the reporting corporation
- Indexes reflecting waste treatment and environmental protection at the reporting corporation
- Indexes reflecting products/quantities, scale of operations, and productivity of the reporting corporation

Article 19: Tax information reporting

1. Tax information reporting must be in accordance with provisions and guides included in the tax administration law, and related Decrees and Circulars.
2. Monthly value-added tax (VAT) return
3. Monthly corporate-income tax (CIT) return

Article 20: Financial planning

1. Financial planning must be in accordance with Decision 71/2013/ND-CP.
2. Financial planning must be submitted to HPC and DOF every year.

III. Regulation on documents storage

Documents should be stored in accordance with article 40 of Accounting law and the Decision No. 218/2000/QD-BTC regarding the introduction of accounting documents storage system.

IV. Appendix

1. Types of reports, submission deadlines, and who to submit to

Reporting			First quarter			Second quarter			Third quarter			Fourth quarter			
	Type of report	Content	1	2	3	4	5	6	7	8	9	10	11	12	1
VAS & 15/2006/QĐ-BTC	Annual *1	Annual financial reporting													X (30d)
	Quarterly *1	Interim reporting				X (20d)			X (20d)			X (20d)			
77/2010/QĐ-TTG	Annual *2	Annual reporting			x (31 th)										
	Interim *2	Interim reporting on labor and approximate wages						x (12 th)						x (12 th)	
	Monthly *2	Monthly reporting		x (12 th)		x (12 th)	x (12 th)	x (12 th)	x (12 th)	x (12 th)	x (12 th)	x (12 th)	x (12 th)	x (12 th)	x (12 th)
71/2013/ND-CP	Annual *4	Annual Financial planning							x (31 th)						
83/2013/ND-CP & 21/2012/QH13	Monthly *3	VAT		x (20d)	x (20d)	x (20d)	x (20d)	x (20d)	x (20d)	x (20d)	x (20d)	x (20d)	x (20d)	x (20d)	x (20d)
	Quarterly *3	CIT			x (31d)	x (30d)			x (30d)			x (30d)			x (30d)
	Annual *3	CIT	90 days after the end of the fiscal year												

Who to submit to

*1: DOF, Tax Bureau, Statistics Bureau and HAPI of the city of Hanoi, HPC

*2: Statistics Bureau of the city of Hanoi

*3: Tax Bureau of the city of Hanoi

*4: HPC, DOF

2. Format of documents storage classification table

Reference number	Type of documents	Details	Code
1	Payment voucher	Payment of cash	PCxxx-yyzz
2	Receiving voucher	Receiving of cast	PTxxx-yyzz
3	Debit note	Debit entry on bank account	BNxxx-yyzz
4	Credit note	Credit entry on bank account	BCxxx-yyzz
5	Income note	Recording of realized income	DTxxx-yyzz
6	Accounting note	Recording of remaining value	PKxxx-yyzz

Of the above: xxx – Serial number of vouchers

yy – Month in which the accounting incident occurred

zz – Year in which accounting incident occurred

Contract Management Rules

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Chapter 1 General Rules

Article 1 Objective

This document provides basic rules on the management and performance of buying and selling, borrowing and lending, contracting contracts, and other acts concluded by the Company, aiming to enable the Company to perform contract work in an appropriate way.

Article 2 Definitions of Terms

The definitions of the terms used in this document are as follows:

1. Construction means construction work for building, producing, modifying, and repairing objects.
2. Object means movable and immovable property other than cash and securities.
3. Article means movable property other than cash and securities, excluding goods.
4. Partner means a contractor concluding a contract with the Company selected as a winning bidder.
5. Contracting Division means the division responsible for contract negotiations and conclusion, consisting of Planning and Project Department as well as Sales and Public Relations Department.
6. Contract Performance Division means each division performing contract in the Company.
7. Bidding means the process to select a contractor concluding and performing a contract.

Article 3 Approval Authority

1. The Owner approves a buying and selling, borrowing and lending, and other contract for half the value or more of the total assets mentioned in the Company's latest financial report, or for the value less than that provided in the articles of incorporation of the Company.
2. The general meeting of the members of the Company decides to conclude a property buying and selling contract, as well as a borrowing, rental, and lease contract, for a value less than that of the total assets mentioned in the Company's latest financial report.
3. The President decides to implement an investment project and to conclude a buying and selling, borrowing, lending, rental, lease, and other economic

contract approved by the general meeting of the members of the Company for the 25% or less of the value of the total assets mentioned in the Company's latest financial report.

4. The general meeting of the members of the Company has the power to give the President its authority to decide on a property investment project.
5. The President has the power to sign the letter of attorney giving the Vice President the authority to approve a contract under the jurisdiction of the President.

(To be corrected after the articles of incorporation of the Company is approved.)

Article 4 Person in Charge of Contract (Contracting Division)

1. General Manager of Sales and Public Relations Department is responsible for bidding, negotiations for contract maintenance, and submission for review, as well as contract conclusion, performance, and cancellation, on a purchase contract of materials and equipment used for urban railways.
2. General Manager of Planning and Project Department is responsible for bidding, negotiations of contract maintenance, and submission for review, as well as contract conclusion, performance, and cancellation, on a contract of purchasing office equipment, investment, and advertisement.
3. Contracting Division delegates the performance and management of a contract to divisions related to packaging and the contract after completing bidding procedures and contract conclusion, depending on the types of business.
4. Notwithstanding the provision of the preceding paragraph, the Chairperson of the general meeting of the members of the Company and the President may, on a special occasion, delegate work on bidding, contract negotiations, submission for review, and obtaining approval, as well as contract performance and cancellation, to related divisions.

Article 5 Contract Types

Contracting Division selects the type of contract depending on the nature, requirements, and peculiarities of business. The following show the types of contract:

1. Lump sum contract
2. Fixed unit price contract
3. Adjusted unit price contract
4. Time Contract

In actuality, when there is a national requirement, depending on the nature and types of business, or a prescribed contract form, Contracting Division shall use an appropriate type.

Article 6 Investigation of Contract Offerors

A team specializing in bidding and Contracting Division shall investigate the means, credit, technology, experience, and equipment of applicants who want to make a contract through bidding.

Article 7 Examination and Submission of the Contracts to Be Concluded

After completing work on bidding for selecting the other party, as well as on contract negotiations and completion, Contracting Division is responsible for examining and submitting the contract document with the party satisfying the requirements for means, credit, technology, experience, and equipment.

Article 8 Contract Ledgers

Contracting Division and Contract Performance Management Division shall prepare a contract ledger to clearly record the information needed for the contract every time a contract is concluded.

Chapter 2 Contract Conclusion

Article 9 Contract Conclusion Principles

1. Contracts shall be concluded on the principle of optionality, equality, goodwill, cooperation, and no violation of laws and social morality.
2. Contracts shall be concluded after Contracting Division has completed the selection of a client in accordance with the rules and both parties have completed contract talks.
3. When continuously or repeatedly making a contract for buying and selling, borrowing and lending, or contracting, or in other necessary cases, Contracting Division may conclude a basic contract in advance specifying provisions common to individual contracts.

Article 10 Prohibition of Contracting

Contracting Division shall not conclude a contract with the other party if any of the following cases applies:

1. When the Division finds that the other party is a bankrupt or a lawbreaker.
2. When the Division finds that the contract price is inappropriate and consensus-building negotiations are unsuccessful.
3. When the Division finds that the other party does not have necessary means, experience, and finances as described in the document submitted by the party for investigation.
4. Other cases provided by laws or the Owner.

Chapter 3 Contract Performance

Article 11 Notice

To ensure contract performance after conclusion, Contracting Division shall notify related divisions of necessary information.

Article 12 Prohibition of the Other Party's Mandate and Assignment of Performance of Obligations

Contracting Division shall not allow the other party of the contract to mandate a third party to perform part or all of the concluded contract. Provided, however, that the other party has submitted a written notice in advance and it cannot restore rights after bankruptcy, or in an unavoidable case, Contracting Division may approve the mandate.

Article 13 Prohibition of the Mandate of Receipt of Contract Prices

Contracting Division shall not allow the other party of the contract to mandate a third party to request or receive a contract price based on the said contract. Provided, however, that the other party has submitted a written notice in advance and in an unavoidable case, Contracting Division may approve the mandate.

Article 14 Postponement or Delay in Performance

1. When the other party of the contract fails to perform obligations within the agreed period, Contract Performance Division shall require the other party to notify in advance the reasons and the scheduled date of performing obligations in writing.

2. When the reasons described in the preceding paragraph are not attributable to both parties or attributable to the Company, Contract Performance Division may extend the period specifying a reasonable period of time.

3. Even if the reasons described in Paragraph 1 are attributable to the other party of the contract, Contract Performance Division shall not cancel the contract, and for a reasonable period of time, deal with the case as delay in performance, provided that there is no serious hindrance to the business of the Company.

4. When dealing with the case as delay in performance pursuant to the preceding paragraph, Contract Performance Division shall collect a penalty for delay in performance from the other party. The amount and calculation method of the penalty are defined in the contract and differ depending on contract types.

Article 15 Site Inspection before Contract Performance

1. When it is needed to ensure the investigation of performance status, material investigation or testing, witnessing, process control, safety assurance, approval of drawings prepared by the other party of the contract, instructions to the other party, and other acts needed for the proper performance of the contract, Contract Performance Division (hereafter called "Contract Performance Division of the OU") shall supervise

the said acts.

2. When Contract Performance Division finds that the other party of the contract has no chance of completing work under its charge within the agreed period, the Division shall require the other party to immediately report such result to the Company giving the reasons for it.

Article 16 Notice and Inspection of Tender of Performance

1. When the progress in the work of the other party of the contract is behind schedule, the work described in the contract and performed by the other party is insufficient, or the work has been completed as contracted, Contract Performance Division shall require the other party to notify the result to the Company in writing.

2. When receiving the notice described in the preceding paragraph, Contract Performance Division shall instruct staff members in charge of inspection (hereafter called inspectors) to immediately perform inspection.

3. When inspection is completed, Contract Performance Division shall instruct inspectors to prepare a completion report or an inspection report.

4. When inspection results show that all or part of obligation performance is delayed, in breach of the contract, or unreasonable, Contract Performance Division shall require the other party of the contract to offer corrective maintenance or a substitute. In this case, when receiving the notice form the other party that it has offered corrective maintenance or a substitute, the Division shall instruct inspectors to immediately perform inspection pursuant to the provision of Paragraph 2.

Article 17 Mandate of Supervision and Inspection

Contract Performance Division may mandate persons other than staff members to perform the supervision prescribed in Article 15 and the inspection prescribed in Article 16.

Article 18 Delivery and Acceptance Inspection of Subject Matters

1. After the other party of the contract has completed performance, Contract Performance Division shall be responsible for the quality inspection and acceptance inspection of the subject matters.

2. Defective subject matters (not yet satisfying the contract requirements) shall be repaired. Unrepairable subject matters shall be removed. The party causing the defects shall bear all expenses for repair, reinspection, and other defect repair, as well as progress in contract performance.

3. The delivery and acceptance inspection of subject matters shall be performed in compliance with laws applicable to each type and details of work.

Article 19 Contract Price Payment

1. Contract Performance Division shall make a payment based on the provisions of the contract on the number of times, time, agreed period, and documents of payment in cooperation with the other party of the contract.
2. Except for the case where both parties must follow different provisions, Finance and Accounting Department shall make every payment to the other party of the contract in full after subtracting the amount of advance and the amount of construction defect guarantee money prescribed in the agreed contract.
3. The payment for derivative (non-contractual) work for which unit price is not provided on the contract shall be made in accordance with the supplementary agreement between both parties as well as with related laws and regulations.

Article 20 Payment Time

Payment time shall be determined through negotiations between both parties. It shall not exceed 14 business days after the date Finance and Accounting Department receives a proper request for contract price payment provided in the contract. The actual procedures are specified as follows:

1. Contract Performance Management Division shall complete all relevant procedures within seven business days after the date of fully receiving a proper request for contract price payment from the other party, submitting the payment request to Finance and Accounting Department.
2. Finance and Accounting Department shall be responsible for making the payment within seven business days after the date of fully receiving a proper request for contract price payment.

Article 21 Requests for Contract Price Payment

1. Contract Performance Division shall be responsible for verifying the conformance of the request for contract price payment prepared by the other party of the contract to the type, contract price, and details specified in the contract.
2. Requests for contract price payment (including their forms, if any) shall be explicitly specified in the contract, and shall be verified by the Contract Performance Division of the OU.

Article 22 Advance Payment of Contract Prices

1. After the contract takes effect and the Company obtains an advance payment guarantee, if any, Contract Performance Division shall notify the other party of the contract to pay the advance provided in the contract.

2. The amount of advance payment shall be specified in the contract depending on the type of the contract and the nature of business, and Contract Performance Division shall properly apply the provision on the amount (or percentage) of advance payment when negotiating to complete the contract.

3. Advances shall be collected from the first time of payment, and each collected amount shall be specified in the contract based on the agreement of both parties. The collection of advances shall be completed by the time when the amount of payment reaches 80% of the contract price.

Article 23 Final Payment of Contract Prices

1. When the other party of the contract has fully completed the performance of obligations, Finance and Accounting Department shall be responsible for notifying the other party and making inspection and final payment.

2. The contract adjustment document prepared by the other party of the contract shall comply with the type of the contract and the amount of the contract price. Descriptions in the contract adjustment document shall be consistent with those agreed by both parties and provided in the contract.

Article 24 Contract Settlement

1. Contracts shall be settled in the following cases:

a) When both parties have completed claims and obligations in accordance with the concluded contract.

b) When the contract has been cancelled due to statutory regulations.

2. A contract shall be settled within 45 days after the date when both parties of the contract have completed claims and obligations or when the contract has been cancelled due to Item **b**) in Paragraph 1. A large-scale contract, however, shall be settled within 90 days.

Article 25 Insurance and Guarantee in Accordance with Contract Provisions

1. Insurance

Contracting Division shall require the other party of the contract to purchase various types of insurance in accordance with existing Vietnamese regulations. Details thereof are specified in the contract.

2. Guarantee

a) The other party of the contract shall be responsible for construction and equipment guarantee. Guarantee services shall be performed in accordance with Vietnamese regulations.

b) Guarantee may be made in a form of guarantee or in other forms by agreement between both parties.

c) The period of guarantee shall be specified in the contract in accordance with individual requirements for construction and equipment.

3. Contract Performance Division shall inspect the performance of the other party of the contract and make reporting.

Article 26 Guarantee against Defects

1. When finding the hidden defects of the delivered subject matter or the damage caused by such defects, Contract Performance Division shall require the other party of the contract to offer a substitute for a considerable period or claim damages, or claim damages together with claiming the offering of a substitute.

2. In the case mentioned in the preceding paragraph, Contract Performance Division may, when finding it impossible to achieve the objective of the contract, report to the President and cancel the contract, notwithstanding the provision in the preceding paragraph.

3. Contract Performance Division shall make a claim for damages or other compensation pursuant to Paragraph 1 or make a cancellation of the contract pursuant to the preceding paragraph within one year after the date of the delivery of the subject matter. Both parties may, however, agree on different periods depending on the nature and objective of the contract.

Chapter 4 Contract Cancellation

Article 27 Contract Cancellation

Contract cancellation shall be specified in the contract. In the cases falling under any of the following items, however, Contract Performance Division may cancel all or part of the contract:

1. When the other party of the contract fails to perform all or part of obligations without due cause, or has no chance of performing obligations within the agreed period.

2. When the other party of the contract fails to follow the instructions of the company at the time of supervision or inspection, obstructs the execution of duties of the Company, or has acted illegally.

3. When it is found that the other party of the contract has breached contractual obligations, resulting in the failure of achieving the objective of the contract.

4. When the other party of the contract has had its business license revoked by the authorities, or has been ordered to suspend business.

5. When the other party of the contract has become an entity without capacity to conclude a contract, has disappeared, or has died.

6. When the other party of the contract has commenced bankruptcy proceedings, has commenced reorganization proceedings, has filed a petition for commencement of reorganization proceedings or has been filed a petition for commencement of bankruptcy proceedings, or when the Company finds that the financial standing of the other party, against which is extremely low.

7. When the other party of the contract has offered to cancel the contract for due cause.

8. When the Company finds it particularly necessary, in addition to the cases mentioned in the preceding paragraphs.

Article 28 Penalty

1. When canceling all or part of the contract due to reasons attributable to the other party of the contract, Contracting Division shall collect a penalty. In this case, the rate of penalty shall be specified in the contract. When canceling part of the contract, however, Contracting Division shall collect a penalty corresponding to the canceled part.

2. When canceling all or part of the contract due to reasons attributable to the Company or due to the Company's own reasons, causing damage to the other party of the contract, Contracting Division may agree on paying a considerable amount of compensation to the other party, and shall report to the President or the Vice President in charge. The method of calculating compensation is specified in the contract.

Article 29 Contract Modifications and Discontinuation of Performance

1. When finding it particularly necessary, Contracting Division may modify the details of the contract, or require the other party of the contract to suspend the performance of its obligations in writing.

2. When modifying the details of the contract or requiring the other party to suspend the performance of its obligations pursuant to the provision in the preceding paragraph, and finding that the agreed contract price or agreed period is inappropriate, Contracting Division may increase or decrease the said price, or extend or shorten the said period.

3. When modifying the details of the contract or requiring the other party to suspend the performance of its obligations pursuant to the provision in Paragraph 1, causing a loss to the other party of the contract, Contracting Division shall make a considerable amount of compensation to the other party.

Article 30 Contract Adjustment and Increase or Decrease in Contract Amount

1. Principles of increase or decrease in contract amount and contract adjustment

a. Increase or decrease in contract amount and contract adjustment shall apply within the agreed contract performance period. When the increased or decreased

contract amount and the adjusted contract amount (contract price after adjustment) do not exceed the amount of the approved package, the Company has authority to decide the amount of adjustment. When they exceed the amount of the approved package, the Company report to the Owner and obtain permission.

b. Adjustment methods shall be specified for each type of contract.

2. Adjustment of contract workload

a. The adjustment of contract workload shall be specified in the contract and made in accordance with the agreement between both parties.

b. The parties to the contract shall, before performance, agree on the unit price of derivative work, other than the agreed contract work, for which no unit price has been specified in the contract.

c. Existing statutory rules shall be applied to the adjustment.

3. Increase or decrease in contract amount

a. Increase or decrease in contract amount shall be applied only to contracts based on fixed unit prices, adjusted unit prices, and time. The contract documents shall specify, by agreement between both parties, the cases where increase or decrease in contract amount is allowable, as well as the procedures, range, methods, and grounds of adjustment. The methods of increase or decrease in contract amount shall comply with the type of the contract price, the nature of the contract work, and statutory rules.

b. Increase or decrease in contract amount is performed through increase or decrease in unit price and the adjustment of contract workload, and specified in the contract.

4. Contract adjustment

a. Contract adjustment includes the adjustment of the amount of work, adjustment of the contract price, adjustment of performance progress, and others, if any.

b. When contract adjustment does not modify the objective of investment, or when the adjusted amount does not exceed the amount of the agreed package, the general meeting of the members of the Company or the President may make a decision. When contract adjustment modifies the objective of investment, or when the adjusted amount exceeds the amount of the agreed package, the Owner's permission shall be needed.

5. Adjustment of progress in contract performance

a. The contract document shall specify, by agreement between the parties to the contract, the cases where they may adjust progress in performance. When the

performance fails to be completed within the agreed period, the parties to the contract shall clarify the responsibility for the damage caused by delay in progress.

b. When the other party of the contract has made a request for progress adjustment, the Contract Performance Division of the OU shall inspect and prepare a report on the items and work to be adjusted, obtaining confirmation from the other party of the contract.

6. Except for Paragraphs 2, 3, 4, and 5 in this Article, Vietnamese existing regulations shall apply depending on the type of the contract.

Tender and Contract Process Rule

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Chapter 1: General Rules

Article 1. Objective and Subjects

In order to achieve company-wide unification in contractors and contracts, this rule defines necessary steps for selecting contractors and contracts, and ensures fairness, transparency, and an effective management goal for company budgets.

Article 2. Subjects

General meeting, president, vice president, each department and section in HQ and OU, and other directly-related members

Article 3. Sharing of Responsibilities

1. The sales and PR department manager shall work as a chair for bidding procedures regarding urban railway facilities and material procurement; for contract negotiation and completion; submission for reviewing; and for contract conclusion, execution, and termination.

2. The plan and project department manager shall work as a chair for purchasing equipment for offices; for bidding procedures regarding procurement of investment, advertisement, etc.; for contract negotiation, completion, and submission for reviewing; and for contract conclusion, execution, and termination.

3. Notwithstanding the provisions of the preceding Items, the chairman of the general meeting or the president, as necessary, may assign each department the tasks related to bidding procedures, contract negotiation/completion/submission for reviewing, and contract conclusion/execution/termination. Each department shall prepare necessary documents for the individual contract including specifications and drawings.

Article 4. Applicable Laws

When this rule does not define all items, related laws are applied for tasks related to bidding in addition to the standards that are defined in this rule.

When the national government provides revisions, additions, or instructions, follow such revisions, additions, or instructions.

Article 5. Terminology

The following terms in these rules are defined as follows:

1. *OM Company*: Hanoi City Urban Railway Ltd.
2. *Owner*: Hanoi People's Committee
3. *HQ*: Each department that belongs to the OM Company
4. *OU*: Each department and section that belongs to the railway operating unit.

Article 6. Selection of Contractors or Investors

During execution of the bidding process, the department primarily responsible shall meet deadlines that are described in Article 12 of the Bidding Law. In cases when there is a difference due to the nature of a practice, the department primarily responsible shall report it in order for the responsible vice president or president to examine it and make decisions.

Article 7. Conditions for the Issuance of the Invitation and Request for Bids

1. A Plan for Selecting Contractors is approved.
2. An Invitation for Bids (IFB) and a request are approved.
3. An IFB notification, an estimate adjustment competition invitation, or a short list is posted in accordance with the provisions of the Bidding Law.
4. A package fund is arranged in line with the progress status of the package.
5. For regular procurement or concentrated procurement, contents/list of items, services, and budget are approved by an authorized person.
6. Acceptance of the construction site is ensured in line with the progress status of the package.

Article 8. Eligibility of Business Partners

1. When a business partner meets the requirements below, it is recognized as an eligible organization or entity:

- a) Possesses a registration form for establishment and management that is issued by an authorized organization of a country in which a contractor or an investor is doing business;
- b) Its accounting is independent;
- c) Not recognized to be in a condition in which it is not able to pay back debt due to an ongoing dissolution process, bankruptcy, or provisions of a law;
- d) Registered with the national bid network system;

đ) Is able to ensure competitiveness during bidding, in accordance with Article 6 in the Bidding Law 43/2013/QH43 issued by the Vietnamese Parliament;

e) Recognized that it is not subject to a prohibition period for bidding;

g) When a short list is selected, it is named on the list; and,

h) For overseas contractors who attend to international bidding in Vietnam, they must cooperate with domestic contractors in Vietnam, or must hire a domestic subcontractor. However, this shall not apply to the cases when domestic contractors have no required ability for participating in any projects in the package.

2. When a business partner meets the requirements below, it is recognized as eligible:

a) Possesses an adequate civil legal capacity in accordance with the law provisions of a country, in which the party is a citizen of;

b) Possesses an adequate professional certification in accordance with the law provisions;

c) Is registered as a legal business in accordance with the law provisions;

d) Is not facing criminal prosecution; and,

đ) Recognized that it is not subject to a prohibition period for bidding.

3. Eligible business partners based on the provisions in the previous Items 1 and 2 may submit a competitive bid on their own, or as a JV qualification. For joint parties, an agreement between the parties shall be made, in order to clearly specify the responsibilities of the leader of the JV, and shared and individual responsibilities of each member,

Article 9. Budget price

1. The departments that are directly involved with the package shall calculate prices of such items (hereinafter referred to as the “budget price”) based on the related drawings, specifications, design documents, etc., and shall prepare the separately specified forms of a budget price record and a budget price breakdown (hereinafter referred to as the “budget price documents”).
2. The budget price shall be specified for a total price or a unit price.
3. The budget price and the budget price documents shall not be disclosed at the bidding.

Article 10. Information of Bidding

The responsible department has a responsibility for instructing each unit on implementing Article 7 (stipulating provision/registration of bidding information) and Article 8 (stipulating the deadline and procedures for providing/registering bidding information) in the Government Ordinance 63/2014/NĐ-CP, issued on 26th June, 2014.

Article 11. Governing Language for Bidding

Governing language for domestic bidding shall be in Vietnamese. For international bidding, English, or English and Vietnamese shall be used.

Article 12. Bid Currency

The responsible department shall clearly specify a bid currency in the IFB or the request (the IFB is used for general competitive bidding and se

lective bidding, and the request is used for a direct commission).

Article 13. Bid Bond

1. Bid bond is applied for the following cases:

a) Service provision other than consulting, supply procurement, construction, general competitive bidding of mixed packages, selective bidding, and estimate adjustment competition or product proposal competition;

b) General competitive bidding for selecting investors and direct commission;

2. A contractor shall implement a bid bond before a deadline for submitting the bid document or proposal document. When employing a two-step bidding style, the contractor shall implement a bid bond at the second step.

3. The amount of a bid bond is specified in the IFB or the request. Depending on the size and nature of the package, it shall be about 1-3% of the package price.

4. The effective term of a bid bond is specified in the IFB or the request. It shall be 30 days in addition to the effective term of the bid document and proposal document.

5. In order to extend the effective term of the bid document and proposal document after the submission deadline of the bid document, the responsible department shall request for an extension to the contractor depending on the effective term of the bid bond. In such cases, the contractor shall extend the term depending on the effective term of the bid bond, and shall not make any changes for the contents of the submitted bid document and proposal document. When the contractor rejects an extension, the bid document and proposal document shall become ineffective and will be excluded. In such cases, the responsible department shall report to the company leaders, and shall return bid bond money or terminate the bid bond within 20 days after receiving from the contractor the document of extension rejection.

6. When attending a bid through a JV qualification, each participant of the JV may implement a bid bond separately, or with mutual agreement, together with the other participant. The amount of the bid bond shall be smaller than the amount stated in the IFB or the request. If any participant of the JV violated the provisions in Item 8 of this Article, bid bond money shall not be returned to any participants of the JV.

7. The company (responsible department) shall return bid bond money to an unselected contractor, or terminate its bid bond within 20 days after approval of a contractor/investor selection, in accordance with the deadline specified in the IFB or the request. For a selected contractor, the bid bond money shall be returned and the bid bond shall be terminated, after the contractor implemented a contract guarantee in accordance with the provisions of Article 66 in the Bidding Law.

8. The bid bond money shall not be returned or the bid bond shall not be terminated in the following cases:

a) When a contractor retrieves its bid document and proposal document after the deadline of the bid document submission and within the effective term of the bid document and proposal document;

b) When a contractor violates a law regarding bidding, resulting in inducing a cancellation of bidding in accordance with Item 4, Article 17 in the Bidding Law;

c) When a contractor does not implement a contract guarantee in accordance with the provisions of Article 66 in the Bidding Law; or

d) Unless absolutely necessary, when a contractor fails or refuses to prepare a contract within 20 days after receiving a notification of successful bid, or refuses to conclude the contract even when the contract is prepared.

Article 14. Cancellation of Bid

1. When all bid documents and proposal documents do not meet the requirements of the IFB or the request.

2. When the investment goal and coverage that are specified in the IFB or the request are changed.

3. When the IFB or the request does not comply with the provisions of laws regarding bidding or other related laws, resulting in the selected contractor or investor to fail to meet the requirements for executing the package or the project.

4. When evidence exists to show committing/assisting bribery, bid-rigging, fraud, or abuse of power, with an intention to illegally interfere with bidding and to mislead selection of a contractor or investor.

Article 15. Responsibility of Bid Cancellation

If an organization or individual violates a law which results in failing to the bid, based on provisions of Items 3 and 4 in Article 14 (Cancellation of Bid), it shall compensate the involved parties and shall receive punishment under the law.

Article 16. Plan for Selecting Contractors

The responsible department shall instruct each related department and section to prepare a plan for selecting contractors depending on the size and nature of the work.

The plan and project department is responsible for reviewing the plan for a bid and submitting it for requesting approval.

The related departments and sections are responsible for preparing a plan for selecting contractors.

In terms of principles, methods, contents, submissions, reviews, and decisions, a plan for selecting contractors shall be prepared in accordance with the provisions of the Bidding Law (Articles 33, 34, 35, 36, and 37 in Chapter III).

Article 17. Issuance of Bid Instructions

When employing a general competitive bidding style, the personnel responsible for the contract shall prepare and issue the bid instructions that describe all necessary information for submitting the bid document.

Article 18. Submission of a Bid Document

- 1 For bidding, the personnel responsible for the contract shall require a submission of a sealed bid document with the necessary information and signature in a sealed envelope from a bidder.
- 2 For cases of the previous Item, personnel responsible for the contract may receive the bid document by mail or through an agent.
- 3 When personnel responsible for the contract receives the bid document through an agent in accordance with the previous Item, an authorization letter is required to be submitted.
(This will be discussed in the next phase as well)

Article 19. Prohibition of Exchanging a Bid Document, etc.

1. A contractor may exchange a bid document before its submission deadline.
2. After bid opening, a contractor cannot exchange a bid document.

Article 20. Bid Opening

1. When the bid documents specified in provisions of Article 18 are submitted, the personnel responsible for the contract shall open them in the presence of all bidders.
2. The company has a responsibility to bring the package-related departments into bid opening, or to invite authorized organizations (when they exist).
3. In order to attend bid opening, a company's permission or presentation of appropriate documents is required.

Article 21. Valid Bid

Valid bid shall be clearly defined in the IFB and the request. For changing the valid conditions for bidding, the responsible department shall report the changes to the president or vice president for examination and decision-making, and notify any changes to the bid participants by a written document.

Article 22. Deciding a Successful Bidder

1. After holding a verification/review meeting for the bidder selection, the responsible department shall notify a contractor that meets the requirements of a successful bidder, and shall categorize the contractor.

2. Completion of contract negotiations shall conclude a package implementation contract with the contractor.

Article 23. Rebid

1. When no successful bidder by provisions exists after bid opening, the department responsible for the contract shall report to the president or responsible vice president, and shall promptly start a rebid.

2. For rebid of a package with a pre-examination, contractors that participated in the first bid shall not be required to repeat the pre-examination. The pre-examination (if applicable) shall be required for contractors that did not participate in the first bid.

3. When there is a rebid, the department responsible for the contract shall not change the original conditions including the budget price.

Article 24. Archival of a Bid Document

The sales and PR department manager, the plan and project department manager, and other directly-related departments shall archive the bid documents that are opened, along with related documents.

Article 25. Procedure for Selecting a Contractor

1. The procedure is implemented in accordance with Chapter 2 of these rules.

2. Its details are defined by the government (described in Style for Selecting a Contractor, and will be discussed at a later date).

Chapter 2: Style for Selecting a Contractor**Article 26. International Bidding**

International bidding shall be implemented when the following conditions are met:

1. A package with aid funding from a donor who desires international bidding;
2. A supply procurement package, of which the supply cannot be domestically produced,

or technology, quality, and price requirements for the supply cannot be met even when it is domestically produced. However, international bidding shall not be implemented for a routine item that is imported to Vietnam and sold.

3. Consulting services, services other than consulting, construction, and a mixed package of these above of which domestic contractors cannot meet the requirements for implementation. (These shall be discussed further when the government specifies details in the Bidding Law)

Article 27. General Competitive Bidding

1. General competitive bidding is a method for selecting a contractor that does not limit the number of participating bidders.
2. The general competitive bidding procedure shall consist of:
 - a) Preparation of contractor selection,
 - b) Execution of contractor selection,
 - c) Evaluation of bid documents and contract negotiations,
 - d) Submission, review, approval, and announcement of the contractor selection results, and
 - đ) Contract completion and execution.

Article 28. Selective Bidding

1. Selective bidding shall be applied to a package with only a limited number of contractors, which can meet the package requirements for high technology or special technology.

2. The selective bidding procedure shall consist of:
 - a) Preparation of contractor selection,
 - b) Execution of contractor selection,
 - c) Evaluation of bid documents and contract negotiations,
 - d) Submission, review, approval, and announcement of the contractor selection result, and
 - đ) Contract completion and execution.

Article 29. Direct Commission (Negotiated Contract)

1. Direct commission for a contractor shall be applied for the cases below:
 - a) A package to immediately overcome or timely respond to its damages on the occurrence of force majeure. ;

c) A package that supplies consulting services or other services, a package and research that require supply procurement from a contractor that previously executed a contract in order to maintain consistency of technology/copyright, a package with an experimental nature, and a purchasing package of an intellectual property.

d) A consulting service supply package with a building design and feasibility study report for when a maker for the selected building design is designated or when a maker with adequate abilities based on the provisions is selected. A construction package for a memorial structure, relief, luxurious picture, or art work, which involves a copyright from a creation phase to a construction phase.

đ) A relocation package for land expropriation of an infrastructure facility that is directly managed by a dedicated organization. A bomb/mine/explosive disposal package for preparation of a construction site.

e) A package whose public product, service supply package, and price are within an applicable range for direct commission in accordance with adequate economic/social conditions in government regulations.

2. Direct commission, which is defined in c, d, đ, and e in Item 1 of this Article, shall be implemented when the following conditions are adequately met:

a) An approved investment decision exists. However, this shall not be applied for a consulting package of project preparation;

b) An approved plan for selecting contractors exists;

c) Funding is arranged in line with the requirements based on the progress status of the package;

d) An approved estimate by rules exists. However, this shall not be applied for an EP package, EC package, EPC package, and turnkey package.

đ) The term for direct commission shall be within 45 days from the approval of the request to conclude a contract. For a large-scale and complicated package, the terms shall be within 90 days.

e) A contractor that is proposed direct commission shall be listed in a contractor database of the national agency, which is in charge of governing bid activities.

3. Another contractor selection method is recommended for a package that is subject to direct commission, defined in Item 1 of this Article, and that meets the direct commission conditions, defined in Item 2 of this Article, but that also can be applied to other types of contractor selection, defined in Article 27 (General Competitive Bidding), Article 28 (Selective Bidding), Article 30 (Estimate Adjustment Competition), and Article 31 (Direct Purchase) of these rules.

4. Direct commission for investors shall be applied for the cases below:

- a) Only one investor is registered for execution;
- b) Only one investor is feasible in terms of arranging intellectual property, confidentiality of business/technology, or funding.
- c) The investor who proposes a feasible plan in accordance with the government regulations, as well as being able to meet the most effective implementation requirements.

5. For direct commission, the contractor selection procedure shall be as follows:

- a) Direct commission with a regular process shall involve the steps of: preparation of contractor selection; execution of contractor selection; evaluation of contractor's proposal and negotiations; submission, review, approval, and announcement of the contractor selection result; and contract completion and execution.
- b) Direct commission with an abbreviated process shall involve the steps of: preparation of a contract draft; sending the draft to a contractor; contract negotiations/completion; submission, approval, and announcement of the contractor selection result; and contract execution.

Article 30. Estimate Adjustment Competition / Product Proposal Competition

1. Estimate adjustment competition / product proposal competition shall be applied to a package whose price is within a range that is specified in the government regulations, and shall correspond to any of the following:

- a) A package that provides services other than regular, simple consulting;
- b) A procurement package for supplies that are sold in markets with standardized technological characteristics and equivalent quality; and
- c) A simple construction package with an approved construction design document.

2. Estimate adjustment competition / product proposal competition shall be implemented when the conditions below are met:

- a) An approved plan for selecting contractors exists;
- b) An approved estimate in accordance with rules exists; and
- c) Funding is arranged in line with the requirements based on the progress status of the package.

3. For estimate adjustment competition / product proposal competition, the contractor selection procedure shall be as follows:

a) Estimate adjustment competition / product proposal competition with a regular process shall involve the steps of: preparation of contractor selection; execution of contractor selection; evaluation of bid documents and contract negotiations; submission, review, approval, and announcement of the contractor selection result; and contract completion and execution.

b) Estimate adjustment competition / product proposal competition with an abbreviated process shall involve the steps of: preparation of an estimate request; sending the request to a contractor; submission of an estimate by the contractor; evaluation of the estimate and contract negotiations; submission, approval, and announcement of the contractor selection result; and contract completion and execution.

Article 31. Direct Purchase

1. Direct purchase shall be applied for a supply procurement package that belongs to the same procurement plan/budget, or a different procurement plan/budget.

2. Direct purchase shall be implemented when the conditions below are met:

- a) A contractor that became a successful bidder in general competitive bidding or selective bidding, and that had previously concluded a package implementation contract;
- b) A package that has similar contents and nature, and its size is 130% smaller than the previously concluded package;
- c) A unit price of work in a directly purchased package shall not exceed the unit price of the equivalent work in the previously concluded similar package; and
- d) A period, from when a previous package contract was concluded to when a direct contract decision is approved, shall not exceed 12 months.

3. When a contractor that implemented the previous contract is unable to implement a direct purchase package continuously, direct purchase shall be applied to another contractor that meets requirements regarding abilities, experience, technologies, prices in the previous IFBs, and contractor selection.

4. For direct purchase, the contractor selection procedure shall be as follows:

- a) Preparation of contractor selection;
 - b) Execution of contractor selection;
 - c) Evaluation of contractor's proposal and negotiations;
 - d) Submission, review, approval, and announcement of the contractor selection result;
- and
- đ) Contract completion and execution.

Article 32. Self-Implementation

1. Self-Implementation shall be applied to a package that belongs to a plan or procurement budget, when an organization that directly manages/uses the package possesses the required technological abilities, financial strength, and experience for the package.

2. For self-implementation, the contractor selection procedure shall be as follows:

- a) Preparation of a self-implementation draft and contract draft;
 - b) Completion of the self-implementation draft, contract negotiation and completion;
- and
- c) Contract execution

Article 33. Contractor Selection under Special Circumstances

For a package with special and unique conditions, of which the styles to select a contractor specified in Articles 27, 28, 29, 30, 31, and 32 of these rules are inapplicable, the Owner, chairman of the general meeting, and the president shall consult and decide on a method to select a contractor.

Chapter 3: Concentrated Procurement

Article 34. General Provisions of Concentrated Procurement

1. Concentrated procurement shall be applied to cases for purchasing a large amount of the same items or services.

2. Concentrated procurement shall be implemented for a case corresponding to any of the following:

- a) The company (related departments) gathers procurement needs, selects a contractor, and directly contracts with a contractor that is selected as an item/service supplier.

- b) The company (related departments) gathers procurement needs, selects a contractor, and concludes a framework with a selected contractor(s). Based on this, an

organization with procurement needs directly contracts with a contractor that is selected as an item/service supplier.

3. The company (related departments) selects a contractor, based on a concluded contract with each organization that has shared roles or needs.

Article 35. Agreed Framework

1. An agreed framework in concentrated procurement shall be a long term agreement between the company and the selected contractor(s). It shall contain standards and conditions that serve as a basis of procurement by individual contract.

2. As specified in the plan for selecting contractors, an effective term of the agreed framework shall be within three years.

Chapter 4: Regular Procurement

Article 36. Applicable Conditions

Regular procurement of items/services shall be implemented when the following conditions are met:

1. Uses a regular procurement fund; and
2. For items/services that are listed on a regular procurement list for maintaining regular activities of the company and OU.

Article 37. Execution of Contractor Selection

1. Contractor selection for regular procurement shall be executed in accordance with the provisions of Articles 38, 39, 40, 41, 42, and 43 of the Bidding Law.

Chapter 5: Style to Select a Contractor

Article 38. Single-Stage: One-Envelope Bidding Procedure

1. A single-stage: one-envelope bidding procedure shall be implemented for the cases below:

a) General competitive bidding and selective bidding for a package of service provision other than consulting, and a small-scale supply-procurement/construction/mixed package;

b) Estimate adjustment competition for a package of service provision other than consulting, supply procurement, and construction;

c) Direct commission for a consulting service, service provision other than consulting, supply procurement, construction, and a mixed package;

d) Direct purchase for a supply procurement package; or

đ) Direct commission for selecting an investor.

2. In accordance with the requirements in the IFB or the request, a contractor and investor shall submit a bid document and a proposal that includes technological and financial proposals.

3. Bid opening shall be one time only for all bid documents and proposals.

Article 39. Single-Stage: Two-Envelope Bidding Procedure

Shall follow Article 29 of the Bidding Law.

Article 40. Two-Stage: One-Envelope Bidding Procedure

Shall follow Article 30 of the Bidding Law.

Article 41. Two-Stage: Two-Envelope Bidding Procedure

Shall follow Article 31 of the Bidding Law.

Chapter 6: Evaluation Method of a Bid Document/Proposal, and Review/Approval of Successful Bidder

Article 42. Evaluation Method of a Bid Document for Service Provision Other than Consulting, Supply Procurement, Construction, and a Mixed Package

Shall follow Article 39 of the Bidding Law.

5. The government specifies details of this Article

(this will be discussed in the next phase as well)

Article 43. Evaluation Method of a Bid Document for a Consulting Service Supply Package

Shall follow Article 40 of the Bidding Law.

Article 44. Evaluation Method of a Proposal

Shall follow Article 41 of the Bidding Law.

Article 45. Review/Approval of Successful Bidder for a Consulting Service Supply

1. A contractor, which is an organization or entity for implementing a consulting package, shall be examined or proposed to win a contract when the following conditions are met:

a) A valid bid document and proposal exists;

b) A technological proposal that meets the requirements exists;

c) For the lowest price method, a bid price is the lowest after correcting mistakes, adjusting defects, and subtracting depreciation (if applicable). For the fixed price method and the technology based method, the technology point is the highest. For the combined method of technology and price, the total point is the highest; and

d) A proposed contract price is lower than an approved package price. When the budget price of an approved package is lower or higher than an approved package price, the budget price shall substitute a package price as a basis for examining and approving successful bid.

2. A contractor, which is an individual and is for implementing a consulting package, shall be examined or proposed to win a contract, when the conditions below are met:

a) The best scientific history and technological proposal (if applicable) exist, and the requirements of appropriate clauses are met;

b) A proposed contract price is lower than an approved package price. When a budget price of an approved package is lower or higher than an approved package price, the budget price shall substitute a package price as a basis for examining and approving the successful bid.

3. Reasons for losing bid shall be clearly described in a notification of contractor selection result for unselected contractors.

Article 46. Examination/Approval of Successful Bidder for Service Provision Other than Consulting, Supply Procurement, Construction, and a Mixed Package

1. A contractor for implementing service provision other than consulting, supply procurement, construction, and mixed package, shall be examined or proposed to win a contract, when the conditions below are met:

- a) A valid bid document and proposal exists;
- b) The contractor has the ability and experience to meet the requirements;
- c) A technological proposal that meets the requirements exists; and
- d) Defects do not exceed 10% of bid price.

đ) For the lowest price method, a bid price is the lowest after correcting mistakes, adjusting defects, and subtracting depreciation (if applicable). For the estimated value method, the estimated value is the lowest. For the combined method of technology and price, the total points are the highest; and

e) A proposed contract price is lower than the price of the approved package. When a budget price of an approved package is lower or higher than an approved package price, the budget price shall substitute a package price as a basis for examining and approving the successful bid.

2. Reasons for losing bid shall be clearly described in a notification of contractor selection result for unselected contractors.

Chapter 7: Contract

Article 47. Contract Type

1. Lump-sum contract

a) A lump-sum contract refers to a contract that has fixed prices for all work within the contract throughout the execution term. Payment for a lump-sum contract shall be multiple times during the execution process, or one time at the completion of the contract. The total amount to be paid for the contractor by the completion of the contractual obligations shall match the amount that is defined in the contract.

b) When employing a lump-sum contract, a bid package price that will be the basis of reviewing/approval of the successful bid must include a risk prevention cost to prevent possible risks during the contract execution process, and a currency devaluation prevention

cost. A bid price shall include a risk prevention cost to prevent possible risks during the contract execution process, and a currency devaluation prevention cost.

c) A lump-sum contract is a basic contract. When deciding an employment of contract types defined in Items 2 and 3 of this Article, an authorizer of a plan for selecting contractors shall be required to ensure that such contract is more appropriate than a lump-sum contract. For a bid package of a simple consulting service and service provision other than consulting, and a bidding package of small-scale supply-procurement, construction, and mixed, a lump-sum contract shall be employed.

d) For a construction package, a contract execution department and a successful bidder shall recheck a list of work volume based on an approved design, during the process of contract negotiations and completion. If the successful bidder or the department responsible for the contract finds inconsistencies between the list of work volume and the design, discussion/determination for adjusting the work volume shall be requested in order to ensure consistency with the design.

đ) When employing a lump-sum contract, a responsible department and directly-related departments shall have responsibility regarding accuracy of the work volume.

2. Fixed unit price contract

A fixed unit price contract refers to a contract that has fixed unit prices for all work within the contract throughout the execution term. Based on the fixed unit prices specified in a contract, a contractor shall be paid an amount of money which is equivalent to the actually accepted work volume.

3. Adjustable unit price contract

An adjustable unit price contract refers to a contract that has adjustable unit prices for all work within the contract in accordance with the agreement of the contract. Based on the unit prices specified in a contract, or the adjusted unit prices, a contractor shall be paid an amount of money which is equivalent to actual accepted work volume.

4. Hourly contract

An hourly contract is a contract that is employed for a consulting service provision contract. A contract price shall be calculated based on working time per month, week, day, or hour, and costs other than wages. The amount paid for a contractor shall be determined based on the actual working time and a wage ranking for each job/task specified in the contract.

Article 48. Contract Detail

The contract that is attached to the IFB shall include, but is not limited, to the following:

1. Basis of contract conclusion
2. Representatives of the parties to the contract
3. Work contents in the contract (named in a similar manner to package names)
4. *Progress and timelines of contract execution (such as starting/completion times)*
5. *Contract price*
6. Responsibilities of the parties to the contract
7. Claims and debts of the parties to the contract
8. Violation of the contract and sanctions
9. Subject matter, and inspection/delivery of subject matter
10. Prepayment, clearing, and payment
11. Dispute resolution
12. Execution clause
13. Attachments to the contract (if applicable)

Article 49. Contract Documents

1. Contract documents shall include the following:

- a) Contract
- b) Attachments to the contract (include scope of work, price table, and progress status (if applicable))
- c) Contractor selection result approval document

2. In addition to the documents specified in the previous Item 1, the contract documents may contain any of the following documents depending on the size and nature of a package:

- a) Contract completion document;
- b) Agreement regarding the contract conditions between the parties including general conditions and individual conditions;
- c) Bid document and proposal by a selected contractor, and documents that clarify the bid document and proposal;
- d) IFB and request, and documents that correct/supplement the IFB and request; and
- đ) Related documents.

3. If any changes to the contents within the scope of the contract are made, the parties shall conclude a supplemental attachment of the contract.

Article 50. Conditions for Contract Conclusion

1. A bid document and bid proposal of a selected contractor shall be valid at the time of contract conclusion.

2. Technological and financial abilities of the selected contractor for executing a project shall be ensured at the time of contract conclusion. When necessary, the responsible department shall review information on the contractor's abilities, and shall conclude the contract only when the abilities are sufficient for meeting the project execution requirements.

3. In order to secure the development and progress of the project, the responsible department (other department within the company) shall be required to maintain the government funding, implementation site, and other required conditions.

Article 51. Contract with a Selected Contractor

1. After selecting a contractor, the responsible department shall require for such contractor to conclude a package implementation contract. For JV contractors, all participating members of the JV shall directly sign and seal (if applicable) the contract. A contract concluded between the parties shall comply with the provisions of these rules and related laws.

2. A package may be implemented through one contract, or multiple contracts. For one contract, one or multiple types of contracts, which are defined in Article 62 of the Bidding Law, shall be employed. When using multiple contract types, contract documents shall be clearly specified depending on each of the detailed work contents.

3. A contract concluded between the parties shall keep with the contents of the IFB, request, bid document, bid proposal, contract negotiation result, and contractor selection result approval document.

4. The contract price shall not exceed the successful bid price. When the contract price exceeds the successful bid price by adding extra tasks that were not on the IFB or request, the contract price shall not exceed the approved package price or budget price. When procurement projects and budgets cover multiple packages, the total contract price shall not exceed an approved total investment and procurement budget.

5. The government shall define the contents of contracts regarding bidding.

Article 52. Contract Guarantee

1. A contract guarantee shall be applied to a selected contractor, with the exception of a contractor for a consulting service provision and a contractor for self-implementation.

2. A selected contractor shall take contract guarantee measures by the time when the contract becomes effective.

3. Depending on the size and nature of the package, a contract guarantee deposit shall be specified in the IFB or request, and shall be 2-10% of the successful bid price.

4. An effective term of a contract guarantee shall begin on the issue date of the contract, and shall end on the day when each party completes the contractual obligations, or enters a defect liability period (if provisions regarding defect liability exist). If an extension of contract execution period is necessary, a contractor shall be requested to extend in conformity with the effective term of the contract guarantee.

5. A contract partner shall not be refunded the contract guarantee deposit in the cases below:

a) When the partner rejects contract execution even when the contract is effective;

b) When an agreement in the contract is violated; and

c) When the contract execution process is delayed due to the partner's culpability, but the partner rejects extension of the effective term of the contract guarantee.

Article 53. Principle of Contract Adjustment

1. Contract adjustment shall be specifically defined in a contract or an agreement regarding the contract conditions (if applicable).

2. Contract adjustment shall only be applied during the effective term of the contract.

3. Adjustment of contract price shall only be applied for a fixed unit price contract, an adjustable unit price contract, and an hourly contract.

4. A contract price after adjustment shall not exceed a package price or budget price. In case procurement projects and budgets cover multiple package, a total contract price after adjustment shall be ensured such that it does not exceed an approved total investment and procurement budget.

5. For an adjustable unit price contract, unit price adjustment shall begin when an element that changes the price is generated, and shall only be applied to the work that is executed in accordance with the schedule, which is defined in a contract, or which is adjusted in conformity with Items 6 and 7 in this Article.

6. Contract execution progress shall be adjusted only for the cases below:

a) An event of Force Majeure, which does not involve a violation or malpractice of a party to the contract;

b) When contract execution progress is affected by changes in the scope of work, design, or constriction measures due to an objective requirement; and

c) When site handover does not occur in accordance with an agreement of the contract, and affected contract execution progress, but its cause was not the contractor's culpability.

7. When adjustment of the contract execution progress does not extend a project completion schedule, the parties to the contract shall agree on the adjustment through mutual consultation. When adjustment of a contract execution progress extends the project completion progress, the parties shall agree through mutual consultation.

Procurement Rules of Services and Goods Excluded from Bidding

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1. Purpose and requirements

- Supply goods and services reliably, secure supply sources whose price setting is preferable, and make it possible to lower costs on bulk buying, receive preferential treatment from the supply sources, and reduce inventory and warehouse areas.
- Make each division and related units clearly share responsibilities on procurement of goods and services and specify relationships for cooperation in work.
- Observe applicable laws of the country. Suppress occurrence of errors that might occur on procurement of goods and services and thereby prevent conflicts.
- Make it possible to establish an audit environment and an audit system within the company.
- Promote specialization and modernization of procurement work.

2. Application items and scope

- **Scope:** Apply in the company.

2.1. Application items

Goods and services to be procured without bidding that support business operation (per the contents of the attached appendix).

3. Definition of terms and abbreviations

3.1. Definition

- 3.1.1 **Goods:** fixed assets, tools and instruments, materials, parts and stationery that are required for business, management, and commercial operation (including fixed assets required due to demand from investment projects excluded from bidding)
- 3.1.2 **Services:** intangible articles of trade required for business, management, and commercial operation of the Head Quarters (e.g., consultant services, advertisement services, training services, maintenance/repair/refit/replacement services, etc.)
- 3.1.3 **Procurement of goods and services listed in plans:** goods and services required based on plans, including the business operation plan and the financial plan of the company, which are drawn up and approved periodically (quarterly or yearly).
- 3.1.4 **Extra goods and services:** goods and services whose needs arise in an unplanned manner. They are used for business and operation, and purchase of them can be approved as they are indispensable.
- 3.1.5 **Goods and services subject to company's authorization to decide:** goods and services that are used in each office of the company or supplied for the centers under direct control and the operating companies, and that correspond to corporate strategies.
- 3.1.6 **List of suppliers:** information on names, addresses, and other items related to suppliers of goods and services to be provided for each division and the operating company that belongs to the company. It is a list periodically approved by the governor or an authorized person.
- 3.1.7 **Procurement department:** a division in charge with procurement business of goods and services in line with decentralized decision-making by the governor. As for matters outside the competence of the procurement department, the procurement proposal division should be in charge of procurement business.

3.2. Abbreviations

- President of the company: the governor
- Division: divisions under direct control of the company, the centers, and each office of the operating companies
- Planning/project department: the planning and project division
- P. TCKT: the business and PR division
- Procurement department: The procurement division

4. Related material

- Decision No. 6266/QĐ-UBND dated on November 27, 2014 of HPC concerning the establishment of Hanoi Railway One Member Limited Liability Company
- Decision No. 2694/QĐ-UBND dated on June 15, 2015 of HPC concerning the formulation of articles of incorporation of Hanoi Railway One Member Limited Liability Company in terms of its organization and activities
- Guidebook material on policies and audit procedures of procurement

5. Responsibilities

5.1. The governor, the presidents of the operating companies, and the heads of the centers directly subject to the company:

- Instruct the procurement department on goods and services procurement business and have it share responsibilities.
- Approve the list of suppliers of goods and services.
- Conclude goods and services procurement contracts directly or through commission to others who are then required to submit written contracts concluded with suppliers.

5.2. Divisions in procurment demand:

Follow up and supervise procurement requests from the outset to the acceptance so that goods and services will be promptly provided for business of each division. At the same time, take responsibility for communication with the procurement department so as to address problems in case that they occur after the procurement.

5.3. Procurement department:

- Examine and approve procurement proposals that fall within the procurement budget frame the president of the company has decided.
- Submit goods procurement proposals that exceed the procurement budget frame assigned to the procurement department to the president of the company or an authorized person for approval.
- Give guidance to related divisions and cooperate with them so as to choose suppliers. Take the responsibility for negotiating for contracts, submitting written contracts, and concluding them, cooperating with divisions that issued procurement proposals and communicating with suppliers so as to realize procurement without delay, ensure appropriate quality and prices, and solve problems that might occur after the procurement.

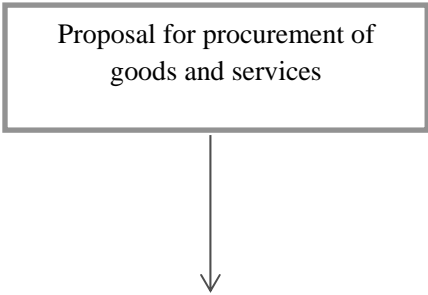
5.4. Planning and project department

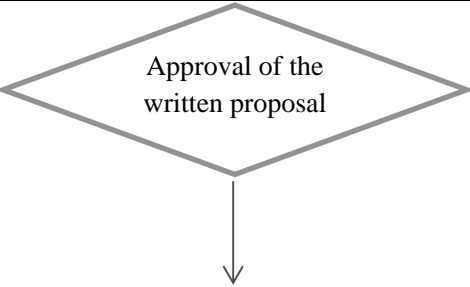
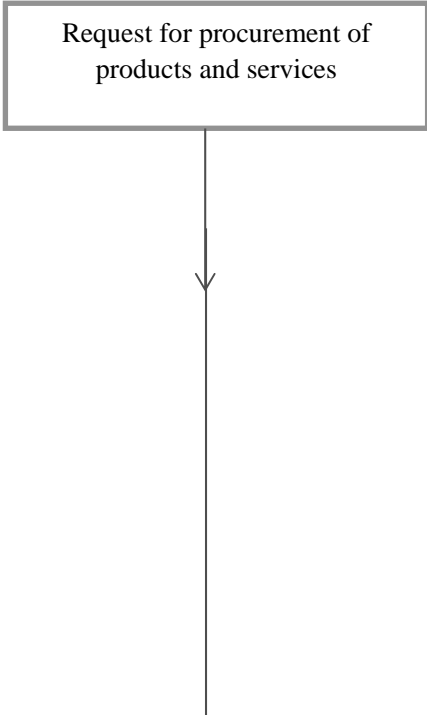
Examine and select suppliers from those recommended by the procurement department, and then submit the result of the selection for approval to the president of the company or an authorized person. Give advice to the president of the company or the authorized person on contract negotiations, and keep evidenced procurement documents pursuant to rules.

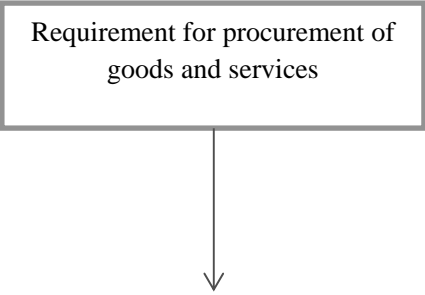
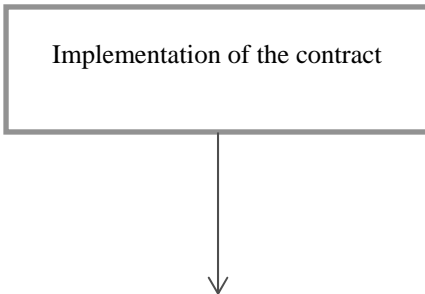
5.5. Finance and account department:

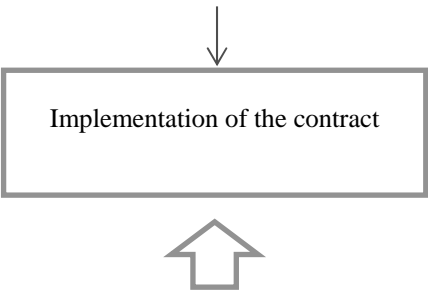
Give advice on cash planning and liquidation/settlement planning and manage cash flows of the company.

6. Procedures

Step	Executor	Flowchart	Description	Timing	Format
1	Each division in demand	 <pre> graph TD A[Proposal for procurement of goods and services] --> B[] </pre>	A division having demand prepares a written request for procurement and sends it to the procurement department. A request for procurement can be made based on an approved plan, or it may happen urgently. In an urgent case, the reason for urgency must be described in the written request.	<ul style="list-style-type: none"> - A “written proposal due to demand arising” should be prepared for purchasing goods and services off the shelf in the market. - For goods and services that require reservation, care should be taken so that procurement will be completed before planned start of use of them, taking into account the time needed for back order. 	BM01

Step	Executor	Flowchart	Description	Timing	Format
2	<ul style="list-style-type: none"> - Procurement department - Planning/project department - Finance and account department - President of the company 		<ul style="list-style-type: none"> - Goods and services that fall under the procurement budget frame allocated to the procurement department: The procurement department examines demand for procurement and the written request to sign it. - Goods and services that exceed the procurement budget frame allocated to the procurement department: The procurement department examines demand for procurement to sign the written request and then submits it to the president of the company or an authorized person for approval. 	Within one week from the day when receiving a written request.	
3	<ul style="list-style-type: none"> - Procurement department - Submitting division - Planning/project department - Finance and account department - President of the company 		<p>When the written request for procurement is approved and returned, the procurement department chooses suppliers form the supplier list.</p> <ul style="list-style-type: none"> - For goods and services that are purchased twice or more, the procurement department chooses the three most preferable suppliers from the supplier list, and then send requests for quotation to them. The requests should basically include quantity, types, specifications, delivery time, delivery conditions, payment methods, defect liability conditions, etc. - For goods and services to be purchased for the first time, the procurement department should search for new suppliers in cooperation with a proposing division. And then, it should select the three best suppliers and send requests for quotation to them. <p>After a new supplier is chosen, it should be added to the supplier list, and the list should be submitted to the president of the company or an authorized person for approval.</p> <ul style="list-style-type: none"> - Based on quotations received, the procurement department should make an assessment and chose a supplier based on a written assessment. And then, it should obtain a written examination opinion from the planning/project department, and submit the result of the selection to the president of the company or an authorized person for approval. 		

Step	Executor	Flowchart	Description	Timing	Format
4	<ul style="list-style-type: none"> - Procurement department - Planning/project department - Finance and account department - Submitting division - President of the company 		<p>Based on an application on supplier selection and the procurement request from each division that are authorized by the president of the company or an authorized person:</p> <ul style="list-style-type: none"> - The procurement department should propose an economic contract with the planning/project department, P. TCKT, and partners. Each division should submit it to the president of the company or an authorized person and obtain his or her sign on it. <p><i>As for goods and services directly and frequently used, it is required to practice central management in pursuant of company's policies. The procurement department should formulate a basic contract. Based on a concluded basic contract, the procurement department should communicate with a supplier to make it sign the appendix of a purchase contract each time or should prepare a procurement request so that (in the case of no conclusion of an agreement specified in the appendix of a contract) the merit of bulk purchase can be leveraged with quick delivery and assured quality based on the principle of matching economic prices with market prices at the time of purchase.</i></p>	Within a week from approval of a written result of the supplier selection	BM02
5	<ul style="list-style-type: none"> - Procurement department - Division in demand - Related professional engineers 		<ul style="list-style-type: none"> - After conclusion of the procurement contract, the procurement department should prepare written guides on contract implementation and LC implementation and notify the relevant divisions of the guides so as to make an arrangement to establish LC in cooperation with the finance and account department (as payment for imported goods must be made with LC) and deploy it. Simultaneously, the department should draw up a record to follow up the supplier. The procurement department, the supplier, and a division having demand should implement delivery and acceptance validation of goods and services. - When handling goods and services involving complex technology such as information technology, substances of parts, materials and construction work, professional engineers must be invited to check quality actually through their observation. 	Subject to contract conditions	BM03

Step	Executor	Flowchart	Description	Timing	Format
6	<ul style="list-style-type: none"> - Procurement department - Planning/project department - Finance and account department - President of the company 		<p>After completion of delivery of the articles of trade subject to the contract, the procurement department should have the trade partner issue a bill of receipt (within one month in the case of domestic purchase), and at the same time it should sum up all the related papers and prepare a contract settlement report and a statement of liquidation of the contract. And, the department should send the contract document and LC, related papers, a prepaid amount, etc. to the finance and account department for a check and approval of the settlement. Subsequently, the department should submit them to the president of the company or an authorized person for approval of the settlement and the liquidation of the contract.</p>	Within one week after delivery and acceptance validation of goods and services as well as receipt of all the papers related to liquidation.	

7. Storage of documents

Order	Document title	Period of time	Division	Remarks
1	<p>The entire original papers related to procurement procedures:</p> <ul style="list-style-type: none"> - Procurement request of goods and services (a procurement plan) - Written assessment of suppliers - Written application for supplier selection - Written economic contract or purchase order - Letter of credit (LC) - Report on acceptance validation - Statement of liquidation - Receipt or import document - Written application for settlement - Transfer document or cash payment bill 	Papers should be kept pursuant to Article 40 of the Public Accounting Act	Planning/project department Finance and account department	
2	A defect liability certificate (original) is used when a user is making contact with the procurement department in order to solve a problem or an accident after purchase.	Till expiry of the defect liability certificate	Division using articles of trade	
3	<p>Copies of papers concerning procurement:</p> <ul style="list-style-type: none"> - Written proposal for procurement of goods and services - Procurement plan - Request for quotation - Quotation - Written assessment of suppliers - Written application for supplier selection - Written economic contract 	For one year from the date of contract liquidation	Procurement department	

Order	Document title	Period of time	Division	Remarks
	<ul style="list-style-type: none"> - Report on acceptance validation - Report of liquidation - Defect liability certificate <p>The procurement department takes the mail responsibility for communication with suppliers in order to solve problems or accidents that might occur after purchase.</p>			

8. Appendixes

8.1 Basic rules of drawing up the supplier list

8.1.1 Purpose:

- Specify comprehensive principles of a task to set up the supplier list for procurement of goods and services to be used in each division of the company.
- Make it possible to fix existing data of suppliers, smoothly implement procurement tasks of goods and services, immediately respond to business activities of each division of the company, and prevent wrongful acts in procurement.
- Achieve maximum reduction of time needed for procurement procedures from the outset of purchase request to the receipt of goods or services.
- Provide correct information for procurement tasks and thus minimize an amount of stock of goods and services.
- Make it possible to select suppliers who provide high quality of goods and after-sales services and apply appropriate preferential treatment on prices to their customers.

8.1.2 Principle for drawing up the supplier list:

- Each division having purchase demand must prepare a proposal on suppliers for its own and send it to the procurement department.
- A list of suppliers with potential must have at least three suppliers for each type of goods and services.
- Information required about suppliers:
 - + Amounts and quality of articles to be supplied and their credibility in the market
 - + Ability to respond to specified delivery time
 - + After-sales services
 - + Terms of settlement
 - + Financial capacity
 - + Customer information (if possible)
 - + Information about quality control systems of suppliers
- The supplier list must be approved periodically or biannually by persons responsible.
- Prior to the assessment time, every purchaser should make a report on trade with its suppliers. The report should be submitted to the governor or an authorized person to make the trade examined and approved based on it. The procurement department should write changes in suppliers and proposals for cancellation in the report.

8.1.3 Implementation:

- The procurement department should send to divisions having purchase demand notifications to request preparation of a proposed list of suppliers with potential as candidates.
- The procurement department should sum up the proposed lists of suppliers with potential in order to draw up the list of suppliers in division according to types of goods and services.
- The procurement department should invite representatives of divisions having purchase demand to hold a meeting to assess and compare ability and credibility of candidate suppliers. Based on the result of the meeting, the list of suppliers for each type of goods and services should be decided.
- The list of suppliers all the divisions have agreed on should be submitted to the presidential meeting or the president for examination and approval.

- The official list of suppliers for the current business period should be announced and published as a handbook of procurement of goods and services for distribution to divisions having purchase demand.
- The procurement department should carry out procurement tasks with reference to the approved list of suppliers. (In the special case of doing business with a supplier that is not included in the supplier list, the procurement department must obtain authorization from the governor or an authorized person.)

Hanoi Railway One Member Limited Liability Company

Socialist Republic of Viet Nam
Independence-Freedom-Happiness**(Procurement department)**

No. /TTr-ĐSHN

Hanoi, mm/dd/20yy

Application Form**Approved by**

Memorandum

As legal bases, pursuant to laws, circular, official notes, and decisions of ,
(the division) submits this application to the governor (or the authorized person). Here we request to examine and approve the attached proposed procurement.

Order	Type and specifications of goods	Country of production	Unit	Qty.	Predicted value	Planned delivery time
1						
2						
3						

We kindly ask for your cooperation so that examination is made (by a person with a higher job title) for facilitation of our business.

**Approval by a person with a
higher job title****Procurement department**
(signature and name)**Person in charge**
(signature and name)

Hanoi Railway One Member Limited Liability Company

Socialist Republic of Viet Nam
Independence-Freedom-Happiness**(Procurement department)**

No. /TTr-ĐSHN

Hanoi, mm/dd/20yy

Application Form**Approval of Selection of Suppliers of Goods and Services...**

Memorandum

Based on the decision No. ...concerning procurement procedures of goods and services excluded from bidding and with reference to actual demand for ... and supply capacity of goods and services of the supplier ..., (the Division) submits this application to the president of the company (or the authorized person). Here we request to examine and approve the attached list of suppliers of goods and services.

Order	Type of goods or services	Name of supplier: ... Address: ... TEL:	Name of supplier: ... Address: ... TEL:	Name of supplier: ... Address: ... TEL:	Remarks
		Overall assessment criteria	Overall assessment criteria	Overall assessment criteria	
1					
2					
3					

Proposal for selection:

1. Name of supplier:.....
2. Address:.....
3. TEL:

Reasons for the selection:

**Opinion of a person with higher
job title****Division in charge of evaluation****Procurement department**

Hanoi Railway One Member Limited Liability Company

Socialist Republic of Viet Nam
Independence-Freedom-Happiness**(Procurement department)**

No. /TTr-ĐSHN

Hanoi, mm/dd/20yy

Report of Acceptance Validation and Delivery

No. /BBNT,BG-ĐSHN

(Re)

Today, on mm/dd/20....,

we, as specified below,

I –Name

1. The delivering party:
(Name) ; (Job title)
(Name) ; (Job title)
2. The receiving party:
(Name) ; (Job title)
(Name) ; (Job title)

II –Details

both the parties together perform acceptance validation and delivery. The specifics are as follows:

Order	Type and specifications of goods or services	Country of production	Unit	Qty.	Condition	Remarks
1						
2						
3						

1. Other precaution items (if any):
2. The receiving party shall be responsible for storing and using goods or services pursuant to the purpose and requests of business.

III – Conclusion

- Both the parties agree on the above stated details.
- This report has ... pages, and is drawn up in ... copies. Each of the parties keeps a copy of them, which has the same legal value for each other.

Delivering party
(signature and name)**Receiving party**
(signature and name)

Material Management Rules

Contents

I. General Rules

1. Purpose
2. Scope and subject of application
3. Definitions, terms and abbreviations
4. Legal basis and related documents
5. Responsibilities

II. Details of regulations

1. Recording of materials and classification
2. Receipt/delivery and storage
3. Supply
4. Material disposition

III. Regulations on documents storage

IV. Appendix

I - General Rules

Article 1: Purpose

This document provides basic rules for the acquisition, receipt/delivery, storage, supply, and disposal of materials (hereafter called “material management”).

Article 2: Scope and subject of application

1. Scope of application: Applicable to operations related to accounting and material controls
2. Subject of application: General Managers of each department and staff in responsible for management and use of materials

Article 3: Definitions, terms and abbreviations

1. Definition

- Material means a movable asset, other than fixed assets, excluding money and goods.
- Acquisition means the Company’s possession of materials by purchase or donation from outside the Company.
- Receipt/Delivery means receiving or delivering materials.
- Supply means supplying materials for use according to their purposes.
- Data means an electronically prepared record.

- Disposition means selling or disposing of unnecessary materials.
- Loss means losing materials.
- Damage means damage to materials other than the damage and abrasion loss developed in materials over its service life.
- Material Management Staff means the General Managers of Finance and Accounting Department, Materials Department (OU), each division (HQ), and each department (OU).
- Material Receipt/Delivery Person means the General Manager of Materials Department (OU).
- Material Supply Staff means the general managers of each division (HQ) and the general managers of each department (OU).
- Unnecessary Material Return means that staff using materials returns unnecessary materials to material supply staff.
- Material Return means that material supply staff returns materials to Materials Department.
- Supply Change means the allocation change of materials in use between material supply staff members.
- Stock means materials acquired by the Company for business use, stored in a designated area under conditions available for supply, and entered into the stock account.
- Settled Goods mean materials used immediately after acquisition, or those delivered from stock and supplied to departments for use.
- Settled Goods for Immediate Use mean materials acquired by the Company for business and used immediately after acquisition.
- Emergency Equipment means materials used for emergency treatment, restoration, or protection in an emergency or a potential emergency, such as a fire and a disaster.
- Spare Parts mean standing materials repeatedly used for inspection or repair.
- Derivative Goods mean low-value materials produced due to repair construction or other reasons.
- Removed Goods mean materials removed from a fixed asset, when all or part of the components of a fixed asset is removed for disposal.
- Supplied Materials mean goods supplied to construction contractors.

2. Abbreviations

abbreviations	Meaning
TCKT	Financial accounting

UBND TP Ha Noi	Hanoi People's Committee
HQ	Head quarters
OU	Operation Unit
TSCD	Fixed assets

Article 4: Legal basis and related documents

1. Legal basis
 - Accounting law and related decrees and circulars
2. Related documents
 - Accounting standards in Viet Nam
 - Regulation on material control of Tokyo Metro.

Article 5: Responsibilities

1. Management Responsibilities
 - a. General Manager of Finance and Accounting Department

The General Manager is responsible for the overall management work for materials, and for periodically or temporarily reporting the present status to the President of the Company.
 - b. General managers of each division (HQ)

The general managers are responsible for clarifying the present status of spare parts and settled goods stored in the OU under their charge, periodically or temporarily preparing a report, and submitting it to Finance and Accounting Department.
 - c. General Manager of Materials Department (OU)

The General Manager is responsible for managing materials stored in Materials Center.
 - d. Materials Department staff members (OU)

Under the instruction of the General Manager of Materials Department, the staff members of the Department are responsible for maintaining the reasonable preparation of materials for business and office work in each division, ensuring proper use according to the applications of the materials, investigating extra or unnecessary materials, and dealing with necessary issues for implementing office work.
 - e. General managers of each division (OU)

The general managers are responsible for managing materials under their charge, supervising the persons using materials, and periodically or temporarily preparing a report, and submitting it to the general managers of each division in HQ.
 - f. Persons using materials

The persons are responsible for storing and using materials for appropriate applications in a proper way.

2. Liability for Compensation of Material Management Staff and Staff Using Materials

- When having caused or loss or damage intentionally or by gross negligence to materials under one's charge, the person shall compensate for the loss or damage.
- The General Manager of Finance and Accounting Department shall decide on responsibility sharing after the responsibility of the person having caused the loss or damage becomes final.
- The amount of compensation is the book value of the asset at the time of the occurrence of the loss or damage.
- When materials are lost or damaged due to unavoidable reasons, the person is exempted from responsibility.

3. Reporting of Losses and Damage

- a. When materials have been lost or damaged, material receipt and delivery staff or supply staff shall investigate the causes of the losses or damage, submitting a material loss and damage report to the General Manager of Finance and Accounting Department.
- b. The General Manager of Materials Department shall take measures of supplementing materials, and the General Manager of Finance and Accounting Department shall take measures on the compensation.

4. Inspection

The General Manager of Finance and Accounting Department may conduct an extraordinary inspection of material management when necessary.

II. Details of regulations

1. Recording of Materials and Classification

Article 6: Material Grouping

Materials acquired for business shall be grouped into the stock account.

Materials immediately used after acquisition or those delivered from stock shall be grouped into the settled goods.

Article 7: Material Classification

The use classifications, numbers of days for procurement, units, codes, and names of materials shall comply with the name code table and the material name table.

Materials shall be classified as follows:

Material classification		Material conditions
Stock	New (for construction, driving, business, and office work)	<ol style="list-style-type: none"> 1. New material purchased for the stock account. 2. New returned material specified by the General Manager of Finance and Accounting Department. 3. Acquired new material other than those mentioned in the above clause and that for immediate use, and specified by the said General Manager.
	Reused (for construction, business, and office work)	<ol style="list-style-type: none"> 1. Used material purchased for the stock account. 2. Usable returned material, and returned material specified by the General Manager of Finance and Accounting Department. 3. Acquired material other than those mentioned in the above clause and that for immediate use, and specified by the said General Manager.
	Unnecessary	<ol style="list-style-type: none"> 1. Material reclassified from the new stock or the used stock. 2. Returned material specified by the General Manager of Finance and Accounting Department.
Settled goods		<ol style="list-style-type: none"> 1. Material delivered from stock. 2. Material purchased for immediate settlement.

Article 8: Management Principles

1. Appropriate material management and grouping shall be ensured for enabling material supply to divisions in need of materials for use.
2. Material receipt/delivery, storage, and supply status shall be regularly renewed, and periodically or temporarily reported to the General Manager of Finance and Accounting Department upon request.
 - The report shall include the following:
 - + Material receipt/delivery status
 - + Material storage status
 - + Material use status
 - + Variation in unit price of stock
 - + Other necessary issues
3. Material receipt and delivery staff members shall make a record every time they receive or deliver materials according to rule.

Article 9: Preparation of Stock and Emergency Equipment

1. The following stock shall be prepared:
 - Materials needed by departments in large quantities, and specified by the General Manager of Finance and Accounting Department in advance.
 - Materials intentionally requested by the general managers of each division based on certain criteria for grouping, standard inventory, and supplied materials.
 - Other materials specified by the General Manager of Finance and Accounting.
2. The General Manager of Finance and Accounting Department shall prepare annual purchase plans for the stock mentioned in the preceding paragraph based on the purchase plans of each division.
3. The general managers of each division shall determine the items and quantities of materials stored as emergency equipment and spare parts in consultation with the General Manager of Finance and Accounting Department.
4. The above-mentioned documents shall be submitted to the General Manager of Finance and Accounting Department for use management.

Article 10: Acquisition of Materials

1. The general managers of each division shall prepare a material purchase plan for each business year, submitting it to Sales and Public Relations Department.
2. As for material purchase, a purchase request prepared based on the format specified by the General Manager of Sales and Public Relations Department is sent to the Department, which then performs purchase work according to rule.
3. Donated materials shall be reported to the General Manager of Finance and Accounting Department for making it possible to take appropriate measures.

2. Receipt/Delivery and Storage

Article 11: Receipt/Delivery of Materials

1. Material receipt/delivery staff or supply staff shall immediately receive inspection-passed materials.
2. When receiving or delivering materials, material receipt/delivery staff or supply staff should fully enter data, such as sealed and legal receipts, receipt and delivery slips, and vouchers.
3. When data modification or cancellation is needed, material receipt and delivery staff or supply staff should prepare a data modification and cancellation request in the proper form, submitting it to Finance and Accounting Department.

Article 12: Receipt/Delivery of Stock

The receipt/delivery of stock shall be properly performed using a receipt and delivery slip.

Article 13: Principle for Storing Stocks

Stock shall be stored taking account of ensuring easy supply and treatment at all times.

Article 14: Storage Methods

- Material receipt/delivery staff and supply staff shall classify stocks into materials for supply, those for modification or processing, and unsuitable materials.
- Materials shall be properly grouped according to types and applications.

Article 15: Change in Storage Location

When changing the storage locations of site-stored materials, supply staff shall prepare a slip for changing stock storage location and a receipt and delivery slip according to rule.

Article 16: Reporting of Inventory and Storage Status

1. Material receipt/delivery staff and supply staff shall make an inventory of specified materials quarterly or semi-annually, submitting the data to Finance and Accounting Department.
2. Material receipt/delivery staff and supply staff shall report on material storage status (monthly or annual receipt as well as delivery quantities balance tables) at the end of each month and year, reporting to Finance and Accounting Department at the end of each quarter and year.
3. The reporting prescribed in the preceding paragraph shall specify the current balance and storage status of each item based on material and application classifications.

Article 17: Reporting and Treatment of Unsuitable Goods

1. When finding materials in need of processing or disposition, material receipt/delivery staff and supply staff shall report such effect to the General Manager of Materials Department.
2. When receiving the report provided in the preceding paragraph and recognizing materials in need of processing or disposition, the General Manager of Materials Department shall take necessary measures.

Article 18: Estimation of Material Values

1. Determination of Acquisition Prices

Material values are estimated from acquisition prices, processing costs, and other directly related derivative costs, assuming that the materials are stored in the present location and under present conditions.

2. The moving average method shall be used for calculating inventory values.

3. Supply

Article 19:

1. Material receipt and delivery staff and supply staff shall verify the appropriateness of supply requests submitted by other departments before supplying materials, making a delivery of the materials if no problem is found.
2. When supplying materials, material receipt and delivery staff and supply staff shall enter necessary data, prepare a delivery slip, and collect slips, submitting the results to Finance and Accounting Department.
3. When making a supply change, material receipt and delivery staff and supply staff shall prepare a supply change report, submitting it to Finance and Accounting Department.

Article 20: Grouping of Settled Goods

Settled goods are organized as follows:

Construction material	<ol style="list-style-type: none"> 1. Materials settled as the repair cost, material cost, or supplies cost. 2. Materials settled as the fuel grease cost.
Equipment	Tools, apparatus, equipment, and delivery equipment with a service life of one year or more settled as the supplies cost, and whose acquisition price per unit or set equals or exceeds the half prices of tools, apparatus, and equipment specified in the chart of accounts.
Clothing	Materials settled as the clothing cost.
Public transportation tickets	Materials settled as the tickets.

Article 21: Repair and Processing

When finding in-use materials in need of repair or processing, material supply staff shall request the General Manager of Materials Department to repair or process the materials using a repair or processing request registration form. The General Manager shall take measures for repair or processing.

Material supply staff may apply the provision in the preceding paragraph to materials, such as tools, apparatus, and equipment, even if they are grouped into the fixed asset.

Article 22: Unnecessary Material Return

1. Staff using materials shall immediately return the materials to material supply staff when the materials become unnecessary.

2. When returning materials to the warehouse, staff using materials shall enter necessary data, and report to the General Manager of Finance and Accounting Department.
3. As for unnecessary materials disposed of on site, a material disposal report shall be prepared and submitted to the General Manager of Finance and Accounting Department.

4. Material Disposition

Article 23: Determination of Material Disposal

When some of unnecessary materials are unsuitable or unusable for other purposes, the General Manager of Finance and Accounting Department may decide to dispose of the unsuitable materials or those unusable for other purposes.

Article 24: Reclassification of Materials

When finding the need for the effective supply of stock, the General Manager of Finance and Accounting Department may change the stock classifications provided in Article 5. In this case, the General Manager shall clarify the following:

- Item, quantity, and value
- Account title
- Reason for reclassification

Article 25: Sale of Materials

When selling materials, Materials Department shall complete a material sale record. The record shall explicitly state the following:

- Item, quantity, and price
- Time, place, and relevant parties
- Other necessary issues

Article 26: Disposal of Materials

When making a disposal, Materials Department shall complete a material disposal record. The record shall explicitly state the following:

- Item, quantity, and value
- Disposal method
- Reason why the material is unsalable

III. Regulation on documents storage

Article 27: The documents are considered accounting documents and should be stored as provided in the Article 40 of the Accounting law and Decision No. 218/2000/QD-BTC which announces storage system of accounting documents

IV – Appendix

Format of material inventory control sheet

Hanoi Railway One Member LLC
 NO.8 Ho Xuan Huong, Hai Ba Trung, Ha Noi

Material inventory record statement

Date: Month: Year: 20XX

The time and date of inventory audit:

.....

Location :

Audit team :

.....

.....

.....

No.	Material code	Material name	Descriptions and specifications	Department	Volume on book	Volume on actual count	Location / Position	remarks
1								
2								
3								

ACTIVITY 6.3.5

**Measures to secure financial stability of
the Company**

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Chapter 1: The purpose and the scope of this research

1. Purpose

Case study has been conducted in order to:

- learn financial models from the past experiences in Asia, and proposed the model able to adopt measures that may suit well to the operation in Vietnam; and
- set up operation plans and financial strategies to ensure continuous company business and sustainable railway operation.

2. Scope

To propose measures to secure financial stability within the current scope of SAPI project and TA project.

Chapter 2: Definition, terms and abbreviations

1. Definition

Financial stability of the company is realized through keeping risks under control, maintaining balance of cash inflows and outflows and financial soundness, and to make the company grow through generation, allocation and utilization processes of cash of the company.

Financial stability consists of the following details:

- Repayment capacity: Repayment capacity means the company's capacity to repay loans and debts (short term loans and long term loans) that comes due.
- Production and management efficiency: Production and management efficiency shall reflect the operation result of production and management against the planned goals. Production and management efficiency shall present the ability of the company in utilizing its own resources through achieving maximum result at minimum cost.
- Financial balance: Financial balance of the company is to balance the cash inflows and cash outflows

Cash inflows of the company stems from sales of goods and services, other non-fare business, selling off its assets, dividend and interest income, and repayment from customers. ¹

¹ Doctoral thesis on corporate financial stability issued by Banking Education Institution.

2. Abbreviations

Reference number	Abbreviations	Meaning
1	SAPI	Special Assistance for Project Implementation (Hanoi Line 2 Construction Operation Assistance Project)
2	TA	Technical Assistance (Technical assistance project)
3	ĐSĐT	Urban railway transportation system
4	TRTC	Taipei Rapid Transit Corporation (Taipei Transpiration Company)
5	VHBD	Operation and maintenance
6	BMCL	Bangkok Metro Company Ltd
7	MRTA	Mass Rapid Transit Authority of Thailand
8	ĐSĐT	Urban railway transportation system
9	E&M	Electrical & Mechanical (Electricity and Machines)
10	EBITDA	Earning before interest, tax, depreciation, and amortization
11	SMRT	Singapore Mass Rapid Transit
12	LOA	Licensing and Operating Agreement (transportation agreement)
13	LTA	Land Transport Authority
14	RTSA	Rapid Transit Systems Act
15	CCL	Circle Line (Singapore)
16	LRTA	Light Rail Transit Authority (Manila Light Rail Transit System Authority)
17	MTOI	Metro Transit Organization Inc.
18	SPNB	Syarikat Prasarana Negara Berhad (State-owned enterprise in Malaysia/Kuala Lumpur concerning infrastructure)
19	SOE	State-Owned Enterprise
20	BOT	Built – Operate – Transfer
21	BOO	Built – Own – Operate
22	UBND TP	Urban People’s Committee
23	KPI	Key Performance Indicator
24	VAS	Vietnam Accounting Standards
25	ROA	Return on assets
26	TSCD	Fixed Assets

Chapter 3: Case studies on Governmental financial assistance schemes for operation and maintenance activities of urban railway transportation system in certain cities

In this chapter, our research focused on the following points:

- Purpose of the operation
- Agreement with the government
- Financial situations

Due to the difference in the operation purpose nature being non-profit or profit, each government changes the assistance program and each company changes operation styles. As such, the financial situation of each company may vary considerably.

1. Taiwan (TRTC)

1.1. Purpose of operation :

TRTC does not highly aim at making profits but rather seeks to provide friendly high quality public transportation services while enhancing the security and reliability of the operation.

Capital structure: TRTC is a company with majority of its shares owned by the municipal government. 73.75% of its shares is owned by the city, 8.75% by the government, 17.4% by Ministry of transportation and the remaining 0.36% shares is owned by banks.

1.2. Agreement with the government :

+ Operation style: In 2011, TRTC has changed its ownership status to corporation as TRTC Stock Share Corporation. Majority of its capital is owned by the government.

+ Governmental financial assistance: Government provides all the asset and extend financial assistance to the company. The company provides transportation and maintenance services.

There are three stages of governmental assistance for the company as follows:

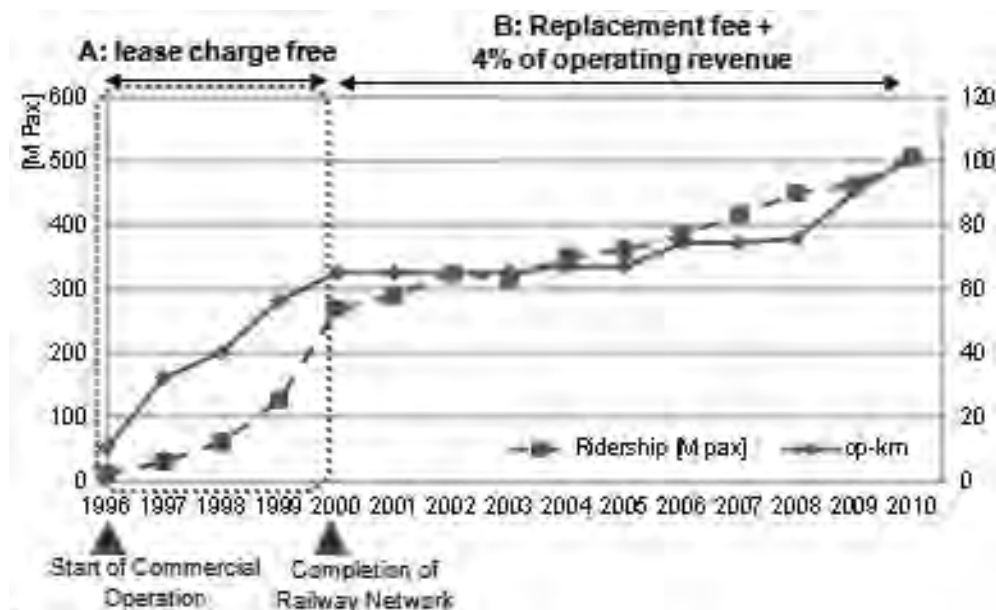
- First 5 years (1996-2000): Free lease on assets
The company could use the asset at free of charge for the first 5 years when the railway transportation system was not complete yet.

- Following 10 years (2000-2010): Leasing of assets
At the time of completion of the railway system, the company operation in 2000, the Government has revised the agreement. The amount of lease fee of the asset was calculated as the cost of asset replacement and 4% of annual revenue. The amount of lease fee was incorporated into major capital fund called “Fixed assets replacement fund for Taipei Metro”, which was set up for replacing equipment and facilities to ensure secure and safe operation.
- From 2011 to present: Leasing of assets
As the number of passenger increase, the government has revised its agreement. The lease fee was changed to the cost of asset replacement plus between 2% and 4% of operating revenue and 50% of operating profit, which is variable once in every two year depending on the operational situation.

As illustrated above, the government’s assistance at early stages was very important

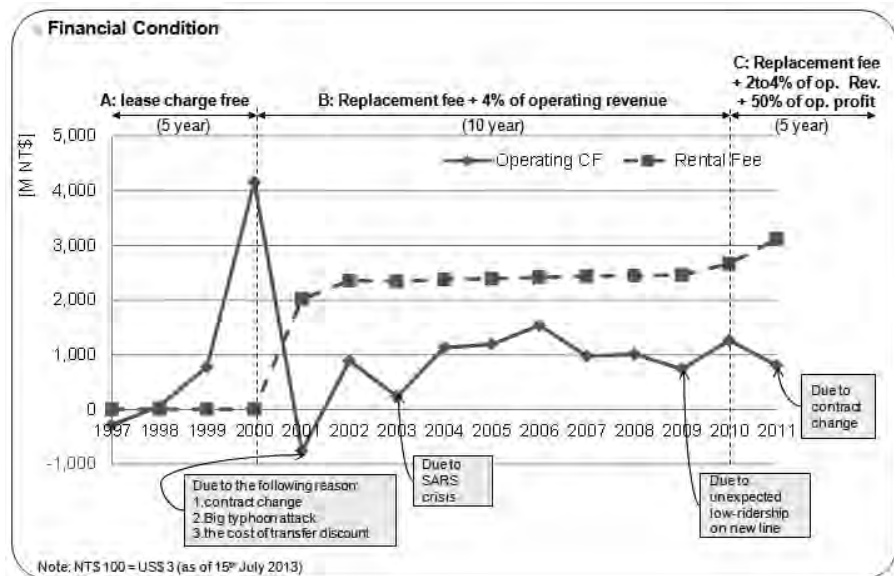
- + Ownership of the asset: Owned by City of Taipei.
- + Party responsible for initial debt liability: City of Taipei
- + Party responsible for capital investment to replace assets: The company

1.3. Financial situation :



- The rapid increase in passengers was recorded in 2000.

At the beginning, the company focused on accumulating operation experience for providing safe and high quality public transportation service. The timing when the company's financial stability became better was the year: planned transport network was completed.



- Risk factors:

⇒ Year 2001: Revision of agreement and asset lease fee ratio, natural disaster (struck by typhoon), and discount on transit have all impacted the cost structure of the company to deteriorate. The discount on transit was offered to public as a service by Taipei City through connecting railway system with other public transportation services such as MRT and bus.

⇒ Year 2003: Low ridership due to Epidemic of SARS

⇒ Year 2009: New line was established but the number of users was less than expected.

Conclusions:

+ Cost: Revision on agreement on asset lease fee ratio where such rate increases as time goes by, natural disasters and epidemics of disease

+ Income: Integrated government policy on public transportation system and less than expected number of passengers

2. Bangkok (BMCL)

2.1. Purpose of operation :

Provide safe and reliable public transportation services in a sustainable manner to control traffic congestion, protect the environment and to improve the quality of life of people.

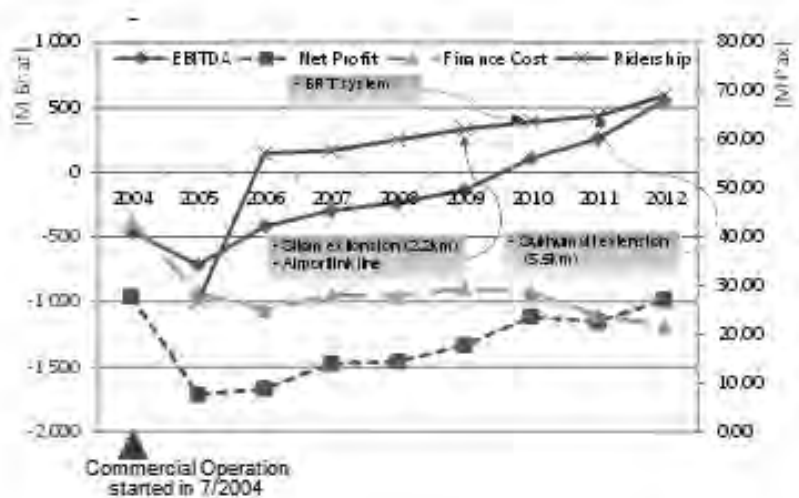
Capital structure: Corporation with shares held by MRTA (25%), Karnchange Public (24.61%), Bangkok Expressway Public (11.68%), Companies in construction sector (16.82%), financial institutions (7.23%) and other resources (14.66%).

2.2. Agreement with the government :

Agreement is valid for 25 years from 2004 till 2029. In the agreement, it is stipulated that MRTA is responsible for constructing facilities related to infrastructures while BMCL is responsible for purchasing assets, providing operation and maintenance services and paying the lease fee for the facilities for infrastructure to MRTA. Simultaneously, at the maturity of the agreement, the company should hand over E&M assets to MRTA.

2.3. Financial situation :

Infrastructure is invested and owned by the government. It was noted that there is no financial assistance towards the company apart from the above.



As the financial assistance from the government was limited, the company had recorded loss during the early stages of the operation. EBITDA has turned positive only in the recent two years.

For the operation, BMCL had to purchase assets by itself. BMCL had to borrow from banks and shareholders with the interest which accounts for almost 60 to 70% of the total revenue, resulting in the increase in the expenses.

+ Asset ownership: Infrastructure is owned by the City of Bangkok. E&M is owned by the company.

+ Responsibility to repay debts for the initial assets: Debt for infrastructure: City of Bangkok; Debt for E&M: The company

+ Investment to renew assets: The company

- Turning point in increase in passengers: In 2010, extension of Silom Line (2.2 km) and opening of airportlink and in 2011 when Sukhumvit Line (5.5 km) was extended after the urban railway system was complete.

- Risk factors:

+ The company had to purchase assets by itself.

+ Most of the machineries were imported. As such, the fluctuations in the currency rate had large impact on the company.

+ There was no financial assistance from the government.

3. Singapore (SMRT)

3.1. Purpose of the operation :

Through providing highly safe and reliable and comfortable transportation services in a convenient and lively manner, the number of passengers will increase.

=> Not like above mentioned companies, SMRT is not a non-profit oriented company but is a company seeking profit.

Capital structure: Incorporated as a corporation where government holds only 55% of shares while 26% is held by investment institutions, and 19% by private sectors.

3.2. Agreement with the government :

Government provides infrastructures and extends financial assistance. The company provides operation and maintenance services.

+ First 11 years from 1987 to 1997: LOA(License and Operating Agreement) : The company did not make any investment but focused on operation and maintenance services.

+ From 1998 to 2028: Ratio of lease fee of the asset was agreed to change as time lapses as follows:

- From April 1998 till March 2003: 0.5% of annual net revenue (fare revenue)

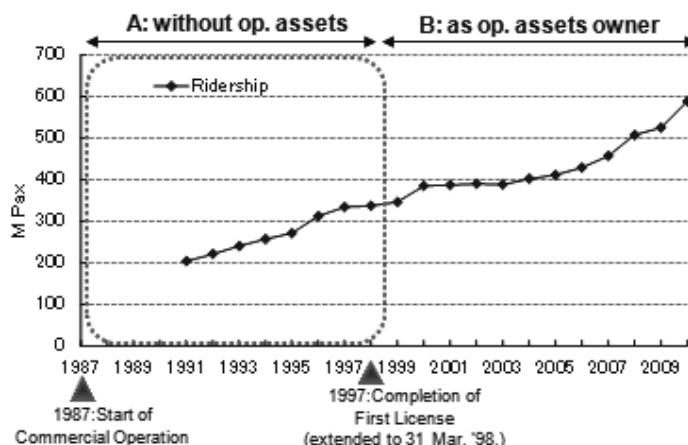
- From April 2003 till March 2011: 1.0% of annual net revenue (fare revenue), which was an increase by 0.5%.

- From April 2011 till March 2012: Determined by LTA
- From April 2012 till present: Determined by RTS Act or as provided in the regulations concerning governmental financial assistance.

In 1997, SMRT has purchased assets related to electric machineries for 1.2 billion yen which was equal to the book value after applicable depreciation in 10 years. The infrastructure was held by LTA and SMRT has borrowed money at the nominal interest rate. Simultaneously, LTA has extended financial assistance for 480 million dollars to SMRT to purchase the E&M assets.

Regulation concerning LOA assets:

- For existing lines:
 - + E&M: SMRT may request LTA for financial assistance to renew assets held for business operation purposes.
 - + Infrastructure: Owned by LTA and rented to SMRT. LTA has set up rules that the nominal interest rate will be revisited at the beginning of each year for the duration of the lease period. SMRT is required to provide maintenance services as agreed through a separated repairing and maintaining agreement.
- New CCL line (2009) :
 - + E&M: SMRT purchased operating assets at the book value in May 2009.
 - + Infrastructure: Provided by the Government.
 - + Preferential arrangement: MRT is required to contribute 30 million Singapore dollars or 75% of its income before tax derived from this line to the asset investment fund. The fund is established for payment for capital expenditures including overhauling of machines, facilities and infrastructures of CCL.



3.3. Financial analysis :

- Asset ownership right:

- + First 10 years: LTA owns all the assets.

- + Since 1997: Infrastructure is held by LTA while E&M is held by the company.

- Liability on debt for the initial asset: Infrastructure and certain E&M is repaid by the Government. The company is liable to repay for certain assets. For the new CCL line, the government does not provide financial assistance.

- Investment of fund to renew assets: The company and the government are both responsible. In the articles of LOA(License and Operating Agreement), it is stated that “SMRT may request LTA for financial assistance in case of replacing the assets for business operation”

- Year in which the number of passenger increase: Around 1997.

The number of passengers of SMRT increased gradually on the whole. The main reasons for this are the rational and appropriate government policies to attract passengers, the geographical factor that the population is not so crowded and has been quite stable, and the company could concentrate on operation activities as the financial assistance from the government was sufficient.

4. Manila (LRTA)

4.1. Purpose of operation :

To provide urban railway transportation system services which connect to other public transportation services, thereby structuring highly safety transportation system in Manila and other central districts in the country and achieving global standard level of services. => Main purpose is set on providing services

Capital structure: 100% state owned Light Rail Transit Authority (LRTA)

4.2. Agreement with the government

Government provided only financial assistance by contributing money for certain assets. LRTA purchased remaining assets and provided operation and maintenance services.

From 1991 till 2000, all the services were provided by MTOI(Metro Transit Organization Inc). In 2000, LRTA decided not to renew the contract and

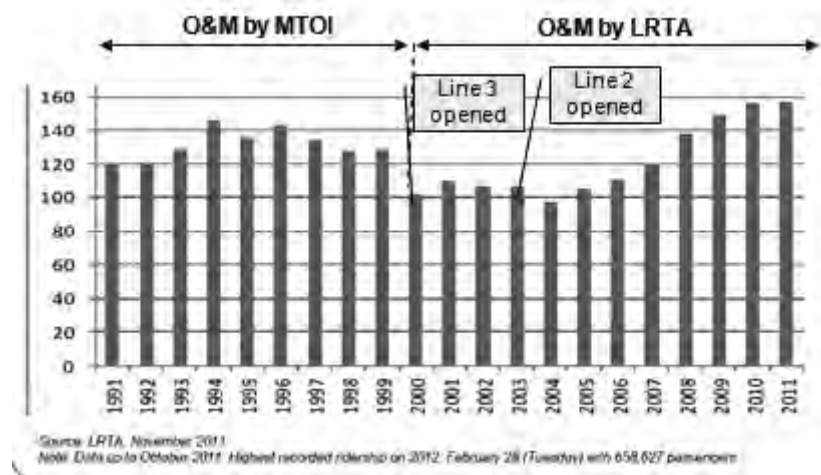
to directly provide the operation and maintenance services of urban railway transportation system in Manila.

LRTA takes directly responsibility for the operation. Maintenance is outsourced to private sector company.

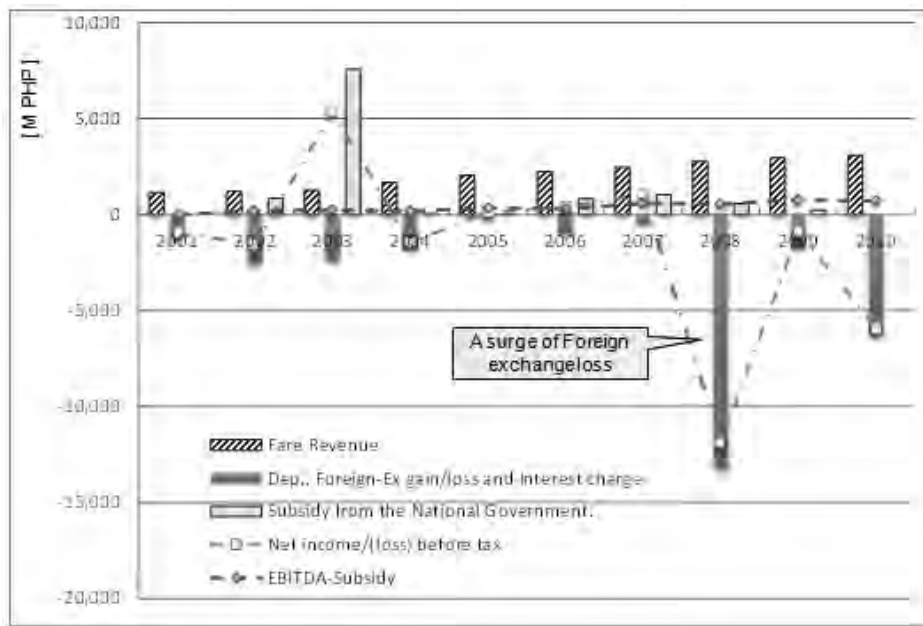
4.3. Financial analysis

- Asset ownership is held by LRTA.
- Liability on debts for the initial assets is held by LRTA.
- Investment on renewal of assets is done by LRTA.

- Year in which the passengers increased rapidly: It was in 2004 when the railway operation has become stabilized gradually after the urban railway system has become complete and operation and maintenance of urban railway system went under the control of LRTA.



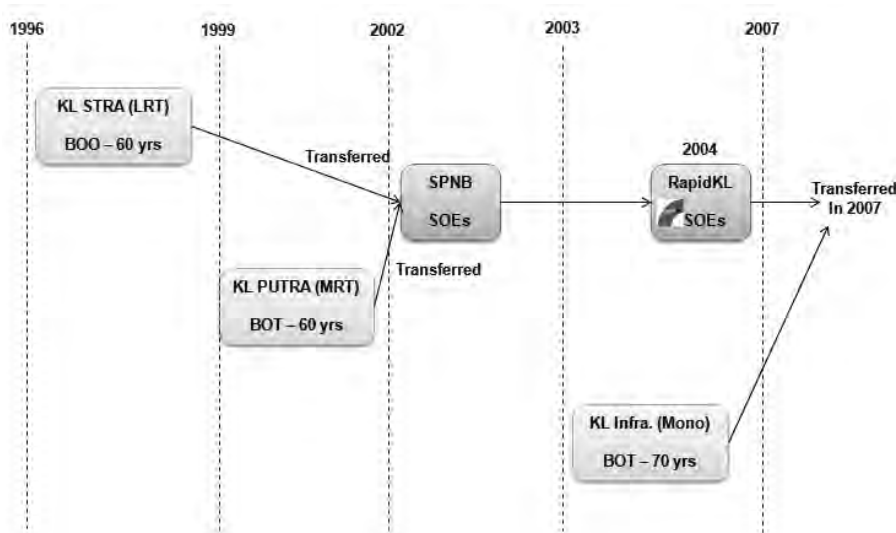
As can be seen in the above chart, there were rapid decrease in passenger number in 2000. There was two reasons: one cause is the MTOI laborer's strike from July 25th till August 2nd which subsequently lead to LRTA's decision of not to renew agreement with MTOI, the other one is the LRT railway bombing terrorist attack on December 30th, 2000.



- Financial assistance increased rapidly in 2003 mainly due to new construction of Line 2.
- LRTA has been recording loss most of the years but the cash flows, as calculated by subtracting subsidy amount from EBITDA, has become positive after 10 years from its opening.
- Difficulties: As major portion of fund of each project is fixed at foreign currency, the company has recorded the lowest profit due to currency devaluation in 2008.

5. Kuala Lumpur

To analyze capital structure and financial situation of the company in Kuala Lumpur is extremely complicated because the company has undergone various changes in the capital structure and there has been numerous mergers and acquisitions.



- In 1997, STAR was established as a first company to operate and manage urban railway system. The company operated as a private sector company under the BOO agreement format for 60 years.

- In 1999, KL PUTRA was established as a private sector company under the BOO agreement format for 60 years.

- Due to the Asian currency crisis happened in 1997, in 2002, KL STAR could not continue operation and KL PUTRA has failed due to financial troubles and sold its operation to SPNB which was SOE.

- In 2003, SPNB has renamed its operation section to Rapid KL.

- In the same period, KL Infra, an another private sector company, was established to take responsibility for the business for mono-rail system under 70 years BOT agreement.

- In 2007, KL Infra was merged with RapidKL due to same reasons as the STAR, the first private sector company, and RapidJL become an integrated institution that operates and manages urban railway systems.

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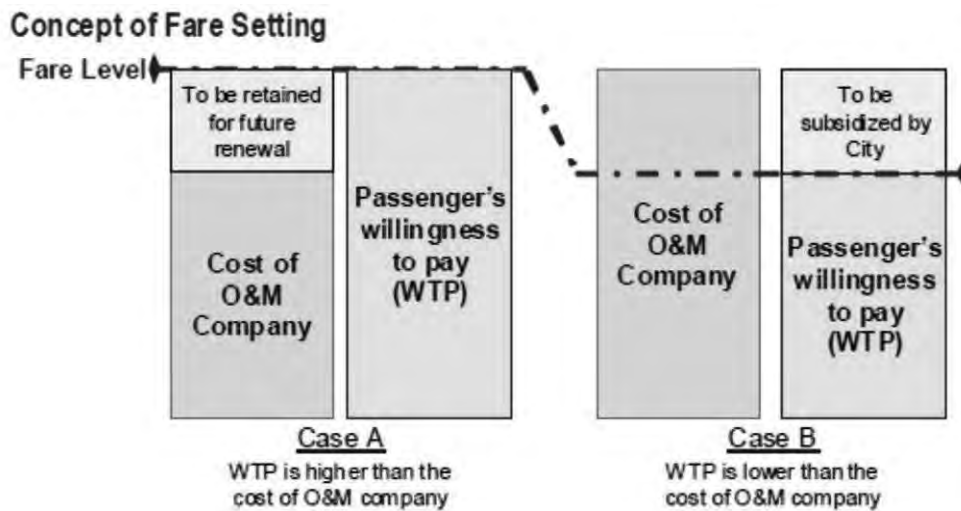
Chapter 4: Proposals on various arrangements

1. Financial assistance

1.1. Financial assistance amount as proposed in SAPI

- Fare level is calculated from the fare level based on the passenger's willingness to pay as railway fare and accumulated amount of O&M cost. In case the amount of the passenger's willingness to pay as railway fare is higher than the amount calculated from cost, the fare should be based on the passenger's willingness to pay. The gap between the two will be retained as a fund for future payment.

- In case the amount of the passenger's willingness to pay is less than the calculated amount based on cost, the fare shall be based on the amount of the passenger's willingness to pay. The city of Hanoi should extend financial assistance to the company for the amount appropriate to supplement its shortage.



1.2. Financial assistance amount as proposed for TA Project

The fare and the amount of financial assistance are determined by Hanoi People's Committee.

1.2.1. Regulations concerning financial assistance:

The financial assistance extended to public service entity is used for production and provision of goods and services that the government orders. This could be regarded as financial subsidy paid by the government extended to goods manufacturers and service providers. As such, the amount should be fixed for each unit of goods and/or services.

The amount of financial assistance extended to public service entity shall be the difference between the sales price as determined by the government and the reasonable cost of manufacturers and service providers in manufacturing and/or providing goods and services as ordered by the government.

The amount of financial assistance extended to public service entity could be regarded as financial subsidy that has been paid out from the national treasury for the goods manufacturers and service providers incurred during the manufacturing goods and providing services as ordered by the government.

The amount of financial assistance extended to manufacturers and providers of public goods and services should represent the difference between the amount the users of such public goods or services pay and the amount of reasonable cost for the manufacturers or providers of goods or services incurred during the supply process.

The reasonable cost incurred by the manufacturer and/or provider of such public goods and services should be the actually incurred cost in the activity

process of goods manufacturing and service provision as provided in the articles of corporate income tax law and relative legal documents.

1.2.2. Proposals

Through the case studies of past experiences, we conclude that the financial assistance from the government will play an important and indispensable role in ensuring sustainable railway operation.

a. Assistance at the early stages

+ Financial assistance on fares : The amount of difference between actual fares and the theoretical fares decided by HPC.

+ Infrastructure : Should be owned by the City of Hanoi in order to reduce depreciation.

+ E&M Assets : Assets shall be transferred to the company as a contribution in kind.

Reason for the proposals :

Company management can determine appropriately whether to replace assets for improvements or renewal based on the product life cycle if such assets are held by the company. However, if the assets are held by the City, in order to decrease the burden of maintenance, a company may request for replacement much earlier than the planned product lifecycle. On the other hand, the city of Hanoi may try to use assets as long as possible to save facility investment cost.

b. Assistance for replacement and new investment at later stage

+ Financial assistance for replacement of facilities and new investment : The company can borrow funds for the acquisition, improvement and replacement of new assets such as rollingstock and E&M equipment from HPC and Central Fund at preferential interest rate.

+ Financial assistance for fares : Difference between actual fare and the theoretical fare decided by HPC.

The amount of financial assistance and any subsidy shall be based on contract scheme at each operation stage. According to the articles of Decree of 130/2013/ND-CP concerning providing manufacturing and providing public goods and services, urban railway transportation services should be classified as item B, public goods and services operated under bidding or ordering. However, as it is a relatively new product/service segment and there is no preceding case,

it would be difficult to apply such classification accordingly. As such, TA project proposes the following contract schemes for each operation stage.

2016 - 2021	Plan Assignment
2022 - 2027	Ordering
2028 and beyond	Bidding

Amount of financial assistance = Total cost – total income

2. Use of index on economic impact (KPIs)

KPIs should be developed in accordance with the fare revision system (Task 2.1). The following applications are based on the cases of Tokyo Metro.

Basis	KPIs	MRB's review points	Reporting requirements specified by MRB
VAS 28 and MRB Regulation	D/EBITDA	Whether O&M Co. is financially sustainable? = Can they repay the bank loan by the cash generated through their operation (EBITDA)?	
	EBITDA	Whether the fare business is profitable? = Did the fare business generate the cash? * Please refer to the segment revenue and expenses in the article 3 of 09/2009/ND-CP and the article 15 of VAS28.	
MRB Regulation	ROA = EBITDA/Assets	Did the company convert their assets into profits efficiently? = Is there any inefficient lines? * Please refer to the segment assets in the article 15 of VAS28.	

2.1. Index used for evaluation of corporate performance: EBITDA (Earnings before Interest, Tax, Depreciation, and Amortization)

= Earnings after tax + Tax + Interest on loans + Depreciation expenses

= Earnings before tax + Interest on loans + Depreciation expenses

= Income – total cost (cost of operation, sales expenses, and administrative expenses) + depreciation expenses (According to the accounting standard of Viet Nam, as the depreciation expense is directly calculated within total cost, it should be added back for compensation)

- Providing an insight to review if the fare business is profitable

- EBITDA index of fare business and non-fare business should be calculated separately. (Article 3 of Decree 09/2009/ND-CP and Article 15 of VAS28)

- Merit of this evaluation system: In this way, evaluation is possible while mitigating the impact of different capital structure and influences of depreciation expenses.

2.2. Return on Assets (ROA)

$$ROA = EBIT / Assets$$

This ratio measures the company's profitability against total capital (total assets).

At present, there is no way to compare ROA with peer companies. The reason for this is the lack of similar companies in operation styles. As such, the comparison will be made after calculating ROA for each 3 line first. Then, based on the calculation, any appropriate improvement measures will be made if found necessary.

2.3. Index to measure the sustainability of the operation = Debt / EBITDA

This index is used to measure the company's ability to repay debts: This index is calculated by dividing the amount of debt by EBITDA.

⇒ This index measures sustainability of the company's financial situation. The index clearly demonstrates the company's ability to repay debt through daily operation.

3. Budget planning and control on income and expenses

3.1. Budget planning

Budget planning is a very important business process for the newly established company because it involves defining necessary resources for running the operation. As for a company which does not have enough budget source, budget ceiling is so important. The importance of certain business activity should be clearly defined through the budgeted resources spared for that particular activity. Should the budget amount be too large, there is a high risk of unnecessary expenses involved and the loose control on the use of money. On the contrary, should the budget amount be too small, the resulting effect may be minimized and may give negative impact on the expected effects.

Budget is sometimes referred to as a controlling tool used as a standard for measuring the gap between actual amount used and planned investment of

company resources. Based on that measurement, budget could be modified in a timely manner.

For the budget planning, each department should discuss with each other and cooperate to work for common goals.

There are three significant types of budget.

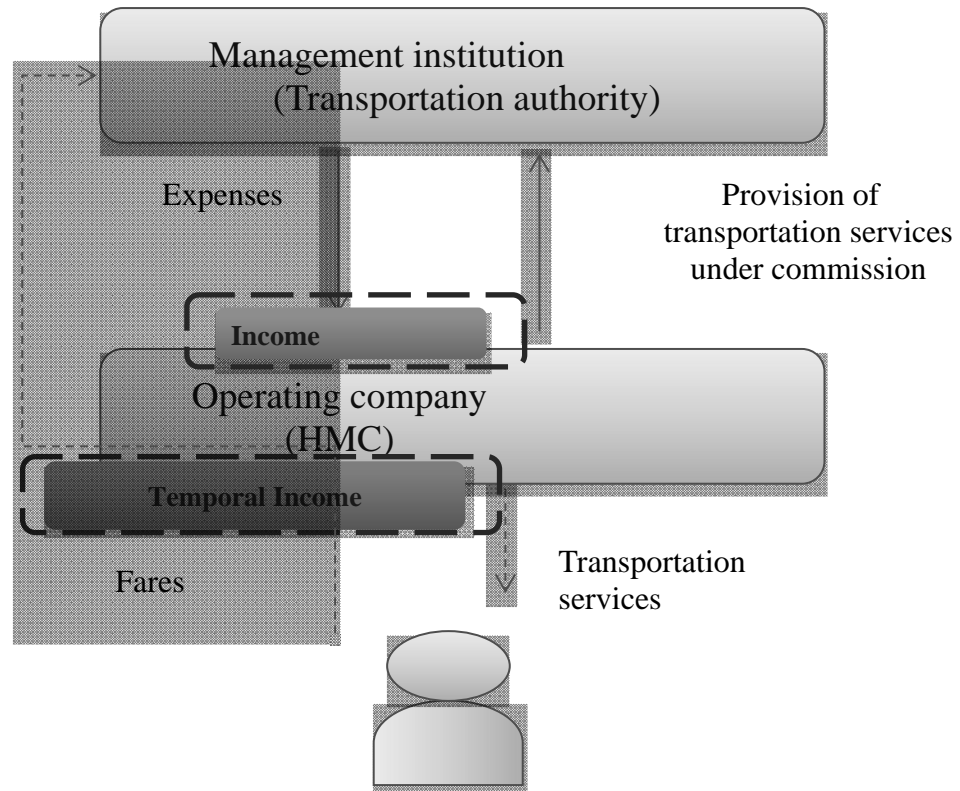
- Budget for investment
- Budget for operation
- Budget for cash management

3.2. *Income*

3.2.1. *Income from fare business*

What follows is the plan for income management under assumptions of TA project.

We have put hypothesis that the fares are controlled by the Traffic authority just like the conventional bus service system in Hanoi. This means that the right of ownership of income from transportation fare belongs to the City of Hanoi. Any record of income from fare shall be regarded as a temporal recording and official recording is made after due approval from the City of Hanoi is given.



Actually, the recording of income from fare is based on the commission agreement between the City of Hanoi and the company.

Following is an illustrated journal entry of certain transactions under one of possible agreements.

<Daily: At the time of ticket selling> Dr. Cash/ Cr. Deposit

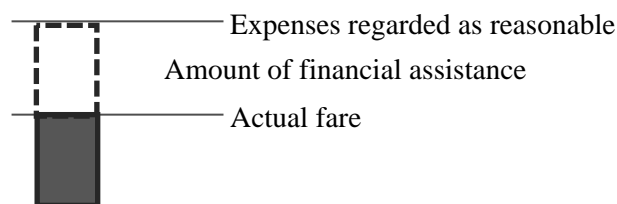
<Monthly: At the settlement with the City of Hanoi>

Dr. Deposit/ Cr. Sales (Cash portion)

Dr. Cash (or Account receivable) / Cr. Sales (Subsidy portion)

3.2.2. Non-fare income and financial assistance

For the disbursement of financial assistance from the City of Hanoi, the calculated amount needs to be reported.



For the calculation, In case any related business of HMC such as advertising brings large income, it should be separately reported from the railway operations income. VAS 28 requires separate financial reporting for the business with more than 10% share of income for the total operation. Same strict segregated reporting is required even for the application of financial assistance.

3.3. Expenses

Actual fare of public services or any reasonable expenses should be in compliance with the Ministerial decree of 25/2014/TT-BTC which details the determination rules concerning general pricing for goods and services.

$$\text{Reasonable pricing (Actual fare)} = \text{Total cost} + \text{expected profit} + \text{tax}$$

Whereas:

a. Total cost includes followings costs:

	Costs	Details
	Direct cost	
	Electric utility cost (C _{VT})	The volume used [M kWh] x Unit price [VND/kWh]

	Direct human cost (C _{NC})	The number of employee x salary (including bonus).
	Depreciation expense of direct employed assets (C _{KH})	Ministerial decree of 45/2013/TT-BTC
	Other expenses (C _K)	If any
I	General expenses	
	General expenses (C _{CM})	<ul style="list-style-type: none"> - Human cost - Cost of materials, repair and maintenance fee of fixed assets - Expenses for tools and equipment - Depreciation expense of general assets - Utility expenses (electricity, water and so on)
	Loan related expenses (C _{TC})	If any
	Sales expenses (C _{BH})	<ul style="list-style-type: none"> - Salary of ticket sales staff - Other expenses
	Administration expenses (C _{QL})	<ul style="list-style-type: none"> - Salaries, cost of equipment and tools employed for maintenance purposes, stationeries, depreciation expenses on fixed assets used for administration - Utility expenses (electricity, water and so on) - Income tax, allowance for certain expenses

b. Expected income

The expected income after corporate income tax should be in compliance with following rules:

- Retain fund for reward and social welfare expenses as provided by current regulations, or
- Using profit ratio at the time of deciding pricing of other goods and services which the company has provided or is currently providing audited or official reported.

In case separate reporting is made for affiliate business, shared expenses should be allocated as provided in Article 9 of Ministry Circular of 25 issued by Ministry of Finance. What follows are the standard allocation rules between railway business and related business employed by Japanese companies engaged in railway transportation services.

Welfare expenses: By proportion of amount of human resource expenses exclusively employed or the number of employees exclusively employed at each business sector or department.

Utility expenses: By proportion of number of employees exclusively employed or by the floor area used at each business sector or department

Advertising expenses: By proportion of operating income exclusively contributed by each business sector or department (*)

General expenses: By proportion of operating income, excluding depreciation expenses, exclusively contributed by each business sector or department

Miscellaneous expenses: By proportion of operating income exclusively contributed by each business sector or department

Depreciation expenses: By proportion of fixed asset amount allocated to each business sector or department

(*) As provided in the announcement of 25, advertising expenses for urban railway transportation business are not included in calculation of subsidy

c. Tax

VAT is exempted for urban railway transportation business as provided by Circular from Ministry of Finance No. 06/2012/TT-BTC.

Legal documents and references

1. Decree No. 130/2013/NĐ-CP concerning manufacturing and supply of public goods and services.
2. Circular No. 45/2013/TT-BTC concerning management, use and depreciation expenses of fixed assets
3. Circular No. 25/2014/TT-BTC on common pricing for goods and services
4. Resolution No. 06/2012/TT-BTC announced by the Ministry of Finance
5. Vietnamese Accounting Standard (VAS)
6. Proposal on establishment of Hanoi Urban Railway Corporation (Version: October 2014)
7. Transportation fare policy report (Revised version)
8. Research report of Financial Accounting Team of TA Project
9. <http://english.trtc.com.tw/>
10. <http://www.bangkokmetro.co.th/Index.aspx?Lang=En>
11. <http://www.smrt.com.sg/>

12. <http://www.lrta.gov.ph/>
13. <http://www.myrapid.com.my/>
14. Thesis of Banking Institution entitled “Financial stability of corporations in Vietnam”.
15. Regulation on accounting for railway transportation companies in Japan

Accounting process

Category	Class	Sub class	Activity	Details on activity	Related party		Frequency	Documents	
					Finance and Accounting dept.	Internal			External
Finance and accounting	Accounting	Preparation of accounting slip	1 Before making payment request	① After execution of transaction, each department receives invoice from the customer		each department	customer	at any time	Invoice
			2 Preparation of payment request	② Staff in charge prepares payment request after reviewing the received invoice and verifying its compliance with related evidencing documents such as underlying agreement, invoices, receiving notice, transaction statements and so on.		each department		at any time	Payment request
			3 Approval from responsible department	③ Forward payment request along with all related documents to the head of each department for approval. (In case approval is not granted, all documents should be returned to the staff in charge)		each department		at any time	All relevant documents required for effecting
				④ In case approval is granted, all documents are forwarded to Finance and Accounting dept.		each department		at any time	
			4 Examination of accounting documents	⑤ Staff in charge of documents inspection of the Finance and Accounting dept. reviews and examines the payment request and related evidencing documents. Should the approval is not granted, the documents are returned to the requesting	accounting			at any time	
			5 Data posting	⑥ Posting data (Data entry into system)	accounting			at any time	
			6 Verification of posted data	⑦ Verification of posted data if necessary	accounting			at any time	
			7 Retaining accounting slip	⑧ Retain accounting slip and related evidencing documents after attaching them to designated papers.	accounting			at any time	
	8 Checking of unapproved accounting slip		⑨ Staff in charge of approval of each department and staff in charge of accounting operation should ensure that no unapproved accounting slip exists.	accounting	each department		at any time		
	Changing and cancellation of accounting slip	1 Requesting for changes or cancellation of posted accounting slip	① Staff in charge of each department should prepare request for changes or cancellation and forward to department head for approval when examining documents and finding that such changes or cancellation deemed necessary.		each department		at any time	Request for changes or cancellation of posted accounting slip	
		2 Approval on request for changes or cancellation of posted accounting slip	② Request authorizer of each department reviews the details of such changes or cancellation and approves such action.		each department		at any time		
			③ Forward request for changes or cancellation to Finance and Accounting dept.		each department		at any time		
		3 Entering changes or cancellation of posted accounting slip	④ Staff of Finance and Accounting department makes changes or cancellation to the subject accounting slip.	accounting	each department		at any time		
			⑤ In case of cancellation, the retained evidencing documents should be returned to the staff of originating department for making revised accounting slip.	accounting			at any time		
		4 Reviewing posted accounting slip	⑥ Review posted accounting slip to check the details of request.	accounting	each department		at any time		

Cash handling process

Category	Class	Sub Class	Activity	Details on activity	Related parties			Frequency	documents	
					Finance and Accounting	Internal	External			
Finance and accounting	01 Treasurer	01	Cash receipt management (Bank transfer)	1 Statement of receiving cash at bank account	① Receive account statement data including detailed transaction slip and transaction report from banks	treasurer		bank	daily	Account report and balance statement
					② Review the receiving cash data	treasurer			daily	
				2 Preparation of journal entry for receiving cash at bank account	③ Prepare journal entry for recording cash receipt < deposit / suspense receipt >	treasurer			daily	Journal entry < Deposit / Suspense receipt >
					④ Compare the transaction slip and account report	treasurer			daily	
				3 Account balance verification	⑤ Related credit balance should be cancelled out if cash receipt is verified	treasurer			daily	
					⑥ If balance is not verified, contact concerned department	treasurer	(each department)		daily	
					⑦ If the payment from a customer was less than invoiced, any shortage will be accounted for as accounts receivable	treasurer			daily	Balance verification statement
					⑧ Register payment request for the amount of shortage	treasurer			daily	Payment request
					⑨ If the payment from a customer was more than invoiced, any surplus is recorded as suspense receipt and report to the relevant department for them to contact the customer for possible refund.		each department		daily	
					⑩ After refund is effected, cancel out the surplus which was recorded as suspense receipt	treasurer			daily	Balance verification statement
		Cash receipt management (cash)		① Review the cash receipt slip for its legitimacy		each department	Customer	daily	Cash receipt slip	
				② Compare cash receipt slip and cash and credit the money to the fund	treasurer			daily	Ledger of the fund	
				③ Cancel out the related credit balance	treasurer			daily		
		02	Cash payment management (Bank transfer)	1 Reviewing payment documents	① Each department shall share payment information with Finance and Accounting dept.	treasurer		as occurred	daily	Paying account information
					② Review the appropriateness of payment request documents through checking the completeness, accuracy, and approval on payment from Board of Directors	treasurer			daily	Documents for payment
					③ Contact originating department for more details if necessary	treasurer			daily	
			2 Execution of payment	④ Prepare remittance order slip and execute bank transfer	treasurer				daily	Payment order, Remittance order
				⑤ Record to documents control sheet	treasurer				daily	Control sheet
			Cash payment management (cash)	1 Reviewing payment documents	① Review the appropriateness of payment request documents through checking the completeness, accuracy, and approval on payment from Board of Directors	treasurer			daily	payment documents
					② Contact originating department for more details if necessary	treasurer			daily	
			2 Execution of payment	③ Prepare payment slip and forward the slip to the responsible staff of Accounting Department to request for remittance to the recipient as provided in the payment slip	treasurer	each department	Customer		daily	Payment slip
				④ After receiving executed payment order slip from the staff of Accounting Department, cancel out the relevant debt to the counterparty	treasurer				daily	Fund account book

Category	Class	Sub Class	Activity	Details on activity	Related parties			Frequency	documents
					Finance and Accounting	Internal	External		
	-	Cash management	1 Cash management	① Review the cash inflows and outflows through cross examining statement of cash and software (Maximum amount is 300 million VND while the minimum amount is 2 million VND).	treasurer			daily	Fund account book
				② Withdraw cash from bank account based on the actual receipt and payment of cash	treasurer			daily	
				③ Prepare withdrawal slip and forward to the President for approval	treasurer			daily	
				④ Credit to the cash balance and record the transaction accordingly	treasurer			daily	Fund account book, Account report
		Deposit management	1 Deposit management	① Review bank statement	treasurer			daily	Statement
				② Output bank account balance statement	treasurer			daily	Balance statement
				③ Compare bank account balance statement and the bank book balance to confirm the account balance and to follow any changes and report as provided by relevant regulations	treasurer			daily	Reports, including balance statement
		Petty cash management	1 Request for replenishment	① Each station forward request for replenishment to operating department		each station		at any time	Request for replenish
				② Operating department prepares summary statement on request for replenishment and forward the document to Finance and Accounting dept. < Petty cash held for change / accounts payable)		operating dept.		daily	Summary statement on request for replenishment
				③ Finance and Accounting dept. withdraws money from banks and forward to operating department for replenishment to each station	treasurer	each station		daily	
			2 Recording of replenishment	④ Operating department replenishes money to each station and forward the receipt to Finance and Accounting dept. for further reimbursement. (receiving and payment of cash)	treasurer			daily	Cash receiving slip of each station
			3 Collection of cash	⑤ Collect cash received at each station in the previous day		operating dept.		daily	Cash collection slip
				⑥ Operating department forwards collected cash to banks		operating dept.		daily	Cash collection slip at bank account / Summary of cash collection statement
				⑦ Staff of finance department follow the process and report as provided in the relative regulations.				daily	Report

Asset management process

Category	Class	Sub Class	Activity	Details on activity	Related parties			Frequency	documents
					Finance and Accounting	Internal	External		
Finance and accounting	06 Asset management	Acquisition of asset	1 Receiving Asset (Acquisition of Asset / Completion of work)	① Acquisition of asset or completion of work		each department	customer	at any time	
				② Inspection of acquired asset or completed work		each department	customer	at any time	
			2 Examining the durable years	③ Examining the durable years of the asset	asset	each department		at any time	
			3 Register information on acquired asset	④ Register information on acquired asset		each department		at any time	
			4 Approval of each department	⑤ Check the registered details and obtain approval at originating department		each department		at any time	
				(If approval is not granted, return the registration application to originating department for reapplication)					
				⑥ Upon approval, register into asset master file		each department		at any time	Fixed asset statement
			5 Check asset list	⑦ Check the registered asset transaction list if necessary	asset	each department		at any time	
			6 Check to ensure no unattended asset transactions	⑧ Staff in charge of accounting department ensures that there are no unattended transactions.	asset	each department		monthly	
				Transfer of asset	1 Discussion among concerned departments	① When the transfer is between departments, the details of transfer should be discussed prior to the transaction.		each department	
		2 Register information on assets to be transferred	② Staff in charge at the transferring department registers transfer information to apply for the approval from President.		each department		at any time		
		3 Approval at the transferring department	③ Check the registered details and approval should be recorded at the transferring department.		each department		at any time		
			(If approval is not granted, return the registration application to originating department for reapplication)						
		4 Approval at the receiving department	⑥ Check the transfer details at the receiving department		each department		at any time		
		5 Check asset list	⑦ Check the transferring asset transaction list, if necessary	asset	each department		at any time		
		6 Execute transfer of asset	⑧ Execute the asset transfer from transferring department to receiving department		each department		at any time	Delivery note	
		7 Transfer maintenance record book	⑨ Transfer maintenance record book of the transferred asset from the transferring department to the receiving department		each department		at any time	Maintenance book	
		8 Approval from Finance and Accounting dept.	④ Finance and Accounting department examines the registered data and approves the transaction	asset			at any time		
			⑤ Upon approval, asset transfer record should be entered on system	asset			at any time		

Category	Class	Sub Class	Activity	Details on activity	Related parties			Frequency	documents
					Finance and Accounting	Internal	External		
		Disposal of asset	0 Register information on assets to be disposed	① Register information on assets to be disposed		each department		at any time	
			1 Approval at each department	② Check the disposal details and approves at each department (If approval is not granted, return the registration application to originating department for reapplication)		each department		at any time	
			2 Approval from Finance and Accounting dept.	③ Finance and Accounting department examines the registered data and approves the transaction (If approval is not granted, return the registration application to originating department for reapplication)	asset			at any time	
				④ Finance and Accounting department submit an application for approval to the head of the company	asset			at any time	
				⑤ Upon approval, prepare disposal transaction slip and enter data accordingly	asset			at any time	
			3 Check asset list	⑥ Check the disposal asset transaction list if necessary	asset	each department		at any time	
		Accounting for Construction in progress	1 Analyze construction cost	① Review the balance and details of construction in progress and analyze construction cost		each department		at any time	
			2 Organizing fixed assets	② Organize fixed assets and define the classification and relevant acquisition cost of fixed asset. Then, forward the information to Finance and Accounting department.		each department		at any time	
			3 Reviewing documents concerning fixed assets	③ Review the documents to approve (If approval is not granted, return the documents to originating department for reapplication)	asset	each department		at any time	
			4 Journalize construction in progress	④ Based on the result of organizing fixed assets, journalize construction in progress					
			5 Approval from Finance and Accounting dept.	⑤ Finance and Accounting department reviews the registered data to approve. (If approval is not granted, return the documents to staff of originating department)	asset			at any time	
			6 Check fixed asset list	⑥ Both originating department and Finance and Accounting department should check the fixed asset list	asset	each department		at any time	
		Depreciation	1 Execute depreciation	① Calculate depreciation expenses	asset			month end	
				② Execute depreciation process to the assets and register the depreciation transaction to system.	asset			month end	
			2 Review the result of depreciation	③ Review the result of depreciation by the statement of depreciation expenses to approve.	asset			month end	Statement of depreciation expenses

Material management process

Category	Class	Sub Class	Activity	Details on activity	Related parties			Frequency	
					Finance and Accounting dept.	Internal	External		
Finance and accounting	07 Materials management	01 Materials procurement	1 Purchase request	① Prepare documents like blue print and specifications and prepares purchase request		each department		at any time	
				② Head of the department reviews the details of purchase request to approve		each department		at any time	
				③ Forward purchase request to operating dept.		each department		at any time	
				④ Operating department reviews the details of purchase request		operating dept.		at any time	
			2 Auction	⑤ Organize auction to select the contractor. (For more details on this process, please refer to "Auction" section of Auction contract process flow)		operating dept.	customer	at any time	
				3 Agreement	⑥ Prepares draft of agreement (For more details on this process, please refer to "Contract" section of Auction contract process flow)		operating dept.		at any time
			⑦ Approve internal application for contract. (This process is necessary to obtain approval from the officer when contract amount is agreed with the contractor and terms and conditions are documented after the auction.)			operating dept.		at any time	
			⑧ Conclusion of the agreement			operating dept.	customer	at any time	
			4 Inspection	⑧ Customer delivers materials with delivery notice		each department	customer	at any time	
				⑨ Inspect the delivered materials		each department	customer	at any time	
				(If deficiency was found, order the customer to repair or replacement)					
				⑩ Register inspected result to the warehouse receiving slip (receiving at warehouse) for the originating department to approve		each department		at any time	
			- Payment on request	5 Receiving invoice	⑪ Receive invoice from Customer		each department	customer	at any time
					⑫ Review the received invoice based on inspection related documents for the concerned department to approve		each department		at any time
					⑬ Forward the invoice along with the inspection related documents to the operating		operating dept.		at any time
⑭ Operating department reviews the inspection result and invoice to approve.		operating dept.				at any time			
6 Execute payment	⑮ Prepare payment request for the approval from the head of operating department. (For more details, please refer to the "Preparation of accounting slip" of accounting		operating dept.		at any time				
	⑯ Forward payment request including all relevant documents to Finance and Accounting	accounting	operating dept.		at any time				
	⑰ Finance and Accounting department reviews the slip to check and approve for	accounting			at any time				
	⑱ Finance and Accounting dept. executes payment (For more details, please refer to cash management process flow)	treasurer		customer	at any time				
		02 Spending of materials	1 Checking the inventory balance	① Check the inventory balance		each department		at any time	
			2 Warehouse delivery out request	② Prepare request for warehouse delivery out request		each department		at any time	
		③ Originating department approves warehouse delivery out request			each department		at any time		
		3 Delivery out of warehouse	④ Prepare warehouse delivery out slip, attach warehouse out request sheet, and forward materials to the request originating department	Materials department of OU	each department		at any time		
			⑤ Originating department receives materials and warehouse delivery out slip		each department		at any time		

Category	Class	Sub Class	Activity	Details on activity	Related parties			Frequency
					Finance and Accounting dept.	Internal	External	
		Returning of materials	1 Request	① Prepare request for materials return		each department		at any time
				② Originating department approves request for materials return		each department		at any time
			2 Return to warehouse	③ Prepare warehouse return slip and forward materials to the materials department along with request for materials return.		each department		at any time
				④ Receives materials and warehouse return slip	Materials department of OU	each department		at any time
				⑤ Report to finance and accounting department	Finance and Accounting			
		Selling off materials	1 Request	① Prepare request for selling off materials	Materials department of OU			at any time
				② Materials department of OU approves request for selling off materials	Materials department of OU			at any time
				③ Apply for approval from the President	Finance and Accounting			
			2 Selling	③ Prepare warehouse delivery out slip and forward the materials to the buyer along with request for selling off materials	Materials department of OU			at any time
				④ The buyer receives materials and the warehouse delivery out slip	Materials department of OU		customer	at any time
		Disposal of materials	1 request	① Prepare request for disposal of materials	Materials department of OU			at any time
				② Materials department of OU approves request for disposal of materials	Materials department of OU			at any time
				③ Apply for approval from the President	Finance and accounting			
			2 Disposal	③ Prepare warehouse delivery out slip and forward the materials to the disposal contractor along with request for disposal of materials	Materials department of OU			at any time
				④ The disposal contractor receives materials and warehouse delivery out slip	Materials department of OU		Customer	at any time

Category	Class	Sub Class	Activity	Details on activity	Related parties			Frequency
					Finance and Accounting dept.	Internal	External	
		Inventory of materials	1 Definition of inventory items	① Prepare inventory items list which are subject to physical inventory check	Materials department of OU			quarterly
			2 Physical inventory check	② Output list of items subject to physical inventory check to prepare inventory items list	Materials department of OU			quarterly
				③ Execute physical inventory check based on the inventory items list	Materials department of OU			quarterly
			3 Register the result of physical inventory check	④ Register the resulting volume of physical inventory check	Materials department of OU			quarterly
			4 Checking the inventory difference	⑤ Check the inventory difference by referring to physical inventory items list	Materials department of OU			quarterly
				(Check the items that are not on the list / Check the items that has differences)	Materials department of OU			
				⑥ Research for causes for unattended items or inventory differences	Materials department of OU			quarterly
			5 Completion of inventory check	⑦ Prepare report of physical inventory check	Materials department of OU			quarterly
				⑧ Authorizer should approve the report after reviewing the physical inventory check list and inventory check report	Materials department of OU			quarterly
				⑨ Materials department of OU submit physical inventory check report to Finance and Accounting dept.	Materials management			quarterly
				⑩ Finance and Accounting department reviews the physical inventory check report to approve. May request for reexamination to Materials department of OU if necessary.	Materials management			quarterly
				⑪ Should there be any inventory difference, request for reexamination and research for possible causes. Then record the difference in the accounting ledger.	Materials management			quarterly

Budget related process

Category	Class	Sub Class	Activity	Activity details	Related parties			Frequency	documents	
					Finance and Accounting dept.	Internal	External			
Finance and accounting	04 Budget	Budget planning	1 Budget planning at each department	① Staff in charge of budget planning at each department should prepare budget plan. Revenue budget should provide project plan on revenue and expense for next 5 years where the immediate following year should be planned monthly and the 2nd and 3rd year should be planned annually. Investment budget should provide project plan on investment for next 5 years where the immediate following year should be planned monthly and the remaining 2nd to 5th year annually.		each department		yearly	Budget plan	
				② Prepare and renew the current year's budget		each department		semi annually		
				③ Prepare supplementary information materials for the budget amount		each department		semi annually		
				2 Reviewing by the head of each department	④ Head of each department should review the budget amount (Responsible staff should modify the planned budget if necessary)		each department		semi annually	
					⑤ Request Finance and Accounting department to review the planned budget	budget	each department		semi annually	
				3 Reviewing by the Finance and Accounting dept.	⑥ Finance and Accounting department review the budget and notify the responsible member of originating department (department head) the determined budget amount	budget	each department		semi annually	
					⑦ Staff in charge of budget plan will allocate the determined budget to each section and instruct to modify the original budget plan if necessary.	budget	each department		semi annually	
					⑧ Staff in charge of budget plan will modify the planned budget if necessary		each department		semi annually	
					⑨ Staff in charge of budget plan will check the modified budget plan and report to Finance and Accounting Department	budget	each department		semi annually	
					⑩ Finance and Accounting dept. examines modified result and the determined budget amount to finalize the budget amount	budget			semi annually	
					⑪ Finance and Accounting dept. report the budget plan to the head of the company and obtain approval before forwarding the budget related documents to the staff in charge of budget of each	budget	each department		semi annually	
	Budget execution and control	1 Monitoring performance against budget	① Finance and Accounting dept. and the staff in charge of budget at each department should monitor the budget and actual performance monthly. Plan and project department should monitor the budget and performance quarterly.	budget	Plan and project department, each department		monthly/quarterly			
2 Seeking solutions on found issues and execution of such solution			② Should there be any difference between the budget and actual performance, Plan and project department and each operating department should seek any solutions to improve the performance.	budget	Plan and project department, each department		monthly			
			③ Each department should execute revised solution plan		each department		monthly			
3 Modifying budget		④ Plan and project department instruct modification on budget plan based on the actual performance result		Plan and project department		quarterly				
		⑤ Finance and Accounting dept. instruct to modify budget to each department.	budget	each department		quarterly				
		⑥ Each department shall make modified budget plan and forward the plan to Finance and Accounting dept. for them to compile the data and to prepare revised report.		each department		quarterly				
		⑦ Finance and accounting department applies for approval from the President	budget			quarterly				

Account closing process

Category	Class	Sub Class	Activity	Activity details	Related parties			Frequency	documents
					Finance and Accounting dept.	Internal	External		
Finance and accounting	05 Account closing	Monthly Account closing adjustments	1 Closing the accounting term	① Limit entries on accounting books and changes to accounting balance (Closing the accounting term and opening previous accounting term)	account closing			monthly	
			2 Preparation of account closing adjustment slip	② Finance and Accounting dept. prepares accounting closing adjustment slip	account closing			monthly	Account closing adjustment slip
				③ Finance and Accounting dept. registers account closing adjustment entries	account closing			monthly	Account closing adjustment entry
				④ Output account closing related documents (B/S, P/L, Total trial balance statement and so on)	account closing			monthly	B/S, P/L, Total trial balance statement and so
				⑤ Checking the account closing adjustments details	account closing			monthly	
			3 Tax report	⑥ Finance and Accounting dept. prepares tax report	account closing			monthly	Tax report
			4 Closing the accounting term (Finalization)	⑦ Close all accounting terms	account closing			monthly	
			5 Other account closing works	⑧ Register slip which are subject to retransfer (on the first day of the following month)	account closing			monthly	
				⑨ Prepare various account closing related documents	account closing			monthly	
	Quarterly, semi annually Account closing adjustment	1 Closing the accounting term	① Limit entries on accounting books and changes to accounting balance (Closing the accounting term and opening previous accounting term)		each department		quarterly		
2 Preparation of account closing adjustment slip		② Finance and Accounting dept. prepares account closing adjustment slip	account closing	each department		quarterly	Account closing adjustment slip		
		③ Finance and Accounting dept. registers account closing adjustment entries	account closing			quarterly	Account closing adjustment entry		
		④ Output account closing related documents (B/S, P/L, Total trial balance statement and so on)	account closing			quarterly	B/S, P/L, Total trial balance statement and so		
		⑤ Checking the account closing adjustments details	account closing			quarterly			
3 Tax report		⑥ Finance and Accounting dept. prepares tax report	account closing			quarterly	Tax report		
4 Closing the accounting term (Finalization)		⑦ Close all accounting terms	account closing			quarterly			
5 Other account closing works		⑧ Register slip which are subject to retransfer (on the first day of the following month)	account closing			quarterly			
		⑨ Prepare various account closing related documents	account closing			quarterly			
	Year end account closing adjustment	1 Closing the accounting term	① Limit entries on accounting books and changes to accounting balance (Closing the accounting term and opening previous accounting term)		each department		yearly		
2 Preparation of account closing adjustment slip		② Finance and Accounting dept. prepares accounting closing adjustment slip	account closing	each department		yearly	Account closing adjustment slip		
		③ Finance and Accounting dept. registers account closing adjustment entries					Account closing adjustment entry		
		④ Output account closing related documents (B/S, P/L, Total trial balance statement and so on)	account closing			yearly	B/S, P/L, Total trial balance statement and so		
		⑤ Checking the account closing adjustments details							

Category	Class	Sub Class	Activity	Activity details	Related parties			Frequency	documents
					Finance and Accounting dept.	Internal	External		
			3 Tax report	⑥ Finance and Accounting dept. prepares tax report	account closing			yearly	Tax report
			4 Closing the accounting term (Finalization)	⑦ Close all accounting terms					
				⑧ Review the account closing adjustment details	account closing			yearly	
			5 Carry forward adjustment	⑨ Account balance shall be carried forward to the following fiscal year.	account closing			yearly	
			6 Other account closing works	⑩ Register slip which are subject to retransfer (on the first day of the following month)	account closing			yearly	
				⑪ Prepare various account closing related documents	account closing			yearly	

Passenger Transport Contract

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Chapter 1: General Provisions

Article 1. General Provisions

This guideline stipulates rights and duties of operator of public passenger transportation services that operates urban railways and passengers that use urban railways, in addition to fares, tickets, IC cards and other items in conjunction with the use of urban railway services by passengers.

Article 2. Applicability

This guideline is applicable to operator that operates passenger transportation services through urban railways and passengers that use urban railway transportation services.

Article 3. Definitions and Interpretation and abbreviation

1. Definitions and Interpretation

- a. *Operator* means an entity or an individual who operates urban railway transportation services in Hanoi.
- b. *Services* mean the passenger transportation services of the Metro rail system managed by the Operator.
- c. *Ticket* is regarded as an evidence of concluded agreement on passenger transportation. Tickets shall be issued by railway transportation operators in the form registered by an authorizing institution. Ticket shall be in the form of paper or IC card.
- d. *Unnamed IC Card* means an IC card that does not have the user's name recorded on the card and can be used by the bearer.
- e. *Named IC Card* means an IC card that has the user's name printed and recorded on the card and can only be used by the named person.
- f. *Charging* means the act of adding money to the IC card.
- g. *Deposit* means the money the customer pays to the operator when the operator first lends an IC card to a user. This is refunded when the card is returned.
- h. *Electronic Ticket Gate etc.* means a machine which checks IC cards and/or tickets.
- i. *Lowest Fare Equivalent* means an amount equivalent to the lowest fare applicable for the distance from the station where the passenger boarded the train to the adjacent station. *Ticket Vending Machine* means automatic equipment installed in predetermined locations within stations and managed by the Operator with the functionality to accept money (Vietnamese dong) from passengers and vend a card (ticket) with the required value and period of validity.
- j. *Ticket Sales Office* means locations within stations where the Operator staff sell tickets and cards.
- k. *Station* means the place where passengers board or disembark the train.
- l. *Train* means a train for passenger transport.

2. abbreviations

- a. ĐSĐT means urban railway systems.

Chapter 2: Rights and Obligations of the Operator

Article 4. Operator Rights

1. The operator has the right to demand that passengers purchase a ticket and comply with the Operator regulations.
2. The operator has the right to inspect personal belongings before those belongings are carried into the station or on to the train in the event that it is determined that said belongings may pose a safety concern.
3. If any of the following events occur, the operator has the right to refuse the passenger from carrying in baggage into or riding on a train.
 - a. In the event that the passenger has not purchased a ticket, contrary to the provisions of clause 1.
 - b. In the event that the passenger does not abide by this contract, the passenger regulations or other relevant laws.
 - c. In the event that a passenger attempts to carry items that exceed the provisions of Article 9 or are prohibited items set forth in Article 10.
 - d. In the event that a child under 10 years of age (or of a height less than 132cm if age is unable to be verified) rides the train without an accompanying adult.
 - e. In the event that a person who has no control over his/her own actions, an intoxicated person, or a person suffering from an infectious disease tries to board the train (except when there is an accompanying care taker).
 - f. In the event that the operator cannot conduct regular passenger transport due to special circumstances or other unavoidable reasons.
4. The operator exercises other rights in accordance with applicable laws.

Article 5. Operator Obligations

1. The operator should run the railway system as provided in the train operation plan (train timetable) under approval from authorized institutions.
2. The operator should provide services that are safe, comfortable, stable and on schedule.
3. The operator should inform passengers of station names and their relevant locations along the railway, location of ticket vending machines and ticket counters, fares and other information as needed by the announcement board.
4. Every station should be equipped with guiding facilities for passengers, information board, platform, emergency exits and so on.
5. Equip every car with speaker, railway map, network chart of urban railway systems, and other facilities.
6. Inform passengers of timetable, fare and rules on riding on trains.
7. In case of accidents or delays, operator should notify passengers of such incidents at every station in a timely manner.

8. Deal with the passengers politely and allocate staff to help disabled passengers when entering and exiting the station, riding on and descending from the train, and so on.
9. The operator should pay for the damages on the health, life, properties of the passengers and repay the received fares in case such damages are in the responsibility of the operator.
10. The operator should cooperate with governmental regulatory organization in reviewing passengers if needed.
11. The operator should exercise other duties as required by the applicable laws.

Chapter 3: Rights and Obligations of Passengers using the Metro

Article 6. Rights of Passengers using the Metro

1. Passengers have rights to receive passenger transportation services of the operator as defined by their internal regulations.
2. Passengers have rights to refuse the use of trains in the following situations or events:
 - a. In the event that the operator violated safety operation guidelines which may lead to either directly or indirectly damage the life or health of passengers or may damage or misplace carrying baggages.
 - b. In the event that the Operator did not notify passengers in advance that the trains are running 5 minutes or more behind the original schedule.
3. Passengers have rights to receive compensation for the damages or the loss of health or life of the passengers caused by technical error of the operator.
4. Passengers have rights to be covered under insurance for the damages or the loss of life or health of the passenger in accordance with the applicable laws.
5. Passengers exercise other rights in accordance with the applicable laws.

Article 7. Obligations of Passengers using the Metro

1. In accordance with operator regulations, passengers shall purchase a ticket, and shall remain in possession of said ticket until their journey is complete.
2. In the event that passengers mistakenly purchase a ticket or the fare paid is insufficient, passengers shall exchange the ticket for one for the correct distance or shall pay the appropriate fare for the distance travelled.
3. If passengers no longer have a use for it, passengers shall return the IC card to the Operator.
4. Passengers must abide by the following conditions to ride the train.
 - a. Use an official ticket.
 - b. Abide by the internal rules and regulations of the operator, follow instructions in the station and on the train, and follow the instructions of station officials.
 - c. Always have an adult accompanying a child under 10 years of age (or of a height less than 132cm if age is unable to be verified) on the train.

5. Passengers shall present their official ticket and/or other documentation to the Operator staff at ticket gates or as required onboard the trains.

Chapter 4 : Passengers transportations

Article 8. Prohibited Actions at Stations and on Trains

Passengers and people are prohibited from the following actions at train stations or on trains:

1. Entering the driver's cabin while the train is in operation, and talking to the crew members.
2. Sales (sale of goods) without the prior approval of the Operator.
3. Speeches, preaching or the distribution of leaflets.
4. Eating, drinking or smoking outside of the designated areas or spitting.
5. Putting out one's hands or legs out of the windows of running train.
6. Hopping on the back of running train.
7. Destruction of signs, advertisements, seats or other machines and equipment.
8. Disposal of cigarette butts, trash or other waste anywhere other than in designated locations.
9. Singing or talking with loud voices, or creating a disturbance.
10. Anything that could affect the public morals such as nudity or semi-nudity.
11. Anything that could impact on staff working on the trains or cause a disturbance for passengers.
12. Anything apart from the above, that could impact on the aesthetics or sense of security at the station or on trains.

Article 9. Personal Belongings

Passengers may carry on board trains personal belongings that meet the following requirements:

- 1- Personal belongings that do not impact on the operation of the train.
- 2- Each item of personal belongings shall be 30kg or less, with the combined length of the three sides (height / width / length) being 190cm or less. Personal belongings mean items which can be carried.
- 3- In addition to complying with clause 1 and 2 of this article, passengers shall not carry three or more of the above items of personal belongings. In the event that a passenger is carrying three or more such items the passenger shall be required to pay for the amount equal to the services used.
- 4- In certain circumstances, station staff may inspect belongings and give permission for said belongings to be carried on the train.

Article 10. Prohibited Personal Belongings

Notwithstanding the provisions of Article 6, passengers are prohibited from carrying the following items onboard the train:

1. Hazardous items, bombs, landmines or explosive agents such as gasoline, oil or gas cylinders.

2. Corpses or remains.
3. Animals (excluding disability support dogs or animals in cages such as small birds (pet birds)).
4. Items which create a nuisance for other passengers as a result of the items being unclean or smelly etc.
5. Items which could damage the train.
6. In addition to the above, any item deemed by the station staff to be not permissible for carriage in to the station or on board the train.

Article 11. Safekeeping and Inspection of Personal Effects

1. Passengers are responsible for the safekeeping of any items they carry on board the train.
2. If there is any suspicion that items have been carried on board the train in violation, officials may demand an inspection of the contents, volume and/or weight of that passenger's items.

Article 12. Restriction or Suspension of Travel

1. In the event that there is a fault affecting train operations, the Operator may impose transport restrictions or suspensions in accordance with the following:
 - a. Restriction or suspension of ticket sales to passengers.
 - b. Restrictions on which trains can be boarded, which sectors can be travelled and/or which routes can be travelled.
 - c. Restrictions on the height, volume, weight and number of pieces, types of items, which sectors belongings can be carried on and/or restrictions to carrying belongings on certain trains.
2. In the event that train operations are restricted or suspended in accordance with clause 1, the Operator should notify related stations of the information mentioned above.

Chapter 5 : Ticket, IC Card Ticket

Article 13. Rounding to the Nearest Kilometer

When calculating fares by distance in kilometers, fractions of 1 km shall be rounded up to 1 km.

Article 14. Fare Calculation Method

1. Fares are calculated as follows:

$$\text{Base Fare} + \text{Transportation Distance Factor} \times \text{Distance (Km)} = \text{VND}$$

2. At the time of fare calculation, any fraction below 1000VND shall be rounded up to the nearest 1000VND.

3. The distance between stations and the relevant fare for Line 2A between Cat Linh and Ha Dong are as follows:

$$6000 + 600 \times 0.7 = 6.420 \text{ VND} = 7.000 \text{ VND}$$

(Left Bottom: Distance [km], Right Up: Fare [x VND1000])

Sta.1	7	8	8	9	9	11	11	12	12	14	14
0.7	Sta.2	7	8	9	9	10	11	12	12	13	14
1.6	0.9	Sta.3	8	8	9	9	10	11	12	12	13
2.7	2.0	1.1	Sta.4	8	8	9	9	11	11	12	12
3.9	3.2	2.3	1.2	Sta.5	8	8	9	9	11	11	12
5.0	4.3	3.4	2.3	1.1	Sta.6	8	8	9	9	11	11
6.4	5.7	4.8	3.7	2.5	1.4	Sta.7	8	8	9	9	11
7.5	6.8	5.9	4.8	3.6	2.5	1.1	Sta.8	8	8	9	9
8.8	8.1	7.2	6.1	4.9	3.8	2.4	1.3	Sta.9	8	8	9
10.0	9.3	8.4	7.3	6.1	5.0	3.6	2.5	1.2	Sta.10	8	8
11.4	10.7	9.8	8.7	7.5	6.4	5.0	3.9	2.6	1.4	Sta.11	8
12.5	11.8	10.9	9.8	8.6	7.5	6.1	5.0	3.7	2.5	1.1	Sta.12

(These shall be approved and officially announced by the HPC in accordance with the provisions of law)

Article 15. Route and Distance

Passenger fares shall be calculated on the actual route passengers will take, or on departure and arrival order.

(These shall be approved and officially announced by the HPC in accordance with the provisions of law)

Article 16. Passenger Categories and Equivalent Fares

Passenger fare is classified by the age group as follows:

- Adults : 12 years old or older
- Children: 6 years old or older but less than 12 years old. Children less than 10 years old should be accompanied by adult person. The fare of children is half of that of adults.
- Infants: Less than 6 years old. Adult person should always accompany infants. Fare is free for accompanying infants up to 2 persons. For each additional number of infants, fare for child will be applicable. (These shall be approved and officially announced by the HPC in accordance with the provisions of law)

Article 17. Fare Reduction and Exemption as Part of Social Policy Targets

1. Persons under social policy program shall enjoy the preferential fare discount system as provided in the following chart.

Class	Subject person	Discount level
a	Persons engaged in revolutionary activities, Viet Nam war veteran and his mothers, disabled veteran, disabled veteran under political protection, sick and wounded soldiers, persons that are captured by	90%

	the enemy, imprisoned, and expelled during the resistance activities, persons that are poisoned by chemical poison in the resistance activities and victims of defoliant.	
b	Elderly persons who are 60 or more years old and disabled persons.	50%
c	Students and university students	30%

2. In case one person under social policy program belongs to two or more classes, the only one with the highest discount ratio is applicable.

3. At the time of purchasing tickets, the person subject to fare discount treatment should produce certificate and personal documents that proves the eligibility of such fare discount.

(These shall be approved and officially announced by the HPC in accordance with the provisions of law)

Article 18. Types of Ticket

Types of tickets of urban railway system such as one-time ticket, monthly ticket and so on are as follows:

- One-time ticket
- 100.000VND, 200.000VND, 500.000VND tickets
- One-day ticket, 3-days tickets, monthly ticket
- Common ticket used for Hanoi network (Hanoi pass)
- Group ticket
- Preferential one-time ticket (For children, elderly persons, students, soldiers, disabled persons, and so on)
- Preferential ticket (For children, elderly persons, students, soldiers, disabled persons, train drivers and so on)

(These shall be approved and officially announced by the HPC in accordance with the provisions of law)

Article 19. Documents Provided by Passenger upon Ticket Purchase

1. When a passenger purchases a concession ticket the passenger must adequately complete in ballpoint pen the required documentation for submission to the Operator and affix his/her seal where specifically indicated.
2. If the passenger makes corrections in the documentation specified in clause 1, said corrections must have a seal affixed (or be initialed).
3. In addition to clause 1 and 2, passenger documentation will only be accepted when the Operator deems it to be correct.

4. The concession card is invalid or cannot be used in the following situations. Note, the transport concession card shall be rendered void and recovered if used:
 - a. When the details on the card have become unclear.
 - b. When details on the card have been concealed with correction fluid etc. or altered.
 - c. When the period of validity has expired.
 - d. When the person using the concession card has lost the entitlement to use it, even if the card is still within the period of validity.
 - e. When used by someone other than the named holder.
5. In the event where any of the followings is applicable, the transport concession card can not be used.
 - a. When the issuer has not entered all required details.
 - b. When the issuer or user has not affixed his/her seals in the required places.
 - c. When the appropriate seal is not affixed to a card where corrections have been made.

Article 20. Tickets and IC Card Ticket Gates

1. To enter or exit the platform passengers must enter or exit from a fixed location by taking the prescribed ticket and having it checked by the ticket gate attendant (includes checks by automatic ticket gates. The same applies below for checking or returning tickets at ticket gates).
2. In the event that a ticket has lost its validity, is no longer needed or the passenger is no longer eligible to use the ticket, said ticket shall be returned to the attendant.
3. Tickets are valid for a single, one-way trip. A single IC card can be used for one passenger.
4. After passing through the ticket gate the ticket is only valid for that day.
5. The tickets do not support stopovers.
6. When using an IC card to ride the train, passengers get the IC card checked by the ticket gates etc. to enter the platform and then passengers must get the same IC card checked by the ticket gates etc. to exit the platform.
7. If there are insufficient funds left on the IC card to pay the fare when exiting, passengers must pay the shortfall on the fare adjustment machine etc. before being able to exit.

Article 21. Limitations

1. Amounts of less than 1,000 VND, may not be used to pay passenger fares.
2. If a passenger exits using an IC card that is not the same IC card he/she used to enter, that IC card used to enter shall no longer be able to be used to enter.
3. In any of the following situations an IC card may not be able to be used directly in ticket gates:
 - (a) When the balance on the card is less than the lowest equivalent fare from that station when entering the platform.

- (b) When it is not possible for the ticket gate to read the data on the IC card ticket due to among other things damage to the IC Card, ticket gate malfunction, or power outages.
- (c) When the IC card has not been used for any transactions within a fixed period determined by the operator and calculated from the day after the named IC card was first used for transactions such as entry, exit and charging.

Passengers can not enter and exit the station (ticket gate) without the permission from the station staff except for the purposes of riding on the train.

- 4. A named IC card may not be used by anyone other than the named holder registered on said IC card.
- 5. Counterfeit, falsified or illegally made IC cards must not be used.

Article 22. Ticket Sales

- 1. Ticket sales shall be available from 15 minutes before the departure time of the first train until the arrival time of the final train.
- 2. Tickets shall be for sale from station attendants at ticket offices or from automatic ticket vending machines installed in stations (Excluding specific ticket types which are only available at select stations).

Article 23. Ticket Refunds

In the event that a passenger no longer requires his/her regular ticket before travel has begun, provided the ticket has not yet been punched and provided the ticket is still within the period of validity or prior to the effective date of the ticket, he/she may present it at the station and apply for a refund of the prepaid fare. In this case, the passenger must pay a 000 dong processing fee.

(The appropriate amount will be calculated after the fare is approved and becomes publicly available.)

Article 24. IC Card Ownership

- 1. IC cards are issued to passengers by the Operator (or by organizations specified by the HPC). When the Operator lends the card to passengers, passengers must pay a 000 dong deposit. When passengers no longer have a use for the card, passengers shall return it to the Operator. The Operator retains ownership of IC cards.
- 2. In case it becomes unnecessary for any passenger to use IC card, such as when IC card becomes invalid or the passenger has lost the right to use the IC card, the said passenger should return the unnecessary IC card back to the operator.

(The appropriate amount will be calculated after the fare is approved and becomes publicly available.)

Article 25. Deposits

- 1. When an IC card is issued to a passenger, the Operator collects 000 dong as a deposit.
- 2. When a passenger returns his/her IC card to the operator, the Operator shall refund the deposit set

forth in Article 24, Clause 1.

3. The deposit cannot be used as a fare.

(The appropriate amount will be calculated after the fare is approved and becomes publicly available.)

Article 26. Charging

1. The IC card can be charged at ticket vending machines, or by attendants at the ticket office or in the station.
2. If a passenger uses an IC card to ride the train and the balance on the card when exiting the platform is less than the equivalent fare, the IC card can be charged at the fare adjustment machine, or by attendants at the counter or in the station.

Article 27. Check IC Card Balance

1. The IC card balance can be checked at the ticket vending machine.
2. IC card processing equipment can show up to 20 transactions of the IC card balance history starting from the most recent and excluding the following:
 - a. When an exit has yet to be processed.
 - b. When processing was not conducted normally by a prescribed device.

Article 28. Alterations to IC Cards

In the event that a passenger presents an unnamed IC card and requests that it be changed to a named IC card, the IC card may be altered. However, named IC cards may not be changed to unnamed IC cards.

Article 29. IC Card Refunds from the Operator

1. When a passenger no longer has a use for an IC card and returns it to the Operator, the Operator shall refund the balance of the IC card to the passenger. In this event, the passenger shall pay an IC card refund processing fee of 000 dong.
2. The refund details for balance, processing free and deposit are as follows:

$D = A$ (IC card balance is 0 dong.)

$D = ((B - C) + A)$

A – Deposit

B – IC card balance

C – IC card refund fee

D – Total for passenger to receive

3. When a passenger seeks a refund for a named IC card, he/she must bring and present the required documentation in accordance with the provisions.

Article 30. Reissue of Lost IC Cards

1. In the event that the holder of a named IC card loses said named IC card, the lost IC card shall be cancelled and a new one issued. In this case, the passenger shall pay a deposit and an IC card reissue fee.
2. In the event that the lost IC card is found after the new card has been issued, the deposit shall be returned to the passenger if a deposit had been collected on said named IC card.

Article 31. Reissue of Damaged IC Cards

1. In the event that the IC card cannot be used in prescribed ticket gates or ticket vending machines as a result of damage to the card, the IC card may be reissued.
2. The provisions of the previous clause notwithstanding, if any of the following circumstances apply, the IC card shall not be reissued for whatever reason. Furthermore, the deposit shall not be returned to the passenger.
 - a. In the event that the card number imprinted on the reverse of the card is illegible.
 - b. In the event that the card was damaged and rendered void as a result of the passenger's deliberate actions or gross negligence.

Article 32. Void IC Cards

1. An IC card shall be rendered void in any of the following situations:
 - a. When an IC card used to start a trip is then re-used to start another trip.
 - b. When a passenger enters the platform not having had the IC card checked by the automatic ticket gate without the permission of station staff.
 - c. When a named IC card is used by someone other than the named holder.
 - d. When a named IC card is used but the details on the card are unclear.
 - e. When details on the card have been concealed with correction fluid etc. or altered.
 - f. When a counterfeit, falsified or illegally made IC card has been used.
 - g. When it is found that the IC card was damaged as a result of a passenger's deliberate actions or gross negligence.
 - h. When used as any other means to illegally obtain rides.
2. If any of the provisions in clause 1 apply, the Operator shall confiscate the card upon detection and the passenger who used said card shall be required to pay an administrative fine of 000 dong.

Article 33. Operator Disclaimer Regarding IC Cards

The operator does not accept any responsibility for damages suffered by the passenger as a result of the following:

1. IC card exchange or reissue.

IC card renewal, or IC card exchange or similar measures when an IC card user has been instructed by the Operator to exchange his/her IC card etc. as deemed necessary by the Operator.

Chapter 6 : Problems' dealings and Penalties (Issues on urban railway transportation services)

Article 34. Lack of Ticket or Improper Ticket Use

1. In the following situations passengers shall be dealt with and penalized:
 - a. Riding without a ticket.
 - b. Using a fake ticket.
 - c. In the event that someone other than the named holder uses a named IC card or uses an IC card that has had the registered name altered.
2. In the event where any passenger is found to act as detailed in Clause 1., the Operator will deal with the said passenger as follows:
 - a. In case of riding without a ticket, the passenger should pay the penalty for the amount applicable for the travel from the departing station.
 - b. In case of riding with a fake ticket, the fake ticket will be seized, and the passenger should pay the penalty for the amount of XXX VND.
 - c. In the event that someone other than the named holder uses a named IC card, or uses an IC card that has had the registered name altered, that IC card will be seized.

(The appropriate amount will be calculated after the fare is approved and becomes publicly available.)

Article 35. Ticket Loss

1. In the event that a passenger loses his/her ticket or IC card after beginning his/her journey and officials are unable to verify the facts of the matter, the passenger shall be subject to a fine in accordance with Article 34, Clause 2, a, for the already traveled sectors and the remaining sectors to be travelled shall be charged at the equivalent fare for the whole journey.

2. If officials are able to verify the facts as per the previous clause, the passenger shall be charged the equivalent fare for all sectors travelled.

Article 36. Mistaken Ticket Purchases

1. In the event that a passenger mistakenly purchases a ticket that is different from the one he/she intended to buy, the ticket can be exchanged for the correct ticket if the reason for the error is deemed to be unavoidable, such as the same or similar station names, and the attendant accepts that reason.

2. In the situation of the previous clause, the fare/money already paid is compared to the correct fare/money and any shortfall shall be paid by the passenger and any excess monies shall be refunded to the passenger.

Article 37. Carriage of Prohibited Personal Belongings

In the event that a passenger is discovered to be carrying prohibited personal belongings as set forth in Article 10, said violation shall be dealt with in the following manner:

1. In the event that the carriage of prohibited personal belongings is discovered at the departure station, denial of travel or suspension of transport formalities shall be enacted.
2. In the event that the carriage of prohibited personal belongings is discovered while the train is in transit, it shall be dealt with in the following manner:
 - a. If discovered inside a moving train, the service shall be halted and the passenger shall be removed from the train at the station at which the service stopped or at the nearest station.
 - b. In the event that the personal belongings are prohibited but not hazardous items, the passenger shall be transported to his/her destination station and the violation shall be dealt with there.
3. In the event that the operator is given orders by a national authority allowing the seizure of personal belongings, the station master shall make a report of the event and pass it on to a representative of the authority that gave the order. The format for the report shall be determined by the collection agency. Aside from retaining a report, some cases may be dealt with as follows:
 - a. In the event that personal belongings are seized at a station, the station official responsible for seizing said belongings shall notify the collection agency and resolve the issue.
 - b. In the event that personal belongings are seized during transit, said belongings shall be transported to the destination station and dealt with in accordance with clause 2 and clause 4 (b).
4. In addition to the treatment by the governmental regulatory organization, following penalties will apply in case passengers or the freight forwarders violated any of the clauses 1, 2 or 3 above.
 - a. The passenger shall pay a fine for all personal belongings or cargo transported, in accordance with operator regulations.
 - b. The passenger shall compensate for all damages caused by this violation.
 - c. The passenger shall pay costs incurred (if any).

Article 38. Entrance and Exit at the Same Station

1. In the event that a passenger uses a ticket or IC card to enter the platform and rides to any station and then, without exiting, travels back to the original station and exits, the passenger must pay the regular fare for the sectors actually travelled.
2. In the event that a passenger uses a ticket or IC card to enter the platform and then exits at the same station without riding the train, the passenger must pay the lowest fare equivalent for that station.

Article 39. Train Unable to Operate

In the event that the train is unable to operate after passengers have already passed through the ticket gates,

passengers may request either of the following:

- (a) Free return to departure station: Passengers are not charged for the sectors traveled to return to the departure station. If using an IC card it will be processed to delete the departure station data when exiting.
- (b) Free return to a station on the way back to the departure station or cancellation of travel at another suitable station: Passengers pay the one way fare equivalent from the departure station to the midway station or other suitable station.

Article 40. Insurance Obligations for the Metro

1. Companies which operate urban railways must obtain civil liability insurance in accordance with the provisions of the Insurance Business Act.
2. Companies which provide passenger transport must obtain passenger insurance. However, that insurance premium may be factored in to the passenger fare.
3. Tickets and travel documents become proof for insurance payouts when an insurance event has occurred.

Article 41. Dispute Resolution for Metro Operation and Management

1. In case dispute between passengers and the operator of urban railway transportation systems arises, the resolution scheme will be as follows:
 - a) Through negotiation and arbitration
 - b) Request for the solution through arbitrator or file a lawsuit against passengers
2. The process and procedures for dispute resolution should be in accordance with the regulations provided in the applicable law.



Hanoi People's Committee



Japan International Cooperation Agency

JICA's Technical Assistance Project to Strengthen the Capacity of Regulator and to Establish Operating Company of Metropolitan Railway Lines in Hanoi City

Deliverable

A draft of the related-project plan

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Instructor: **Tanisaka**

September 2015, Hanoi

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I – Grounds

- A corporate philosophy approved and enacted in accordance with written decision No. ○○ dated ○ of Hanoi Metro One Member Limited Liability Company,
- A long-term vision approved and enacted in accordance with written decision No. ○○ dated ○ of Hanoi Metro One Member Limited Liability Company, and
- A five-year business plan approved and enacted in accordance with written decision No. ○○ dated ○ of Hanoi Metro One Member Limited Liability Company, which are based on
- Finance rules enacted in accordance with written decision No. ○○ of Hanoi Metro One Member Limited Liability Company, based on
- A written decision No. 4694/QĐ-UBND by HPC dated June 15, 2015 concerning the approval of the articles of incorporation of Hanoi Metro One Member Limited Liability Company, based on
- A written decision No. 6266/QĐ-UBND by HPC dated November 27, 2014 concerning the establishment of Hanoi Metro One Member Limited Liability Company, based on
- Advertisement Act No. 16/2012/QH13 dated June 21, 2012, based on
- Real Estate Business Act No. 66/2014/QH13 dated November 25, 2014, based on
- Enterprise Act No. 68/2014/QH13 dated November 26, 2014, based on
- Railway Act No. 35/2005QH11 dated June 14, 2005.

II. – Purposes and Goals

2.1 Purposes

- Attract passengers to using metropolitan railway
- Increase other operating incomes of the company

2.2 Goals

- Value of the goal: (not defined yet since the 2A Line has not been completed)
- Increase convenience for passengers who use metropolitan railway services by providing convenient services such as stores inside/outside stations.

III – Method

Analyzing the elements that would directly affect the management of the company

3.1 Company analysis

With the goal of attracting more passengers by providing highly convenient services at the stations and in the line areas, the company should conduct the following operations along the railway lines and around the stations.

Advertising operation: Inside/outside trains, inside/outside stations

Store-based operation: Building/installing stores suitable for spaces inside/outside stations as indicated below, and operating a business that is expected to generate an income and would provide convenience.

For **goods stores**, stationery stores, etc. shall be operated in addition to selling beverages and foods.

For **convenience stores**, services related to beverages and foods, goods, etc. shall be operated.

Operation of parking lots and stations: To attract residents to using metropolitan railway, it is necessary to prepare parking spaces for passengers using other means of transportation such as bicycles, motorbikes and automobiles.

Optical fiber and Internet installation business: Areas along lines, and stations

The advantages and disadvantages of operating the above forms of operation are shown in the table below.

Advantage	Disadvantage
<ul style="list-style-type: none"> - A large number of passengers pass (advertising in station yards and trains). - Surplus space can be used for advertising and store operations. - Many of the stations are close to residential areas, new urban center and schools/universities. - Passengers can view advertisement displays and make purchases more safely than on the street. - Passengers can purchase what they want in the course of travelling. - Advertisements that suit uses, such as loud speakers, images and posters can be used. 	<ul style="list-style-type: none"> - Since many of the passengers use mobile phones, they may not pay attention to advertisements.
Stores in station yards	
<ul style="list-style-type: none"> - Passengers are prospective customers of related businesses. - Collaboration with the railway business is possible. - Even if it rains, passengers can make a purchase without getting wet. 	<ul style="list-style-type: none"> - Since the stations of the 2A Line do not have large spaces, stores with large areas cannot be installed. - In the station yard, only a small number of stores can be installed. - Since columns of an elevated bridge are present in the median of the road, it is difficult to install a store under the elevated bridge.

3.2 Competitor analysis

Major competitors in the related businesses are private restaurants/variety stores, supermarkets, and advertisement signboards along the railway lines.

With regard to restaurants, goods stores and convenience stores, according to the above analysis, the 2A Line between Cat Linh and Ha Dong is a line that connects the city center with the Ha Dong district, which is in the west-south of the city center. Since there are many residential areas, commercial facilities and schools along the line, the consumptions of commodities there are also large. To satisfy the demands of citizens, there are a large number of stores along the line, and various products are sold there. Such convenience and diversity are highly convenient for the citizens, and they are used in a great deal.

Advantage	Disadvantage
<ul style="list-style-type: none"> - A large number of stores - Diversified items - Convenient purchases - Reasonable prices - Matched to the culture and life 	<ul style="list-style-type: none"> - Not hygienic - Unknown places of food production

Supermarkets: As a result of examining and analyzing the areas along the line, it was found that there were seven new development areas along the line, and the population density was relatively high there. To satisfy the living demands of residents in the development areas and residents in the vicinities of the areas, supermarkets have been built. Examples include Me Linh- Ha Dong supermarket in the Van Phu district, the Haiway supermarket on the Quang Trung Street, and the Coopmart supermarket in the Lang Viet Kieu area.

Electronics retail stores, “Media,” “Tran Anh” and “Nguyen Kim” are located along the Quang Trung Street. These stores are not competitors for the related businesses of the metropolitan railway, but may serve to attract passengers (additionally, future development areas include the Royal, Hoa Binh, Thai Ha and Cat Linh districts). However, to install stores that match the needs of passengers of HMC, it is necessary to clearly analyze advantages and disadvantages of such supermarkets. Doing so will clarify the points that HMC regards as strategically important.

Advantage	Disadvantage
<ul style="list-style-type: none"> - With a large scale, many people can be attracted. - Diversified items are sold - Operated in areas with large populations - There are amusement facilities 	<ul style="list-style-type: none"> - Higher prices than ordinary roadside stores - It is customary for ordinary citizens to make purchases at markets and roadside stores. - With limited kinds of intended articles to purchase, it would take more time at supermarkets if the purchase

	quantity is small.
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Forms of advertisements shown along the Quang Trung-Nguyen Trai Street

Advantage	Disadvantage
<ul style="list-style-type: none"> - Advertisements can be placed in any form - Large area of advertisements - Reasonable prices - Reach a wide audience - Bus lines are operated, and taxis run on the street. 	<ul style="list-style-type: none"> - Limited to visual advertisements - Difficult to narrow down targets

3.3 Analysis of the demands of the market, customers and residents for each station

According to prediction data, it is expected that the number of passengers per day in the initial period after the starting of business will be 259,400 people-times and the maximum sectional area at the peak time will be 13,400 people-times, and then the flow rate per day will subsequently increase to 925,300 people-times. Therefore, the 2A Line is expected to respond to the demands for transportation between the city center and Ha Dong. Along this line, which runs from north to south in Hanoi City, there are numbers of residential areas, offices and universities, and the line connects multiple important transportation points in Ha Dong, such as bus terminals. Therefore, the related businesses will contribute to improving convenience for passengers, and will produce a high operating effect.

With the line length of 13.06 km, the metropolitan railway 2A Line has 12 stations.

For the Cat Linh, which is the terminal among the 12 stations, it is planned to build a business center in cooperation with Hanoi Urban Building Development Company.

Characteristics of the other stations are as indicated in *Appendix 2*.

IV – Content

4.1 Form of operation

4.1.1 Advertising operation

4.1.1.1 Advertising operation by means of print media in trains and stations

The advertising operation in trains is intended to conduct advertising in trains by posting advertising posters or panels on the sides of the train or in places with good visibility where they will not affect the safety or convenience of passengers. The company will lease (or directly manage) places for advertisement. These advertising posters can be easily replaced (see Photo 1 below).

(Photo 1: Examples of advertising operation in trains)



(Photo 2: Examples of advertising operation in stations of Tokyo Metro)



4.1.1.2 Electronic advertising operation

In the electronic advertising operation, the company will install advertising equipment (LED screen) by itself and lease it to an advertising company, or commission the performance and management of investment and the search for advertisers to a company having a capability and experience. These LED screens will be installed in stations (see Photo 3 below).

(Photo 3: Examples of advertisement using LED screens at *Beijingmetro* station)

4.1.2 Space leasing business

In the space leasing business, the company will build or install a store by itself and lease it, or can commission the implementation to another company. However, it must be guaranteed that the use of the premises of the store will not affect the railway business (see the photos below).

(Photo 4: Examples of lease of kiosks at a station of Tokyo Metro)



METRO'S (Kiosk at Omote-sando Station)

4.1.3 Business of running places for installing optical cables and Internet/Wi-Fi transmission lines

The company will lease the land under (or above) piers to an operation company that install Internet transmission lines such as optical cables. However, it must be guaranteed that the leasing will not affect the train service.

4.1.4 Parking lot operation (real estates along the railway line): to be studied in the future.

4.2 Place of operation

4.2.1 In trains

In-train advertising operation:

- + Print-based advertisement (posted in appropriate places)
- + Screen-based advertisement (posted in appropriate places)

4.2.2 Inside/outside stations

The advertising operation inside stations includes the following.

- + Kiosks (places shall be determined after field research at the stations)
- + Print- and panel-based advertisement (places shall be determined after field research at the stations).
- + LED-based advertisement (places shall be determined after field research at the stations).

The advertising operation outside stations includes the following.

- + Advertisement
- + Kiosks

4.2.3 Along the railway line (installing equipment in parking lots and along the railway line)

The advertising operation along the railway line includes the following.

- + It must be guaranteed that the advertisement will not affect the management, train service and maintenance by burying it underground to protect wires and piping (for cables, water service, etc.).
- + Making a construction investment while considering an appropriate place for a parking lot/station.

4.3 Implementation plan

An implementation plan derived from the above analysis is as follows.

No.	Content	2016												Remarks
		1 st quarter			2 nd quarter			3 rd quarter			4 th quarter			
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
I	Advertisement													
1.1	In-train advertising													
	<i>Planning and approval</i>													
	<i>Commission of implementation</i>													
1.2	Inside-station advertising													
	<i>Planning and approval</i>													
	<i>Commission of implementation</i>													
II	Kiosks (store)													
	<i>Planning and approval</i>													
	<i>Commission of implementation</i>													
III	Lease of premises (infrastructure)													
	<i>Planning and approval</i>													
	<i>Development</i>													Next year
IV	Parking lot construction investment													
	<i>Planning and approval</i>													
	<i>Development</i>													Next year

4.4 Implementing organizations

4.4.1 Head office

The head office will perform the planning, and apply for approval of the plan.

It will submit the plan to the president in order to obtain approval of the implementation option.

Auditing of the implementation.

Allocation of the fund.

4.4.2 Operation company (station department)

Implementation in cooperation with the contractor

Auditing of the implementation.

Reporting of the implementation result.

4.5 Financial plan

Calculation unit: VND

No.	Content	2016				Remarks
		1 st quarter	2 nd quarter	3 rd quarter	4 th quarter	
A	Income					
I	Advertisement					
	In trains					
	Inside stations					
II	Kiosks (store)					
III	Lease of premises					
IV	Construction investment					
B	Cost					
I	Advertisement					
	In trains					
	Inside stations					
II	Kiosks (store)					
III	Lease of premises					
IV	Construction investment					
C	Net income before tax					
D	Net income after tax					

(Details will be determined after the 2A Line is opened.)

4.6 Implementation personnel plan

The sales department will propose personnel based on the actual status.

V – Appendixes, Forms

Appendix 1: Passenger flow rate at the stations during daytime and rush hours of the Cat Linh-Ha Dong Line

Appendix 2: Characteristics of the stations of the 2A Line Cat Linh-Ha Dong, and analysis of passengers and passenger flow rate

Appendix 3: Architectural characteristics and areas of the stations

Appendix 4: Medium-term plan for operation of the related businesses

(The forms of the application, written decision and written report will be prepared at a later stage.)

Appendix 1

Passenger flow rate at the stations during daytime and rush hours of the Cat Linh-Ha Dong Line

No.	Between stations	Daytime		Rush hours	
		Hanoi – Ha Dong	Hanoi – Ha Dong	Hanoi – Ha Dong	Hanoi – Ha Dong
1	Cat linh Station – La Thanh Station	152797	151673	12223	12133
2	La Thanh Station – Thai Ha Station	166789	167186	13343	13374
3	Thai Ha Station – Lang Station	161182	161736	12894	12938
4	Lang Station – National University Station	147100	146931	11768	11754
5	National University Station – Vanh dai 3 Station	92372	92408	7389	7392
6	Vanh dai 3 Station - Thanh Xuan 3 Station	67552	67600	5404	5360
7	Thanh Xuan 3 Station – Ha Dong Bus Terminal Station	69429	69475	5554	5558
8	Ha Dong Bus Terminal Station - Ha Dong Station	70912	70959	5672	5676
9	Ha Dong Station - La Khe Station	65391	65468	5231	5237
10	La Khe Station - Van Khe Station	66934	67019	5354	5361
11	Van Khe Station – Ha Dong New Bus Terminal Station	70453	70538	5636	5643
12	Maximum flow rate	166789	167186	13343	13374

(The data are based on the fundamental design of the 2A Line.)

Appendix 2

Characteristics of the stations of the 2A Line Cat Linh-Ha Dong, and analysis of passengers and passenger flow rate

No.	Name of station	Characteristics of surroundings of station	Passengers	Passenger flow rate per day in 2016 (persons)	
				Boarding	Alighting
1	Cat Linh	<ul style="list-style-type: none"> - Building material stores, restaurants, cafés - Many hotels - Many office buildings - Temple of Literature - Many residences 	<ul style="list-style-type: none"> - Residents in the vicinity: commuters, students, business managers - Tourists: from large hotels 	41987	42545
2	La Thanh	<ul style="list-style-type: none"> - Small-size stores such as cafés and clothing stores - Many residents in the vicinity of the station - Connected with the No. 3 Line 	<ul style="list-style-type: none"> - Residents in the vicinity - Commuters - Students, university students 	209327	210830
3	Thai Ha	<ul style="list-style-type: none"> - Large-scale buildings in which offices and condos are established together - Many head offices of Vinaconex, Oil companies, etc. - Shopping centers - Russia-Vietnam Friendship Association - Movie theaters 	<ul style="list-style-type: none"> - Residents in the vicinity of the station - Commuters - Shoppers - Tourists 	36162	36342
4	Đuông Lang	<ul style="list-style-type: none"> - Communist party executives educational school - Many karaoke bars - Nga Tu So Market - Large shopping center (Loteria's building) 	<ul style="list-style-type: none"> Residents in the vicinity of the station University students (Commuters) Shoppers Foreigners 	35753	35160

No.	Name of station	Characteristics of surroundings of station	Passengers	Passenger flow rate per day in 2016 (persons)	
				Boarding	Alighting
		- Luxury condos integrated with a large-scale shopping center and an amusement facility			
5	National University	<ul style="list-style-type: none"> - National university - Dormitories (including school dormitories and house rentals other than schools) - Commerce and industry center and apartments/condos - Thang Long cigarette production plant, Thuong Dinh shoe production company - Restaurants 	<ul style="list-style-type: none"> Residents in the vicinity of the station University students (major target) Workers, officials/executives 	42725	42793
6	Vanh Dai 3	<ul style="list-style-type: none"> - Department stores - Xay Dung Hospital - Apartments - Shoe company, Rang Dong thermos bottle company, many universities - Pico Plaza (electronics retail store) 	<ul style="list-style-type: none"> - Residents in the vicinity of the station - University students - Shoppers 	35714	35725
7	Thanh Xuan 3	<ul style="list-style-type: none"> - Hanoi University - Junior college of arts, junior college of transportation - Phung Khoang Market (large market) - Dormitories of universities - Apartment/condo district 	<ul style="list-style-type: none"> - Residents in the vicinity of the station - University students - Commuters 	8722	8720
8	Ha Dong Bus Terminal (former)	<ul style="list-style-type: none"> - Architectural university, security academy, postal and telecommunication academy, academy - Apartment district integrated 	<ul style="list-style-type: none"> - Residents in the vicinity of the station (including apartments and condos) 	7061	7061

No.	Name of station	Characteristics of surroundings of station	Passengers	Passenger flow rate per day in 2016 (persons)	
				Boarding	Alighting
		with large-scale electric/electronic equipment shopping centers (Nguyen Kim, Tran Anh, Coopmark) - Lang Viet Kieu, Van Quan condo groups	- Shoppers - Commuters - University students		
9	Ha Dong	Commerce and industry center Ha Dong Market Le Quy Don High School Ha Dong athletic ground Ha Dong Hospital	- Residents in the vicinity of the station - Shoppers - Commuters - Students	14033	14063
10	La Khe	Area attracting a large number of residents, with (two) new apartment buildings to be constructed	- Residents in the vicinity of the station - Commuters - Students, university students	6988	6996
11	Van Khe	- Nguyen Hue High School - Van Khe apartment building (newly constructed)	- Residents in the vicinity of the station - Students	5050	5020
12	Yen Nghia Bus Terminal (Ha Dong new bus terminal)	- Yen Nghia Bus Terminal (Hanoi bus station, terminal of buses headed to the north) - Junior college of economics - Thanh Tay University	- Residents in the vicinity of the station - Students, university students - Commuters	70538	70453

(Based on the data of technical design No. HNHD-02-02-00-00-TDS-C [Table 2-6] for the 2A Line)

Appendix 3
Architectural characteristics and areas of the stations

No.	Name of station	Structure	Area	Remarks
1	Cat Linh	Overhead station, island-style platform		Starting station, transfer station with the No. 3 line
2	La Thanh	Overhead station, separate platform		
3	Thai Ha	Overhead station, separate platform		
4	Duong Lang	Overhead station, separate platform		
5	National University	Overhead station, separate platform		Transfer station with the No. 2 line
6	Vanh Dai 3	Overhead station, separate platform		
7	Thanh Xuan 3	Overhead station, separate platform		
8	Ha Dong Bus Terminal (former)	Overhead station, separate platform		
9	Ha Dong	Overhead station, separate platform		
10	La Khe	Overhead station, separate platform		
11	Van Khe	Overhead station, separate platform		
12	Yen Nghia Bus Terminal (Ha Dong new bus terminal)	Overhead station, separate platform (terminal)		Terminal

(The data are based on the fundamental design of the 2A Line. Details will be determined at a later stage.)

Appendix 4
Medium-term plan for operation of the related businesses

No.	Content	2016												2017	2018	2019	2020	Remarks
		1 st quarter			2 nd quarter			3 rd quarter			4 th quarter							
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
I	Advertisement																	
1.1	In-train advertising																	
	<i>Planning and approval</i>																	
	<i>Commission of implementation, management</i>																	
1.2	Inside-station advertising																	
1.2.1	<i>Preceding 3 stations (trial)</i>																	
	<i>Planning and approval</i>																	
	<i>Commission of implementation, management</i>																	
	<i>Verification</i>																	
1.2.2	All stations																	
	<i>Planning and approval</i>																	
	<i>Commission of implementation, management</i>																	
II	Kiosks (store)																	
	<i>Planning and approval</i>																	
	<i>Commission of implementation</i>																	
III	Lease of premises (infrastructure)																	
	<i>Planning and approval</i>																	
	<i>Development</i>																	

No.	Content	2016												2017	2018	2019	2020	Remarks
		1 st quarter			2 nd quarter			3 rd quarter			4 th quarter							
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
IV	Parking lot construction investment																	
	<i>Planning and approval</i>																	
	<i>Development</i>																	



Hanoi People's Committee



Japan International Cooperation Agency

ACTIVITY 6.5.1

Rule on titles of staffs relating to train operation

**Support Project to Strengthen the Capacity of Hanoi Urban Railway Regulator and
Establish an Operational Organization**

Practitioner : Nguyễn Văn Bằng

Support expert: Kohei Ushida

Hanoi, November 2015

Rule on titles of staffs relating to train operation

【Premise for thinking about this rule】

Regarding positions and titles mentioned in the rule, their names might be different depending on the organizational structure of Hanoi Metro Company and organizational structure of each OU. Besides, each OU may be different from others in grades, therefore, thinking about drafting working regime is based on the following table.

In the future, when the corresponding positions are decided by Hanoi Metro Company, this regulation will be revised in accordance with the titles accordingly.

		OCC staffs	On-board staffs	Station staffs	Rolling stock staffs	Civil work/track work maintenance staffs	Electrical area staffs
Hanoi Metro headquarters		Manager of train operation department		Manager of Sales and PR department	Manager of Rolling Stock department	Manager of Civil work/track work department	Manager of Electrical department
OU	Management	Head of OCC	Head of train crew office	Station Master	Head of rolling stock inspection yard	Head of Civil work/track work maintenance area	Head of Electrical area
		Deputy of OCC	Deputy-Head of train crew office	Station Master Assistanc e	Deputy-Head of rolling stock inspection yard	Deputy-Head of Civil work/track work maintenance	Deputy-Head of Electrical Area
		Control	Supervisor	Assistant	Supervisor	Supervisor	Supervisor
	Staff	Dispatcher	On-board staff	Station staff (signal staff)	Staff (Signal staff)	Staff (Staff relating to train operation)	Staff (Staff relating to train operation)

Chapter I. General rules

Article 1. Objective

This rule provides regulations on instruction and command system, and works of the staffs directly relating to train operation (hereinafter referred as "staff relating to train operation") of Hanoi Railway One Member Co., Ltd.

Article 2. Scope of adjustment, applicable object

1. Rules on obligations that shall be performed by organizations and individuals relating to urban railway operation in Hanoi.
2. Object of this Rule shall be organizations and individuals relating to the urban railway operation in Hanoi city managed by Hanoi Railway One Member LLC.

Article 3. Legal basis

- Law on Railway;
- Circular No. 05/2015/TT-BGTVT "Regulation on title standards for staff directly serving urban railway train operation";
- Circular No. 21/2015/TT-BGTVT "Regulation on rest time for employees undertaking special works in railway transport";

Chapter II. Train Operation Department

Section 1. General provisions

Article 4. Personnel of train operation department

In the company, staffing of train operation department shall be arranged as follows. OUs shall arrange staff for these positions, providing working regime necessary for staffs relating to train operation for handling operation timely.

1. Head quarter: Manager of Train Operation Department
2. OUs:
 - a. Persons of management level shall receive commands from the manager of train operation department to instruct and supervise staffs who are assigned to perform work, and be responsible for in-charge works.
 - b. Persons of staff level shall receive command from the persons of

management level to perform within the in-charge scope assigned by the head of the working place.

Section 2. Train operation department

Article 5. Manager of train operation department

The Manager of train operation department shall instruct and supervise his subordinate staffs, summarize works related to train operation, to ensure safety and works related to OCC management.

Section 3. OCC

Article 6. Development of working regime related to OCC

OUs shall stipulate working regime of OCC in accordance with this section.

Article 7. Head of OCC

1. When operation handling is performed based on operation rules of Hanoi Metro, OCC shall assign a head of OCC or a person in equivalent position to the head of OCC.
2. Working regime of the head of OCC shall be prescribed as follows: to receive command of the manager of train operation department; to direct and supervise his subordinate staffs; and take responsibility for works related to OCC.

Article 8. Persons of management level other than the head of OCC

1. The following content shall be prescribed: Persons of management level other than the head of OCC shall receive command of the head of OCC, direct and supervise their subordinate staffs and handle in-charge work assigned by the head of OCC.
2. Persons of management level shall be permanent in OCC.
3. The following content shall be prescribed: when the head of OCC is absent, a person of management level shall be on behalf to handle the works of the head of OCC within the in-charge work.

Article 9. Persons of staff level

1. It shall be prescribed that the persons of staff level shall receive command of the management level to perform works within their in-charge area assigned by the Head of OCC.
2. It shall be prescribed that: in case the person of management level is absent, a person of staff level shall be on behalf to deal with the work of the

management level within the in-charge work.

Section 4. Train crew office

Article 10. Development of working regime related to train crew office.
OU shall prescribe working regime of train crew office.

Article 11. Head of train crew office

1. When operation handling is performed based on operation rules of Hanoi Metro, train crew office shall assign a head of train crew office or a person in equivalent position.
2. Working regime of the head of the train crew office shall be prescribed as follows: to receive command of the manager of train operation department; to direct and supervise his subordinate staffs; and take responsibility for works related to train crew office.
3. Regarding operation adjustment, it shall be prescribed to obey the command of the Head of OCC.

Article 12. Persons of management level other than the head of train crew office

1. It shall be prescribed that: Persons of management level other than the head of train crew office shall receive command of the head of train crew office, direct and supervise their subordinate staffs and handle in-charge work assigned by the head of train crew office.
2. Persons of management level shall be permanent in train crew office.
3. The following content shall be prescribed that: when the head of train crew office is absent, a person of management level shall be on behalf to handle the works of the head of train crew office within the in-charge work scope.
4. It shall be prescribed that: Persons of management level shall have train driving license to drive trains, rolling stock when required.

Article 13. Persons of staff level in train crew office

1. It shall be prescribed that the persons of staff level shall receive command of the management level to perform works related to train operation and rolling stocks as well as enclosed works.
2. It shall be prescribed that: Staffs having certificate of Instructor is the position to instruct on-job-training staffs.
3. It shall be prescribed that: on-job-training staffs shall receive instructions of the Instructor Staff, to learn and grasp knowledge and necessary skills for train crew.
4. It shall be prescribed that when train is in the segment, receive instructions from safety support on-board staff or the head of OCC.

5. It shall be prescribed that when train is at station, receive instructions of the station master or the head of OCC.
6. It shall be prescribed that when rolling stock is in the inspection yard, receive instruction of the head of inspection yard.

Chapter III. Sales and Public Relation Department

Section 1. General Provisions

Article 14. Personnel of sales and public relation department (the staff relating to train operation)

Each OU shall arrange staff for this position, stipulate working regime necessary for the staff relating train operation to handle operation timely.

At the station:

1. The persons of the management level regarding to operation handling shall implement in accordance with operation rules of Hanoi Metro and receive command of the head of OCC, to direct and supervise the staffs relating train operation and take responsibility for the in-charge work scope related to operation handling.
2. The persons of staff level (Staff) shall receive commands from the persons of management level to perform works within the in-charge scope related to operation handling assigned by that head of the working area.

Section 2. Station

Article 15. Development of working regime related to station

OUs shall prescribe the working regime of staffs relating to train operation at the station in accordance with this section.

Article 16. Station Master

1. When operation handling is performed based on operation rules of Hanoi Metro, it is necessary to assign a station master or an equivalent position in the station
2. Working regime of the station master relating to operation handling shall be prescribed as follow: to direct and supervise subordinate staffs and to take responsibility for works related to operation handling at the station.
3. Regarding operation adjustment, it shall be prescribed to obey the command of the head of OCC.

Article 17. Persons of management level other than station master

1. It shall be prescribed that staffs other than station master shall receive command from the station master and handle works within the in-charge scope assigned by the station master.
2. Persons of management level shall be permanent at the station.
3. It shall be prescribed that when the station master is absent, a person of management level shall be on behalf to handle the works of the station master within the in-charge work scope.

Article 18. Persons of staff level at the station

It shall be prescribed that: Persons of staff level who undertake works related to operation handling shall receive commands and instructions from the persons of management level to perform works related to operation handling at the station and enclosed works.

Chapter IV. Rolling stock department

Section 1. General provision

Article 19. Personnel of rolling stock department (the staffs relating to operation)

OUs shall arrange staffs for the following positions, stipulate working regime necessary for the staffs relating train operation to handle operation timely.

Inspection yard:

1. Persons of management level: works related to operation handling of management level shall be compliant with operation rules of Hanoi Metro, and simultaneously receive instructions of the head of OCC to direct and supervise the staffs relating to operation and take responsibility for the in-charge work scope related to operation handling.
2. The persons of staff level (Staff) shall receive instructions of management level to perform works within the in-charge scope related to operation handling assigned by the head of that working area.

Section 2. Inspection yard

Article 20. Development of working regime related to inspection yard

OUs shall prescribe the working regime of staffs relating to train operation in the inspection yard in accordance with the content stipulated in this section.

Article 21. Head of inspection yard

1. When operation handling is performed based on operation rules of Hanoi Metro, it is necessary to assign a head of inspection yard or an equivalent position in the inspection yard.
2. Working regime of the head of inspection relating to operation handling shall be prescribed as follow: to direct and supervise subordinate staffs and to take responsibility for works related to operation handling in the inspection yard.
3. It shall be prescribed to obey command of the head of OCC for emergency measures when accident or disaster happens.

Article 22. Persons of management level in the inspection yard

1. It shall be prescribed that persons of management level (other than the head of inspection yard) shall receive the instructions of the head of inspection yard to direct and supervise subordinate staffs and handle works within the in-charge scope assigned by the head of inspection yards.
2. Persons of management level shall be permanent in the inspection yard.
3. It shall be prescribed that when the head of inspection yard is absent, a person of management level shall be on behalf to handle the works of the head of inspection yard within the in-charge work scope.

Article 23. Persons of staff level in the inspection yard

It shall be prescribed that persons of staff level who undertake works related to operation handling shall receive commands and instructions from the persons of management level to perform works related to operation handling in the inspection yard and enclosed works.

Chapter V. Civil work department

Section 1. General Provisions

Article 24. Personnel of the civil work department (the staffs relating to operation)

OUs shall arrange staffs for the following positions, stipulate working regime necessary for the staffs relating train operation to handle operation timely.

(Maintenance area of civil work department)

1. Persons of management level: works related to operation handling of management level shall be compliant with operation rules of Hanoi Metro, and simultaneously receive instructions of the head of OCC to direct and supervise the staffs relating to operation and take responsibility for the in-charge work scope related to operation handling.

2. The persons of staff level (Staff) shall receive instructions of management level to perform works within the in-charge scope related to operation handling assigned by the head of that working area.

Section 2. Maintenance area of civil work department

Article 25. Development of working regime related to area of civil work department

OUs shall prescribe the working regime of staffs relating to operation in the maintenance area of civil work department.

Article 26. Head of the area

1. When operation handling is performed based on operation rules of Hanoi Metro, it is necessary to assign a head maintenance area of civil work department or an equivalent position.
2. Working regime of the head of the area relating to operation handling shall be prescribed as follow: to direct and supervise subordinate staffs and to take responsibility for works related to train operation handling in that area.
3. It shall be prescribed to obey command of the head of OCC for emergency measures when accident or disaster happens.

Article 27. Persons of management level other than the head of the area

1. It shall be prescribed that persons of management level (other than the head of the area) shall receive the instructions of the head of the area to direct and supervise subordinate staffs and handle works within the in-charge scope assigned by the head of that area.
2. Persons of management level shall be permanent in that area.
3. It shall be prescribed that when the head of the area is absent, a person of management level shall be on behalf to handle the works of the head of the area within the in-charge work scope.

Article 28. Persons of staff level in the maintenance area of the civil work department

It shall be prescribed that: Persons of staff level who undertake works related to operation handling shall receive commands and instructions from the persons of management level to perform procedure and handling related to train operation rules of the area and carry out the enclosed works.

Chapter VI. Track department

Section 1. General provisions

Article 29. Personnel of the track department (the staffs relating to operation) OUs shall arrange staffs for the following positions, stipulate working regime necessary for them like the staffs relating to operation to handle operation timely. (Maintenance area of the track department)

1. Persons of management level: works related to operation handling of management level shall be compliant with operation rules of Hanoi Metro, and simultaneously receive instructions of the head of OCC to direct and supervise the staffs relating to operation and take responsibility for the in-charge work scope related to operation handling.
2. The persons of staff level shall receive instructions of management level to perform works within the in-charge scope related to operation handling assigned by the head of that working area.

Section 2. Maintenance area of the track department

Article 30. Development of working regime at the maintenance area of the track department

OUs shall prescribe the working regime of staffs relating to operation of the maintenance area of the track department.

Article 31. Head of the area

1. When operation handling is performed based on operation rules of Hanoi Metro, it is necessary to assign a head maintenance area of the track department or an equivalent position.
2. Working regime of the head of the area relating to operation handling shall be prescribed as follow: to direct and supervise subordinate staffs and to take responsibility for works related to operation handling in that area.
3. It shall be prescribed to obey command of the head of OCC for emergency measures when accident or disaster happens.

Article 32. Persons of management level other than the head of the area

1. It shall be prescribed that persons of management level (other than the head of the area) shall receive the command of the head of the area to direct and supervise subordinate staffs and handle works within the in-charge scope assigned by the head of that area.
2. Persons of management level shall be permanent in that area.
3. It shall be prescribed that when the head of the area is absent, a person of management level shall be on behalf to handle the works of the head of the

area within the in-charge work scope.

Article 33. Persons of staff level in the maintenance area of the track department. It shall be prescribed that: Persons of staff level who undertake works related to operation handling shall receive commands and instructions from the persons of management level to perform procedure and handling related to train operation rules of the area and carry out the enclosed works.

Chapter VII. Electrical department

Section 1. General Provisions

Article 34. Personnel of maintenance area under electrical department (the staffs relating to operation)

OUs shall arrange staffs for the following positions, stipulate working regime necessary for them like the staffs relating to operation to handle operation timely.

(Maintenance area of the electrical department)

1. Persons of management level: works related to operation handling of management level shall be compliant with operation rules of Hanoi Metro, and simultaneously receive instructions of the head of OCC to direct and supervise the staffs relating to operation and take responsibility for the in-charge work scope related to operation handling.
2. The persons of staff level shall receive instructions of management level to perform works within the in-charge scope related to operation handling assigned by the head of that working area.

Section 2. Maintenance area of the electrical department

Article 35. Development of working regime at the maintenance area of the electrical department

OUs shall prescribe the working regime of staffs relating to operation of the maintenance area of the electrical department.

Article 36. Head of the area

1. When operation handling is performed based on operation rules of Hanoi Metro, it is necessary to assign a head maintenance area of the electrical department or an equivalent position.
2. Working regime of the head of the area relating to operation handling shall be prescribed as follow: to direct and supervise subordinate staffs and to take responsibility for works related to train operation handling in that area.

3. It shall be prescribed to obey command of the head of OCC for emergency measures when accident or disaster happens.

Article 37. Persons of management level other than the head of the area

1. It shall be prescribed that persons of management level (other than the head of the area) shall receive the command of the head of the area to direct and supervise subordinate staffs and handle works within the in-charge scope assigned by the head of that area.
2. Persons of management level shall be permanent in that area.
3. It shall be prescribed that when the head of the area is absent, a person of management level shall be on behalf to handle the works of the head of the area within the in-charge work scope.

Article 38. Persons of staff level in the maintenance area of the electrical department.

It shall be prescribed that: Persons of staff level who undertake works related to train operation handling shall receive commands and instructions from the management level to perform procedure and handling related to train operation rules of the area and carry out the enclosed works

Chapter VIII. Implementation

Article 39. Responsibilities of units

1. Common Control Department – Head quarter of the company:
 - a. To advise the General Director when the contents of the rule need to be revised.
 - b. To check, supervise and implement train operations of units and divisions of the Lines in accordance with approval plan and regulations and process.
2. Units implement tasks related to train operation
 - a. All staffs that perform works related to train operation shall comply with this rule and take responsibility to ensure safety for passengers and trains.
 - b. To make plan for implementation of tasks of the unit based on the approved train operation plan to ensure train operation safety and effectiveness.

Article 40. Procedure of amendment and issuance of the rule

Amendment and issuance of the rule of Hanoi Railway One Member LLC shall be decided by the General Director.



Hanoi People's Committee



Japan International Cooperation Agency

ACTIVITY 6.5.1

FUNCTION AND RESPONSIBILITY OF

TRAIN OPERATION DEPARTMENT (HEAD QUARTER)

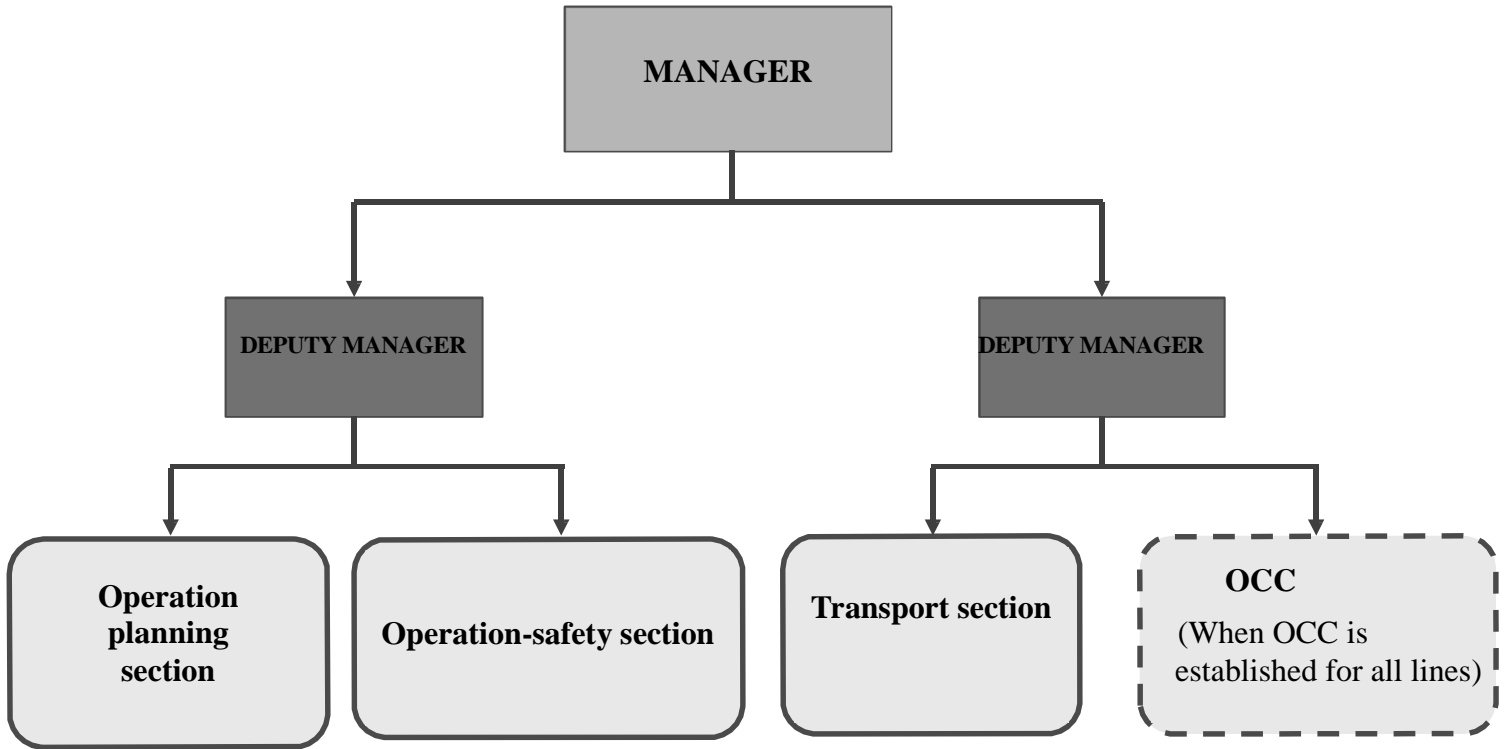
**Support Project to Strengthen the Capacity of Hanoi Urban Railway Regulator
and Establish an Operational Organization**

Practitioner : Nguyễn Văn Bằng

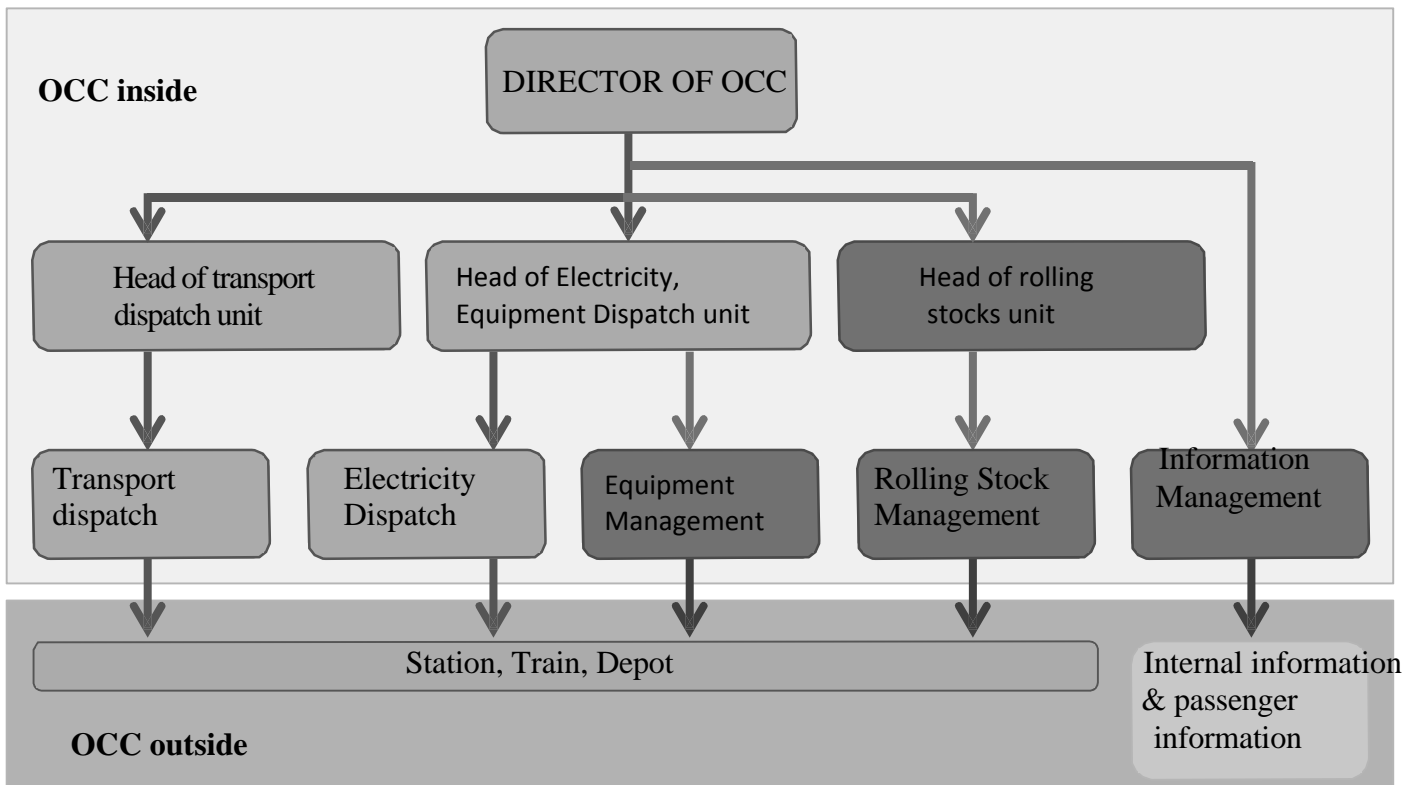
Support expert: Kohei Ushida

Hanoi, November 2015

1. ORGANIZATION CHART OF TRAIN OPERATION DEPARTMENT (HEAD QUARTER)



2. ORGANIZATION CHART OF OCC



FUNCTION AND RESPONSIBILITY OF TRAIN OPERATION DEPARTMENT (HEAD QUARTER)

I. Function:

To advise and implement functions of dispatching, train operation management, assurance of safety, punctuality and effectiveness in operation.

II. Responsibility:

A. Operation planning section

1. To develop train operation plan for all lines.
2. To investigate study and improve train operation plan for all lines.
3. To develop training plan, training process; to supervise and examine for train drivers and operation staff.
4. To make plan for transport facility and equipment.

B. Transport section

5. To perform works related to regulation on train driving and train use.
6. To dispatch, rotate operation staffs among lines.
7. To notice and report, etc. to the relevant agencies regarding responsibility under competence.
8. To directly manage, control and evaluate dispatch centers of the lines.
9. To study on formation of common control center (OCC) for all lines.

C. Operation-safety section

10. To supervise, evaluate and manage operation performed by site operation units.
11. To check suitability and characteristics of staffs relating to train drivers.
12. To develop manuals of rules/standards on train operation for operation staffs.
13. To develop plan for new setting, improvement of security equipment (ATC: Automatic Train Control) to prevent incidents.
14. To perform works of prevention, investigation and report of natural disaster, railway incidents...

Function and responsibility of Train driver management office under site operation unit

I) Function:

Train driver management office shall take direct responsibility to perform train operation, comply with train operation diagram and rules, procedure developed by Hanoi Metro.

II) Responsibility:

A. Train crew (Train driver, Safety assistance staff)

1. To directly perform train operation.
2. To maintain train operation and ensure order on trains.
3. To perform works related to prevention, investigation and reports on railway problems and natural disaster.
4. To perform works related to supervise on-train equipment.

B. Supervision, assistance unit

5. To manage directly train crew.
6. To coordinate in development of human resource plan and training plan for human resource of site operation division.
7. To directly handle urgently when troubles or natural disaster happen.
8. To adjust train operation schedule (in accordance with instructions from OCC or in case of operation trouble or natural disaster...)
9. To perform work related to instructions of transport, electricity, equipment.
10. To report and provide information to Head quarter regarding train operation troubles and to coordinate with Head quarter and related units to provide countermeasure in case that troubles are out of control.
11. To perform edition and archive of related documents and tables.
12. To study and propose operation plan and alternative to improve operation plan.



Hanoi People's Committee



Japan International Cooperation Agency

ACTIVITY 6.5.3

Hanoi Metro driver training rules

**Support Project to Strengthen the Capacity of Hanoi Urban Railway Regulator
and Establish an Operational Organization**

Practitioner : Nguyễn Văn Bằng

Support expert: Kohei Ushida

Hanoi, November 2015

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Article 8. Procedure of amendment and replacement 3

Hanoi Metro driver training rules

Chapter1. General provisions

Article 1. Objectives

This rule is promulgated to aim at stipulating contents of training and necessary skills for train drivers as well as ensuring transport safety.

Article 2: Scope and object of application

1. This rule specifies the contents related to the management of train drivers in Hanoi Railway One Member LLC, based on Circular No. ... / 2015/TT-BGTVT "regulations on management of examination, new grant, re-grant and withdrawal of train driving license"
2. Scope of application of this rule is organizations, individuals relating to operation of urban railways in Hanoi under management of Hanoi Railway One Member LLC.

Article 3. Legal basis

This rule shall be based on the contents prescribed in:

1. Law on railway No. 35/2005/QH11
2. Circular .../2015/TT-BGTVT "regulations on management of examination, new grant, re-grant and withdrawal of train driving license"
3. Circular No. 05/2015/TT-BGTVT "Regulations on standards of titles of staffs directly serving urban railway train operation ";

Chapter 2 Recruitment examination

Article 4. Qualification for taking examination

Those persons who are deemed to be qualified to take examination shall satisfy requirements prescribed in point a) ~ c) clause 2, Article 4 of “Circular provides regulations on working regimes of staffs directly serving urban railway train operation”.

Article 5. Recruitment examination

- 1 Recruitment examination shall include examination round 1 and examination round 2 to implement the following examination contents.

(1) Round 1

Exam item	Person in charge	Standards for qualification
Physical test	Specialized doctors	Meet health conditions prescribed by the

		Ministry of Health
Mental function test	Persons in charge of capability test from relevant agencies	Meet standards prescribed in the Circular

(2) Round 2

Exam item	Person in charge	Standard for qualification
Theoretical examination	In-charge person of related departments	General evaluation in combination with results of oral examination
Oral examination	In-charge person of related departments	General evaluation in combination with results of theoretical examination

- 2 Those who do not pass the round 1 shall be not allowed to participated in Round 2.

Article 6. Conditions to attend in training course

People who are able to attend learning course as, on-job-trainees, are those who pass the examinations prescribed in Article 6, and shall be allowed to enter the agency for training as on-job-training drivers.

Chapter 3 Other provisions

Article 7. Responsibilities of OUs

1. OUs shall be responsible for making annual staffing schedule for train drivers and report to the Head Quarter of the Company.

Article 8. Procedure of amendment and replacement

Procedure of amendment and replacement of this rule shall be ratified by the General Director of Hanoi Railway One Member LLC.



Hanoi People's Committee



Japan International Cooperation Agency

ACTIVITY 6.5.3

RULES ON TRAIN DRIVER MANAGEMENT

**Support Project to Strengthen the Capacity of Hanoi Urban Railway Regulator
and Establish an Operational Organization**

Practitioner : Nguyễn Văn Bằng

Support expert: Kohei Ushida

Hanoi, November 2015

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RULES ON TRAIN DRIVER MANAGEMENT

Chapter I. General Provisions

Article 1: Objectives

This rule is aimed at maintaining necessary knowledge and skills and ensuring safety for drivers in operation units of Hanoi Railway One Member LLC.

Article 2: Scope and object of application

1. This rule specifies the contents related to the management of train drivers in Hanoi Railway One Member LLC, based on Circular No. 05/2015 / TT-BGTVT "Regulations on Standards of titles of staffs directly serving urban railway train operation" and Circular No. ... / 2015/TT-BGTVT "regulations on management of examination, new grant, re-grant and withdrawal of train driving license"
2. Scope of application of this rule is organizations, individuals relating to operation of urban railways in Hanoi under management of Hanoi Railway One Member LLC.

Article 3. Legal basis

This rule shall be based on the contents prescribed in:

1. Law on railway No. 35/2005/QH11
2. Circular .../2015/TT-BGTVT "regulations on management of examination, new grant, re-grant and withdrawal of train driving license"
3. Circular No. 05/2015/TT-BGTVT "Regulations on standards of titles of staffs directly serving urban railway train operation ";
4. Circular No. 31/2015/TT-BGTVT “Regulations on resting time for employees doing special work in railway transport”;

Chapter II. Management of trainings

Article 4: Follow-up training

1. OUs shall carry out follow-up training within 1 year for drivers who are newly granted license in accordance with Circular No. ... / 2015/TT-BGTVT "*regulations on management of examination, new grant, re-grant and withdrawal of train driving license*", and shall endeavor to enable drivers to grasp necessary knowledge and skills.
2. After confirming the results of the above training, for those cases whose knowledge and skills are not qualified enough, they shall not be arranged to work on train if further necessary training is not conducted.

Article 5: Periodical training

1. OUs must perform periodical training for train drivers, and make efforts to maintain the knowledge and skills required for train drivers.
2. Regarding the training stated in the preceding paragraph, annual training plan must be made and managed so that all subjected train drivers participate in training courses.
3. Periodical training includes the following contents:
 - a. Regulations of laws, rules on train operation
 - b. Usage of rolling stocks and handling in case of breakdown
 - c. Handling of accidents

Article 6: Training when necessary

1. OUs must perform driving training when necessary and make efforts to maintain the knowledge and skills required for train drivers.
2. The training stated in the preceding paragraph is not in the annual training plan. It must be managed so that all subjected train drivers participate in the training course.
3. "Training when necessary" is performed in the following cases:
 - a. Where rules and way of usage are changed, it is necessary to inform all related persons and they should understand.
 - b. Where it is necessary to inform newly issued notice to all related persons and need them to understand.
 - c. In addition, where there are contents that need to be notified specially, it is necessary to inform all related persons and need them to understand.

Article 7: Training for transferred drivers

1. OUs must perform training necessary for drivers transferred from other OUs.
2. After implementing the training prescribed in above paragraph and confirming that these drivers have required knowledge and skills for driving train on the line that the drivers were transferred to, they the drivers shall be allowed to work independently on trains.

Article 8: Management of training implementation situation

1. OUs must make records on implementation situation of training types stated in from Article 4 to Article 7.
2. OUs shall be responsible to manage these records to be promptly submitted to the head quarter of Hanoi Metro and management agencies when requested.
3. OU must maintain these records within at least 10 years.

Chapter III. Daily management

Article 9: Management of physical and spiritual condition of train drivers

1. OUs shall be responsible to manage conditions of physical and spiritual conditions of their drivers. Any cases that are not satisfied the condition for working on train, these drivers shall not be allowed to work on train.
2. Regarding physical and spiritual condition of train drivers, in addition to the health conditions prescribed by Ministry of Health in Circular No. 05/2015/TT-BGTVT "Regulations on Standards of titles of staffs directly serving urban railway train operation", it is also necessary to confirm if there are anything abnormal or not based on visual check and declaration of the driver before onboarding to work.

Article10: Management before drivers onboard to work

1. OUs shall be responsible to confirm that whether or not their drivers grasp exactly rules, notification, notices necessary for safe train operation before getting on train.
2. OUs shall be responsible to confirm health conditions of their drivers they perform work related to train operation and to see whether any health problems that affects work performance or not.

Article 11: Management of driver's work situation

1. OUs must periodically confirm whether their drivers perform reliably and safely appropriate works prescribed in the order or not.
2. In case drivers are confirmed not to perform properly prescribed works, OU shall be responsible to direct so as these drivers can perform work appropriately.
3. OU shall be responsible to make records of work performance situation of drivers and contents directed to drivers and to manage them so as to enable to submit the head quarter of Hanoi Metro and management agency when requested.

Article 12: Management of driver's work performance situation

1. OUs shall manage situation of working days and working hours of drivers
2. OUs shall be responsible to manage so as the drivers do not exceed the standards specified in relevant laws, rules etc.

Article 13: Management of train driving license

1. OUs shall be responsible to appropriately manage train driving license of the

- drivers under their management so as not to violate conditions prescribed in Circular No. ... /2005/TT-BGTVT" regulations on management of examination, new grant, re-grant and withdrawal of train driving license".
2. Conditions need to manage prescribed in the Circular are as follows.
 - a. Validity duration of the license has not expired yet.
 - b. If any person who does not undertake titles of drivers from 12 months or longer wants to re-undertake the title of train drivers, he/she must implement procedure for examination and granting new driving license under the provisions of the Circular.
 - c. Items indicated in the driving license must be valid for the urban railway line and train in which drivers work actually.
 - d. In case any driver has any changes regarding the items in the license, that driver shall conduct procedure to change in accordance with the circular.
 3. OUs shall be responsible to manage so that train drivers who do not have appropriate license shall be not allowed to work on the train.

Chapter IV. Implementation

Article 14: Responsibilities of OUs

1. OUs shall satisfy the provisions of this rule.
2. OUs shall take obligation to report the management situation of train drivers to the Company or the regulator if requested.

Article 15: Procedure of amendment and replacement

Procedure of amendment and replacement shall be ratified by the General Director of Hanoi Railway One Member LLC.



Hanoi People's Committee



Japan International Cooperation Agency

ROLLING STOCK MAINTENANCE RULES

**TA PROJECT TO STRENGTHEN THE CAPACITY OF REGULATOR AND TO ESTABLISH OPERATION
AND MAINTENANCE COMPANY OF METROPOLITAN RAILWAY LINES IN HANOI CITY**

Performer: Ngo Van Bang

JICA TA Expert: Kurihara

Hanoi, 10/2015

Hanoi railway one member limited liability company

ROLLING STOCK MAINTENANCE RULES

No. : QĐK-.....

Issued times :.....

Date :.....

Hanoi railway one member limited liability company	ROLLING STOCK MAINTENANCE RULES	No. : QT-..... Issued times:.... Date :.....
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ROLLING STOCK MAINTENANCE RULES

(Promulgated under Decision no. /201 /QĐ- dated... 2015 by Hanoi Metro Company)

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- Article 2) Scope of application and applicable objects
- Article 3) Definitions
- Article 4) Legal basis, reference
- Article 5) Responsibility of implementation
- Article 6) Comply with rules on accidents and incidents
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I) The contents fo periodic maitenance for Line 2(Based on reference in Tokyo Metro)

II) The contents of periodic maitenance for Line 2A

CHAPTER I: GENERAL PROVISIONS

Article 1) Objectives

Rules on maintenance of rolling stock are requirements for maintenance works, in order to guarantee the quality, environmental protection and maintenance of technical performance of rolling stock, so that the maintenance shall ensure quality standards for rolling stock, stable operation of equipment for transport and safety during operation.

Article 2) Scope of application and applicable objects

- 1) The rules stipulates on requirements of management and implement for maintenance of rolling stock, responsibilities of organizations, individuals relating to operation of rolling stock in Hanoi Metro Company.
- 2) The rules are applicable for organizations, individuals relating to management, operation and maintenance of rolling stock in Hanoi Metro Company. The rules shall be in compliant with national rule, when national rule is revised and it causes gaps between national rule and this rules.

Article 3) Definitions

1. Definitions

- a. Rolling stock maintenance is a set of works in order to ensure normal and safe operation during the period of use which was stipulated through designing.
- b. Procedures of rolling stock maintenance include regulations on procedures, contents and instructions for carrying out inspection, repair and maintenance.
- c. Inspection of rolling stock: evaluate current condition of rolling stock inspected visually or with professional equipment to detect damages of rolling stock, and repairing it when necessary.
- d. Maintenance includes activities (following up, repairing small failures, maintaining installed equipment) which are carried out periodically to maintain rolling stock in normal operation status following design requirements.
- e. Repair means activities to deal with failures in rolling stock which are detected during operation, in order to ensure normal and safe operation.
- f. Technical standards: include regulations on technical specification and requirements for the procedure of rolling stock inspection.
- g. Measurement: means determining value of physical quantities on rolling stock, to serve as a basis for comparison with technical requirements for rolling stock.

- h. Detection: means a method of inspection without disassembling object, aiming at checking cracks, defects by ultrasonic method or electromagnetic method, etc. for parts of rolling stock.
- i. Replacement: means a change its function, structure or technical specifications different from original design for a major equipment such as electric motor for traction, bogie, brake systems, coupler and etc.
- j. Visual inspection: means checking failure and operating conditions of equipment by the senses or direct contact.
- k. Maintenance period: the period between two consecutive periodic rolling stock maintenance.
- l. Budget for rolling stock maintenance: the cost for rolling stock maintenance which is made with work volume of implementation plans, unit price and standard.
- m. Maintenance plans: a set of plans which include HR plans, work plans (inspection, maintenance, repair, replace, purchasing new train, etc.) and budget plans in order to complete maintenance work.

2. Abbreviation

- n. Công ty TNHH MTV: one member limited liability company
- o. GCH: bogie
- p. KGCH: bogie frame
- q. SIV: static inverter
- r. ATO: automatic train operation

Article 4) Legal basis, reference

1) Legal basis:

- Railway Law no. 35/2005/GH11
- Circular No. 02/2009 by MOT, Circular No. 36/2011 by MOT and other related regulations: Regulations on inspection of quality, technical safety and environmental protection for railway vehicles

2) Reference:

- General requirements for operation and maintenance of urban railway (Draft).
- Circular No.20/2013/TT-BGTVT dated 16/08/2013 on the management and maintenance of railway works
- Circular No.05/2015/TT-BGTVT dated 30/03/2015 on the staff positions who concerns directly for operation of urban railways
- Basic design of line 2a (Cat Linh - Ha Dong)
- Basic Design of line 3 (Nhon – Hanoi)
- Basic Design of line 2 (Nam Thang Long - Tran Hung Dao)

- Technical requirements of rolling stock of line 2A, line 3
- Maintenance rules of rolling stock in Tokyo Metro
- Maintenance technology of rolling stock of line 2A
- Training plans and materials for maintenance staff of line 2A
- Decree No.114/2004, 46/2015/ND-CP dated 05/12/2015 on the management and maintenance of quality of construction works
- Circular No.20/2013/TT-BGTVT dated 08/1/2013 on the management and maintenance of railway works
- Regulation No.08/2011 on the rail operators
- Regulation No.08/2015 on the rail operators
- Procedure of small repair and overhaul of passenger carriages in Vietnam Railway

Article 5) Responsibility of implementation

- 1) The Director General or a person authorized approve, revise or supplement the content of this rules.
- 2) Maintenance management division in HQs takes the lead in advising in revise and supplement of this rules.
- 3) Maintenance implement division (Maintenance Center) follows rules, report contents to be revised and supplemented to complete this rules.

Article 6) Comply with rules on accidents and incidents

Activities to restore train after accidents, incidents, disasters shall need to comply with Government and Company's rules on solutions for incidents, accidents, disasters.

Article 7) Location of maintenance

- 1) The maintenance of rolling stock shall be performed in the unit which has sufficient facilities and engineering (means and personnel), meets requirements of environmental protection of railway vehicles and meets requirements of quality of inspection and technical safety for maintenance work of rolling stock.
- 2) The place for each type of maintenance shall be separated specifically.
- 3) For the special equipment to be used in an emergency, they shall be placed in a separated area with clear instructions.
- 4) Location of maintenance shall be clean and tidy.

Article 8) Requirements for maintenance of rolling stock

1. Rolling stock and parts to be put into operation shall be maintained regularly in compliant with rules.
2. Rolling stock maintenance should be carried out in compliant with approved procedure of rolling stock maintenance and the other related rules.
3. Rolling stock maintenance shall ensure safety of human being and assets.

Article 9) Requirements for maintenance personnel

9.1 General requirements

1. Maintenance personnel should have specific certificates or qualifications matching titles granted by educational institutions, and should meet specific standards of knowledge and skills for the job title as prescribed. Each maintenance unit has responsibility for preparing specific requirements for each job title based on technical maintenance rules and technical training plans of each lines.
2. Maintenance personnel should qualify health requirements prescribed by the Ministry of Health at periodic health check.
3. For new maintenance personnel who will carry out maintenance,
 - a) There is a probationary period which is stipulated with company rules regarding probationary period.
 - b) Passing written test and skill test as required by the company.
 - c) Being trained on safety for the assigned work.
 - d) After training, maintenance personnel shall meet the work requirements for assigned work. If the knowledge, skills and safety which are required for maintenance work are not sufficient, carrying out maintenance work shall not be allowed.
4. Head of Maintenance implement division shall not assign work to personnel who carries out rolling stock maintenance directly until confirming ability, skills and knowledge which are required for carrying out assigned work. For driver in charge of operating trains in depot, the amount of alcohol shall not exceed 80 milligrams / 100 milliliters of blood or 40 milligrams / 1 liter breathing air at alcohol test.
5. Head of group in Maintenance implement division has responsibility for inspecting, monitoring, training, improving ability of maintenance personnel.
6. Maintenance personnel of rolling stock carries out maintenance in compliant with plans, rules, procedures and instructions of rolling stock maintenance, ensuring equipment and parts of rolling stock operates accurately and safely.

7. When accident or failure of rolling stock equipment are found during periodic inspection or patrol, assigned personnel should repair or restore urgently. If it can not be restored, they should report circumstances to senior personnel quickly to take measures.
8. For maintenance personnel who operates train in depot, they shall meet requirements for operating train in depot surely.
9. During carrying out maintenance, maintenance personnel shall be equipped protective tools such as cap, work cloth, glove, etc.

9.2 Specific requirements

- 1) Head of Maintenance center has overall management responsibility for all work in the center, and instructs maintenance work to the personnel in the center. The person also has responsibility for all work such as safe production, emergency inspection and repair, breeding culture, etc. Thus, head of the Center shall have the following conditions:
 - Holding a university degree or above, and holding specialized knowledge and experience in management
 - Understanding related legislation, and well in complying organization rules.
 - Holding ability of learning, creativeness and communication with outside people, and holding sufficient ability of making decision.
 - Meeting general requirements listed above in 9.1.
- 2) Technical manager who has responsibility for technical aspects related to equipment, and who has responsibility for dealing with failure and taking measures for restoring emergency failure. Thus, technical manager shall have the following conditions:
 - Holding specialized knowledge about equipment and system management. Understanding technical rules, scientific standards and measures for troubleshooting and dealing with emergencies.
 - Meeting general requirements listed above in 9.1.

Chapter II: RULES ON ROLLING STOCK MAINTENANCE

Article 10) Types of maintenance

- 1) Types of maintenance
 - a. Preventive maintenance
 - Periodic maintenance: carrying out periodically in accordance with time or running Km

- Condition-based maintenance: inspecting operating condition of equipment, diagnosing and detecting tendency of functional deterioration, then identifying failures and defects through inspection, test or measurement.
 - b. Corrective maintenance
 - Corrective maintenance: after finding failure, restoring function of equipment and parts in order to operate in service.
- 2) Specific types of maintenance
- a. Daily maintenance (Inspection before operation): It is carried out at depot or on operation line by maintenance personnel or driver before train enters operation. Car body, bogie, running equipment, traction equipment, door, lighting, fire extinguisher and emergency door are inspected visually. And function of driver's cabin, lighting, wiper, whistle, braking system and door controlling system are also inspected.
 - b. Regular maintenance: It is carried out at Inspection yard. The aim of this maintenance is to inspect function of equipment, technical and maintenance condition of rolling stock without detaching equipment from rolling stock. (Collector shoe, connecting rod, air conditioner, converter, underfloor equipment, coupler and train identification system are inspected)
 - c. Technical maintenance (Inspection of conditions and functions): It is carried out at Inspection yard without detaching equipment from rolling stock. In this maintenance, condition and function of major equipment, such as bogie, traction equipment, main motor, control equipment, air conditioner, car body, signal equipment, etc., are inspected. And, condition of consumable parts, such as brake and pantograph, are inspected.
 - d. Intermediate overhaul: It is carried out at Workshop after detaching equipment from rolling stock. In this maintenance, almost all of major equipment, such as main motor, bogie and etc., are inspected, maintained and repaired. Then some parts are repaired and replaced, finally system check is carried out.
 - e. Overhaul: It is carried out at Workshop after detaching equipment from rolling stock. In this maintenance, equipment are inspected, repaired and then restored rolling stock so as to meet original requirements of technical specification. Major equipment, such as bogie, main motor, brake system, control system, train identification system, etc. are inspected and replaced.
 - f. Additional maintenance: Additional inspection, maintenance and repair are carried out if condition or technical quality of rolling stock may not meet requirements for safety operation or service operation, or if failure or accident occurs during operation or periodic maintenance.
 - g. Washing rolling stock: Washing rolling stock is carried out with rolling stock washing machine, and cleaning inside and outside of rolling stock. The cleaning of rolling stock may be required if there is abnormal incidents caused by natural disasters or accidents. Maintenance implement

division (Center) has responsibility for prescribing washing period for each line so as to ensure requirements of service during operation.

- h. Wheel grinding: Wheel grinding is carried out with wheel lathe to ensure technical requirements of the wheel and operating conditions. Maintenance implement division (Center) has responsibility for prescribing wheel grinding plans so as to ensure technical requirements for operation based on actual condition of operation and on procedure which were provided by manufacturer.
- i. Replacement and renovation of rolling stock: It is carried out to ensure normal operation until service life of rolling stock. Maintenance implement division (Center) considers plans of replacement and renovation of rolling stock based on specifications of each line. Replacement and renovation of rolling stock is carried out at the middle of service life of rolling stock.

Article 11) Period of periodic maintenance

- 1) The period of periodic maintenance under Article 10 Section 2 (b, c, d, and e) are compliant with requirements of the maintenance period in accordance with time or running km. The period of maintenance is whichever comes first based on maintenance procedure of each line.
- 2) In case of the rolling stock whose operation is suspended, suspended period shall not be counted in the calculation.
- 3) The maintenance period for 3 urban railways are as follows, (Referred from maintenance technology of Line 2A, basic design of Line 2 and Line 3)

Line	Type of maintenance	Period based on running km (10,000 km)	Period based on time
Line 2A	Overhaul	120	10 year
	Intermediate Overhaul	60	5 year
	Technical	15	1 year
	Monthly (regular)	1.2	1 month
Line 2	Overhaul		8 year
	Intermediate Overhaul	60	4 year
	Technical		3 month
	Monthly (regular)		10 day
Line 3	Overhaul		8 year
	Intermediate Overhaul		4 year
	Technical		45 day
	Monthly (regular)		15 day

Article 12) Base date

- 1) The period is calculated starting from the next day of when the previous maintenance was finished. The date is called base date.

- 2) The head of Maintenance center should supervise in setting and managing base date for all rolling stock and equipment which are in the range of Maintenance center.

Article 13) Rules on items, contents and methods of maintenance

1. Maintenance center has responsibility for carrying out items and contents of inspection, maintenance and repair in accordance with maintenance procedure based on maintenance technology for each line.
2. The procedures, contents and method of periodic maintenance for each operation line shall be approved by the Director General before entry into force.
3. Items, contents and methods of each types of maintenance for each lines are shown in appendix 1.

Article 14) Patrol - Inspection of train inside

1. Patrol is important and mandatory to ensure safety during train operation. Maintenance center should assign maintenance personnel for dealing with accidents and for patrolling operating train.
2. During patrol, grasping change in circumstance and others which will affect equipment, then taking measures for restoration and treatment promptly.
3. The results of patrol shall be recorded in a document.
4. During patrol if maintenance personnel finds signs of abnormality, they shall deal with them promptly, or shall report the circumstance to senior personnel to get instruction of treatment.

Article 15) Rules on additional maintenance

- 1) Additional maintenance is carried out at the case of followings;
 - a. If a quality and condition of rolling stock doesn't ensure operation safety and passenger service conditions.
 - b. If an accident occurs.
 - c. If newly purchased rolling stock will be operated for the first time.
 - d. After suspended operation, if operation of rolling stock will be resumed.
 - e. If an additional maintenance is required for some reason.
- 2) If the quality and condition of rolling stock doesn't ensure operation safety and passenger service conditions, Maintenance implement division (Center) should inspect rolling stock, then reporting to HQs.

Article 16) Cleaning and checking cracks, defects on parts

- 1) In Intermediate overhaul and overhaul, equipment should be disassembled and cleaned before inspection, maintenance and repair to meet technical requirements.
- 2) In Intermediate overhaul and Overhaul, if there are parts unnecessary for checking by ultrasonic method, other method of inspection can be adopted (such as electromagnetic), but the quality of parts shall be still guaranteed.
- 3) Parts after being checked and testing of cracks shall be marked on as already checked. The use of parts can be permitted, only if the quality is guaranteed. The organization in charge of repair has responsibility for guaranteeing the quality.

Article 17) Requirements of inspection of Bogie frame

- 1) The inspection to detect cracks on Bogie frame should be carried out in Intermediate overhaul and Overhaul.
- 2) The inspection method, for detecting cracks on Bogie frame by ultrasonic or electromagnetic, should follow maintenance procedure for each line.

Article 18) Requirements of inspection of Wheel and axle

- 1) The inspection to detect cracks on Wheel and axle should be carried out in Intermediate overhaul and Overhaul. The inspection method for Wheel and axle should follow maintenance procedure for each line in technical aspects.
- 2) Static wheel load should be measured directly, and difference between the measured value and average wheel load should be evaluated at the case of followings;
 - a. If Intermediate overhaul or Overhaul is carried out
 - b. If repair which affects wheel load imbalance is carried out
 - c. If management by measuring wheel load is required for some reason.
 - d. Imbalance of wheel load is calculated as follow:

$$R \text{ (Ratio)} = 1 - 2 * P1 / (P1 + P2)$$
 P1, P2: loads on two wheels.
 The value of wheel load imbalance (R(Ratio)) should meet requirements of technical procedure.
 - e. The length between inside of two wheels, and wheel diameter shall meet technical requirements.

Article 19) Requirements on inspection of Brake system

1. Types of urban railways rolling stock Brake system are as follows;
 - Electric brake: Regenerative brake, Rheostatic braking

- Mechanical brake: Electric command brake equipment (Disk brake, Unit brake)
 - Electromagnetic brake
2. The check of failure, wear, deformation and air leakage shall be carried out in all types of maintenance in accordance with each maintenance level to ensure normal operation at all brake mode (normal brake, emergency brake, etc.) as requested by technical requirements. The method of test should follow maintenance rules for each line.

Article 20) Requirements of inspection of Current collection device (Collector shoe, Pantograph), Main motor

1. Current collector shoe and Pantograph is one of the current collection devices. Current collection device shall be checked in all types of maintenance. The check of failure, deformation, melting and condition of installation are carried out, and confirming thickness of current collecting parts whether they follow technical requirements for each line.
2. Main motor (Rotor, Stator): In Intermediate overhaul and Overhaul, the check of failure, wear, insulation, deformation and condition of installation are carried out, then ensuring normal operation with designed power.
3. Specific contents of checking, requirements for Current collection device and main motor should follow maintenance rules for each line.

Article 21) Requirements of inspection of Cab signal equipment

1. Cab signal equipment, including receiving coil, antenna, etc., shall be checked in all types of periodic maintenance. The check of failure and condition of installation should be carried out in accordance with each maintenance level based on maintenance rules.
2. Cab signal equipment shall meet technical requirements, such as processing time from receiving data to terminating process, failure detecting(if it exists), the time until emergency brake is work and etc.

Article 22) Requirements of inspection of Spring and Damper

1. Spring and damper are inspected about damage, deformation, crack, oil leakage, air leakage and condition of installation.
2. Spring should follow rules prescribed by manufacturer regarding crack, height, height difference and flexibility.
3. The specific requirements regarding inspection of Spring and Damper should be compliant with maintenance procedure for each maintenance based on technology from manufacturer.

Article 23) Requirements of inspection of Coupler

1. Coupler is inspected about damage, condition of installation, air leakage and insulation to ensure stable operation.
2. Coupler should have well balanced. The height of coupler should meet design standard from manufacturer.
3. The specific requirements regarding inspection of Coupler should be compliant with maintenance procedure for each maintenance based on technology from manufacturer.

Article 24) Requirements of inspection of Control circuit equipment

1. Regarding Control circuit equipment, master controller, electric equipment, reactor, transformer, switch and relay should be inspected in all types of periodic maintenance.
2. The check of damage, deformation, change of color and condition of installation should be carried out to ensure normal operation as requested by design requirements.
3. The specific requirements regarding inspection of Control circuit equipment should be compliant with maintenance procedure for each maintenance based on technology from manufacturer.

Article 25) Requirements of inspection of Gear box

1. Gear box, coupling, grounding device and tachometer generator should be inspected in all types of periodic maintenance.
2. The check of damage, deformation, oil leakage and condition of installation should be carried out to ensure normal operation as requested by design requirements.
3. The specific requirements regarding inspection of Gear box should be compliant with maintenance procedure for each maintenance based on technology from manufacturer.

Article 26) Requirements of inspection of Signage systems and Passenger information

1. The check of damage, condition of installation and function during operation should be carried out to ensure normal operation in a state when electricity of rolling stock is on.
2. The condition of installation of command button, microphone and speaker is good, and these device are running normally
3. The display of LEDs, installed inside and outside, illuminate brightly and clearly, and display characters completely and correctly.

4. The specific requirements regarding inspection of the equipment should be compliant with maintenance procedure for each maintenance based on technology from manufacturer.

Article 27) Requirements of inspection of other major system

- Car body and attached equipment, cab room
- Door controlling system
- Air conditioning system
- Lighting system
- Auxiliary power system

These systems should be inspected and maintained in all types of periodic maintenance to ensure normal operation as requested by design requirements. The specific requirements regarding inspection item, inspection method and specification for these systems should follow maintenance procedures from manufacturer.

Article 28) Requirements of carbody waterproof

1. After maintenance of Intermediate overhaul and Overhaul, it is necessary to test carbody waterproof by pouring and spraying water by special testing water truss to ensure car is not water spread in.
2. When water pouring is carried out, doors are tightly closed and ventilation covers are in normal working condition.

Article 29) Requirements of insulation inspection

1. It is necessary to confirm degree of electric insulation for rolling stock wiring including broadcasting wire, and to confirm durability of insulating materials based on rules which shows safety use of electricity in accordance with specification of design. Confirming degree of electric insulation and durability of insulating materials are carried out at following cases;
 - After purchasing new rolling stock
 - After Technical maintenance, Intermediate overhaul and Overhaul
 - After repairing which includes change in electric circuit or wiring
2. In rolling stock technical maintenance, personnel can access high voltage part only after electricity of rolling stock shutdown and confirming safety.

Article 30) Requirements of safety equipment

1. Driver's sleep prevention device, speed recorder and speedometer shall be as same as types as in specification, be installed correctly, and run well.
2. Fire extinguisher shall be as same as types as in specification, be installed enough amount as specified, and not exceed expiration date.
3. Fire alarm system and emergency equipment shall run well.
4. Required sign, information and instructions shall be installed in rolling stock.

CHAPTER III: RULES ON REPAIR AND REPLACE

Article 31) Rules on replacement of equipment materials and parts

When materials and parts of rolling stock equipment is replaced, it is necessary to ensure following requirements;

1. In accordance with the original design of technical performance ensuring quality, durability, train operation safety, passenger safety and passenger comfort, not affect the appearance of rolling stock.
2. Technical drawings and instructions are necessary, and they can not be allowed to be revised without company's approval.
3. The record shall be written in rolling stock records to monitor changes in use.

Article 32) Rules on using lubricants in maintenance

Lubricants for equipment installed on rolling stock and oil for hydraulic shock absorbers etc. shall be ensured proper grade and be met quality standards in accordance with technical requirements of each product.

Article 33) Rules on replacement of consumable parts and equipment

Maintenance implement division (Center) should supervise and follow up limit value for consumable parts and equipment based on technical standards, maintenance procedure of each line and company's maintenance rules. They are replaced to ensure quality of maintenance in accordance with period, time, running km and actual circumstance.

Article 34) Rules on rolling stock welding repair

1. All welding repair works for important parts, welding to connect the details together shall comply with procedures, and ensuring technical requirements.
2. Weld size shall comply with rules from manufacturer, and no weld defects such as cracking phenomenon, slag contents are allowed.
3. Only skilled welders in accordance with current regulations are allowed to weld important parts of rolling stock.

Article 35) Rules on maintenance equipment

1. The tools and equipment shall be guaranteed in good technical condition, and ready for use for inspection, repair, and maintenance.
2. For the equipment specified in the law of measurement, it is necessary to be maintained in compliant with the law and the design requirements of the equipment.
3. For tools to be used in special or emergency, they shall be stored in a separated and specific area with detailed instructions

Article 36) Rules on spare equipment

1. Spare equipment shall be stored and ready for use for inspection, repair and maintenance.
2. When failure occurs during operation or inspection, if it can not be restored by repair, it is necessary to replace with spare equipment quickly for resuming operation of trains or equipment.
3. Spare equipment and equipment for emergency recovery shall be prepared and stored in advance in good condition and guaranteed quality when using.
4. Spare equipment shall be stored in separated area, quantity and kind of them shall be prepared in accordance with requirements of maintenance works.

Article 37) Rules on coupling rolling stock

Only rolling stock, whose quality statuses are confirmed and which meets technical requirements and design standards to ensure operation safety, can be coupled.

Article 38) Rules on noise

During inspection, maintenance and repairs, they shall be carried out in compliant with regulations on noise, vibration and odors. Noise, vibration and odor shall not be emitted during maintenance to prevent from adversely affecting neighborhood environment.

Article 39) Rules on sign and safety measure

1. During daily, regular or technical maintenance, maintenance personnel shall attach sign flags on both ends of rolling stock to notice around that the rolling stock are under maintenance.
2. Before carrying out maintenance, it is necessary to ensure safety measure regarding electricity and transferring rolling stock.
3. At the maintenance area where someone can access, it is necessary to install protective facilities and alarm signals properly.

Article 40) Requirements after maintenance

1. If the result of rolling stock inspection does not meet requirements as prescribed, it is necessary to be taken measures such as repair, replacement, disuse or etc.
2. In Overhaul maintenance, the date of maintenance shall be noted on the rolling stock.
3. After maintenance, all parts of the rolling stock shall meet technical requirements and ensure train operation safe.
4. Head of Maintenance center has responsibility for accepting rolling stock and putting rolling stock into operation after maintenance.

Article 41) Preventive measure for rolling stock whose operation is suspended

1. When the service of rolling stock is suspended, necessary precautions shall be taken to prevent the strength and functional decline of the rolling stock due to corrosion, deformation, degradation of electric insulation, etc. which can occur while service is suspended. Before resuming service of rolling stock, failure in rolling stock or in parts shall be inspected, maintained, repaired, restored or replaced to meet requirements.
2. The suspended period shall not be counted in the calculation of the period for the inspection period. However such period not to be counted in the calculation of the period of maintenance shall not exceed a half of period of each maintenance.

Article 42) Rules on trial run

- 1) Trial run is carried out at the case of followings;

- If newly purchased rolling stock will be operated for the first time.
 - After inspection, repair and maintenance for replacement and repair on major equipment in Intermediate overhaul, Overhaul, renovation or restoration of failure.
 - If trial run is required for some reason.
- 2) Only rolling stock, whose quality of each parts is confirmed, ensuring safe operation, meeting technical requirements and design standard, can be put into operation. The rolling stock which exceeds service life stipulated in design standard or Vietnamese rules is prohibited to be put into operation.

CHAPTER IV: IMPLEMENTATION

Article 43) Responsibility of each section

- 1) Rolling stock maintenance management division in HQs
 - Approving maintenance plans, and checking and auditing maintenance work carried out in Maintenance implement division based on approved rules, maintenance plans and procedure.
- 2) Maintenance implement division (Maintenance center)
 - Preparing maintenance plans for rolling stock, carrying out maintenance in accordance with approved maintenance plans. The rolling stock that is overdue for inspection period is prohibited to be put into operation.
 - Leader in Maintenance implement division has responsibility for preparing work plans and assigning maintenance personnel
 - When carrying out maintenance, symbol, number and specification noted on rolling stock should be compared with recorded data.
 - Prior to disassemble, cleaning and washing rolling stock shall be done.
 - Leader accepts rolling stock and put it into operation.

Article 44) Maintenance plans

Maintenance implement division (Maintenance center) has responsibility for preparing maintenance plans for long term, midterm, annual, quarterly, monthly and daily.

- 1) Basis for preparing plans
 - Ensuring train operation plans.
 - Carrying out periodic maintenance in compliant with stipulated time and running km.

- Equalizing work volume, and ensuring minimizing maintenance personnel for each maintenance.
 - When preparing maintenance plans, equalizing running km for each rolling stock. (except for special cases)
 - Assuring working time of implementation for health & welfare, cleaning, wheel grinding, education and other required work.
 - Ensuring safety, cost and effect of quality for the planned maintenance.
- 2) Contents of maintenance plans should include followings clearly;
- The name, major items, units of rolling stock maintenance work
 - The required time of implementation
 - The method of implementation
 - Priority
 - Work volume and budget

Article 45) Maintenance records

- 1) Maintenance personnel shall fill out following information in maintenance records.
- The requirements of work, form in charge
 - Inspection record
 - Test record
 - Shipping form (if any)
- 2) Maintenance records shall include following contents;
- The name of maintenance work, the time of implementation
 - Personnel in charge
 - Occurred abnormal conditions
 - Adjustment and change (if any) (including specification both before and after maintenance)
 - The time of completion
 - The personnel who is in charge of inspection and acceptance of maintenance results
- 3) Maintenance records shall be stored surely until the next Overhaul in Maintenance implement division.

- 4) The maintenance information of new or improved equipment should be updated and stored for later maintenance. The maintenance information of previous replaced equipment can be stored in computer system for saving spaces.
- 5) Drawings, instruction manuals, specifications should be stored orderly, and they should be ready for use at any time.

Article 46) Responsibility for maintenance

Maintenance personnel, technical personnel of maintenance, and leaders have main responsibility for the quality of maintenance and train operation troubles due to the quality of maintenance.

Article 47) The principle of modification and supplement of rules

In the process of implementing this rules, if having any problems with related units, it is necessary to submit comments in written to Maintenance management division in HQs promptly. The person in charge in HQs submits comments to the company leaders to be revised properly after consideration and investigation.

APPENDIX 1: Periodic maintenance of urban railways in each line

I) The contents fo periodic maitenance for Line 2(Based on reference in Tokyo Metro)

10-days inspection

Segment		Inspection item	Method	
1. Running gear	(1) bogie	a. bogie frame	damage, deformation, crack, and condition of installation	
		b. axle box and axle box suspension	(a) damage and condition of installation (b) oil leakage	
		c. wheel and axle	condition of wheel tread and damage	
		d. spring and dumper	damage, deformation, crack, oil leakage, air leakage and condition of installation	
		e. cowcatcher	damage, deformation, crack, and condition of installation	
	(2) driving equipment	a. gear box	damage, deformation, oil leakage and condition of installation	
		b. coupling	damage, deformation, oil leakage and condition of installation	
		c. groundings	damage and condition of installation	
d. tachometer generator		damage and condition of installation		
2. Traction equipment	(1) current collector	a. pantograph and relevant parts	(a) damage, deformation, melting damage and condition of installation (b) wear of contact strip (c) function of rising and dropping	(b) measure
		(2) equipment of control circuit	a. each equipment	damage of each parts, locking of cover, condition of installation and air leakage
	b. master controller		damage and condition of installation	
	c. reactor for traction equipment		damage, color change, off-flavor and deformation	
	d. electrical blower		(a) damage, locking of cover and condition of installation of each parts (b) abnormal noise and over heat	
3. Brake equipment	(1) foundation brake	a. brake cylinder	damage, air leakage, condition of installation	
		b. unit brake	damage, wear and deformation	
		c. disk brake equipment	damage, wear and deformation	
		d. brake disk	damage, crack, wear and condition of installation	
	(2) air brake control equipment	a. brake controller	(a) air leakage and condition of installation (b) function of brake (normal, emergency, etc.)	
		b. other brake equipment	damage of each parts, locking of cover, condition of installation and air leakage	
4. Electric equipment	(1) auxiliary power equipment	a. SIV	damage of each parts, locking of cover and condition of installation	
		b. battery	damage of each parts, locking of cover and condition of installation	
	(2) other equipment	a. auxiliary resistor	damage, color change, off-flavor and deformation	
		b. NFB and switches	damage and condition of installation	
		c. arrester	damage and condition of installation	
5. Air equipment	(1) compressor and attached device	a. compressor	(a) abnormal noise and vibration (b) oil leakage, air leakage (c) condition of commutation and length of brush	(c) measure
		b. pressure regulator	air leakage and function	

	(2) valve, air reservoir and air pipe	a. valve, air reservoir and air pipe	(a) damage and condition of installation (b) air leakage and oil leakage	
6. carbody and cabin	(1) inside of and outside of cabin		(a) damage and corrosion of roof, floor, outside plate, inner plate and gangway footplate, etc. (b) damage, locking and condition of installation of window, hood, seat, sliding door and other parts	
	(2) roof		damage and condition of roof coating and the other equipment on the roof	
	(3) door operating equipment		(a) damage, air leakage, condition of installation (b) turn on and off lights in conjunction with door opening and closing (c) function of opening and closing	
	(4) lighting equipment		(a) damage and condition of installation of lamp and lamp fitting (b) function of turn on and off	
	(5) cooling equipment, heating equipment and ventilation equipment		(a) damage and condition of installation (b) function	
7. other equipment	(1) sign device, communication device and public announcing device	a. sign device	(a) damage and condition of installation (b) function of each device	
		b. communication device and public announcing device	(a) damage and condition of installation (b) function of each device	
	(2) display equipment		(a) damage and condition of installation (b) function of each device	
	(3) gauge		(a) damage and condition of installation (b) indicating needle movement of pressure gauge, voltmeter and ampere meter	
	(4) coupler	a. automatic coupler and buffer	(a) damage and condition of installation (b) condition of coupling	
		b. shank guide	damage and condition of installation	
		c. coupling device of air pipe	damage and air leakage of hose, etc.	
		d. coupling device of electric wire	defacement and damage of main unit, insulator and jumper coupler	
	(5) signal equipment	a. receiving coil and on-board antenna	damage and condition of installation	
		b. main unit	damage and condition of installation of each parts	
c. other attachments		damage and condition of installation of each parts		
(6) driving recorder		damage and condition of installation		
8. starting test and brake test			function of starting and brake	

3-month inspection

I. Element inspection

Segment		Inspection item	Method
1. Running gear	(1) bogie	a. bogie frame	(a) damage, deformation, crack, and condition of installation (b) damage and wear of sliding part (c) condition of device attached with bogie frame, such as motor (d) damage of cavity
		b. traction device	damage, deformation, crack, and condition of installation

		c. axle box and axle box suspension	(a) damage and condition of installation (b) oil leakage		
		d. wheel and axle	(a) condition of wheel tread and damage (b) height of flange, and thick of flange	(b) measure	
		e. spring and dumper	(a) damage, deformation, crack, oil leakage, air leakage and condition of installation (b) height of air spring	(b) measure	
		f. cowcatcher	damage, deformation, crack, and condition of installation		
	(2) driving equipment	a. gear box	(a) damage, deformation, oil leakage and condition of installation (b) amount of lubricant		
		b. coupling	damage, deformation, oil leakage and condition of installation		
		c. groundings	wear, deformation, damage, pressure and clearance of brush and brush holder		
		d. tachometer generator	damage and condition of installation		
	2. Traction equipment	(1) current collector	a. pantograph and relevant parts	(a) damage, deformation, melting damage and condition of installation (b) wear of contact strip (c) function of rising and dropping (d) pressure of rising (e) property of insulation	(b) measure (d) measure (e) insulation test
		(2) traction motor	a. armature	damage, defacement, tarnish	
			b. field magnet and case	damage, defacement, deformation and condition of installation	
		(3) equipment of control circuit	a. line breaker and main contactor	(a) damage and wear of movable and sliding part (b) damage, wear, contact pressure and condition of installation of contactor (c) damage and condition of installation of spark absorber (d) about solenoid valve, see 4(2)d.; about cylinder, see 3(1)a. (e) defacement and damage of insulation (f) each parts condition of installation (g) function i) wipe of contactor ii) correlation operation of main contractor and sub contactor	
b. master controller			(a) damage and wear of movable and sliding part (b) damage, wear, contact pressure and condition of installation of contactor (c) defacement and damage of insulation (d) each parts condition of installation		
c. semiconductor device for traction equipment			(a) defacement and damage of semiconductor device, insulator and heat radiator (b) each parts condition of installation		
d. control unit of semiconductor device for traction equipment			(a) see 4(2) (b) each parts condition of installation		
e. reactor for traction equipment and capacitor			defacement and damage of each parts		

		f. electrical blower	(a) defacement and damage of each parts (b) see 2(2) (c) abnormal noise and over heat	
		g. parts of auxiliary circuit	damage and condition of installation	
3. Brake equipment	(1) foundation brake	a. brake cylinder	damage, air leakage, condition of installation	
		b. unit brake	damage, wear and deformation	
		c. disk brake equipment	damage, wear and deformation	
		d. brake disk	damage, crack, wear and condition of installation	measure
	(2) air brake control equipment	a. brake controller	(a) damage and wear of movable part and slide member (b) electrical parts, see 2(3)b.	
		b. brake command amplifier and receiver	(a) damage and condition of installation (b) electrical parts, see 4(2)	
		c. electro-pneumatic braking device and brake assist equipment	(a) damage, air leakage and condition of installation (b) see 3(2)a.	
		d. load compensating device	(a) damage, air leakage and condition of installation (b) see 3(2)a.	
4. Electric equipment	(1) auxiliary power equipment	a. SIV	(a) defacement and damage of insulator (b) damage of capacitor, etc. (c) each parts condition of installation (d) other electric parts, see 4(2) (e) property of output i) output voltage ii) frequency	(e) measure
		b. battery	(a) corrosion, damage, condition of installation, and liquid leakage of main unit of battery, electric cable and terminal (b) specific weight(liquid type only), quantity, voltage of electrolyte	(b) measure
	(2) relay, solenoid valve, wiring, etc.	a. auxiliary resistor	(a) damage, defacement and deformation of resistor (b) condition of installation	
		b. fuse and switches	(a) damage of box and fuse (b) deformation and damage at attachment area (c) condition of installation	
		c. contactor, relay and contactless contactor	(a) defacement and damage of insulator (b) damage of moving part and attachment area (c) condition of installation (d) about semiconductor device, see 4(2)e. (e) function	
		d. solenoid valve	(a) disconnection and burning of coil (b) condition of installation (c) function	
		e. electric parts like semiconductor	(a) defacement and damage of semiconductor and substrate (b) damage and condition of installation of parts and connector	
		f. arrester	(a) damage and defacement of insulator (b) condition of installation	
		g. wiring, etc.	damage and condition of installation of electric wire, optical fiber cable, junction box and other parts	

5. Air equipment	(1) compressor and attached device	a. compressor	(a) about motor, see 2(2) (b) damage of main unit and transmission device (c) oil leakage, air leakage and oil level (d) function	
		b. pressure regulator	see 3(2)a.	
		c. safety valve	damage, air leakage and condition of installation	
		d. air dryer and auto drain valve	(a) damage, air leakage and condition of installation (b) about solenoid valve, see 4(2)d. (c) damage, air leakage and function of delivery valve	
	(2) valve, air reservoir and air pipe	a. feed valve and reducing valve	damage, air leakage and condition of installation	
		b. pressure switch, etc.	see 3(2)a.	
		c. other valve	(a) see5(2)a. (b) about electric parts, see 4(2)	
		d. air reservoir	corrosion and condition of installation of main unit and fittings	
		e. air pipe, etc.	(a) damage and condition of installation of air pipe, hose and strainer. (b) movement of cock and condition of installation	
	6. carbody and cabin	(1) underframe		damage, deformation, crack, and corrosion of beam and fittings, etc.
(2) inside of and outside of cabin		(a) damage and corrosion of roof, floor, outside plate, inner plate and gangway footplate, etc. (b) damage, locking and condition of installation of window, hood, seat, sliding door and other parts		
(3) roof		damage and condition of roof coating and the other equipment on the roof		
(4) door operating equipment		(a) damage, wear, condition of installation of door engine, belt, roller, etc. (b) about electric parts such as solenoid valve, door control switch and door safety equipment, see4(2) (c) air leakage and oil leakage of door operating equipment and air pipe, etc. (d) function of opening and closing		
(5) lighting equipment		(a) damage and condition of installation of lamp and lamp fitting (b) about contactor, see 4(2)c.		
(6) cooling equipment, heating equipment and ventilation equipment		(a) damage and condition of installation (b) about contactor, see 4(2)c.		
7. other equipment	(1) sign device, communication device and public announcing device	a. sign device	damage and condition of installation	
		b. communication device and public announcing device	damage and condition of installation	
	(2) display equipment		damage and condition of installation	
	(3) gauge		(a) damage and condition of installation (b) indicating needle movement of pressure gauge, voltmeter and ampere meter	
	(4) coupler	a. automatic coupler and buffer	(a) damage and condition of installation (b) condition of coupling	

		b. shank guide	damage and condition of installation	
		c. coupling device of air pipe	damage and air leakage of hose and gasket, etc.	
		d. coupling device of electric wire	defacement and damage of main unit, insulator and jumper coupler	
	(5) signal equipment	a. receiving coil and on-board antenna	damage, defacement and condition of installation	
		b. main unit	(a) damage and condition of installation (b) about electric parts, see 4(2)	
		c. other attachments	(a) damage and condition of installation (b) about electric parts, see 4(2)	
	(6) driver emergency brake equipment		damage and condition of installation	
(7) driving recorder		damage and condition of installation		

II. Synthesis Inspection

Inspection Items	Method
1. condition of installation of each equipment	
2. height of cowcatcher	measure
3. function of current collector shoe	
4. control and function of protection of equipment on the control circuit	measure
5. insulation property of electric circuit	insulation test
6. function of brake	measure
7. air leakage from air brake equipment and other air equipment	measure
8. ability of compressor and function of pressure regulator and safety valve	measure
9. inclination of car body	measure
10. function of door operating equipment	measure
11. function of lighting equipment	
12. function of sign device, communication device and public announcing device	
13. function of display equipment	
14. function of cooling equipment, heating equipment and ventilation equipment	
15. height of coupler	measure
16. function and operation of signal equipment	measure
17. height of receiving coil and on-board antenna	measure
18. function of driver emergency brake equipment	
19. starting test	

4-year or 600,000km inspection

I. Element inspection

Segment		Inspection item	Method
1. Running gear	(1) bogie	a. bogie frame	(a) deformation, crack and corrosion of frame and beam, etc. (b) damage and wear of sliding part (c) damage and wear of device attached with bogie frame, such as motor and relevant parts (d) damage of cavity (e) crack of frame (e) detection
		b. traction device	(a) crack, damage, wear, deformation, and condition of installation of traction beam (b) damage, wear and condition of installation of rubber to limit the movement of the left and right

	c. axle box and axle box suspension	(a) damage, wear, color change and clearance of axle box and bearing, etc. (b) defacement and quantity of lubricant(oil and grease) (c) crack, damage, wear and condition of installation of link of axle box, etc. (d) crack, damage, deformation, degradation of rubber	
	d. wheel and axle	(a) condition of wheel tread and damage (incl. noise damping ring) (b) measurement i) diameter of the wheel ii) height of flange, and thick of flange iii) wheel gage (c) damage of axle (incl. crack) (d) about groundings, see 1(2)d. (e) about tachometer generator, see 1(2)e.	(b) measure (c) detection
	e. spring and dumper	(a) damage, wear and deformation of spring (b) function and oil leakage of dumper (c) crack, damage, deformation, degradation and condition of installation of rubber (d) about automatic leveling valve and differential pressure valve of air spring, etc., see 5(2)a.	(b) measure
	f. cowcatcher	damage, deformation, crack, and condition of installation	
(2) driving equipment	a. gear	(a) crack, deformation, wear, fracture and condition of installation (b) meshing of gears	
	b. gear box	(a) damage, deformation, oil leakage and condition of installation of gear box (b) defacement and quantity of lubricant (c) damage and condition of installation of oil level gauge and plug (d) damage, wear, clearance of bearing (e) crack, damage, deformation, degradation and condition of installation of rubber	
	c. coupling	(a) crack, damage, deformation and wear of main unit (b) quantity of lubricant(grease)	
	d. groundings	(a) damage and wear of sliding part (b) wear, deformation, pressure and clearance of brush and brush holder	
	e. tachometer generator	damage and condition of installation	

2. Traction equipment	(1) current collector	a. pantograph and relevant parts	(a) damage, deformation and corrosion of mounting parts, main pin, frame pipe, pantograph head and contact strip (b) wear and deformation of pin and bearing (c) function of supporting parts (d) damage and corrosion of cylinder, air pipe and air horse (e) defacement and damage of insulator etc. (f) about solenoid valve, see 4(2)d. (g) function of rising and dropping (h) property of insulation	(h) insulation test
	(2) traction motor	a. armature	(a) damage, defacement, tarnish (b) damage, wear and deformation of shaft and fan, etc.	
		b. field magnet and case	(a) damage, defacement, deformation and condition of installation (b) damage, condition of fitting and condition of lubrication of bearing (c) damage and condition of installation of junction box	
			(a) property of insulation (b) function of rotation	(a) insulation test
	(3) equipment of control circuit	a. line breaker and main contactor	(a) damage and wear of movable and sliding part (b) damage, wear, contact pressure and condition of installation of contactor (c) about solenoid valve see 4(2)d., and about cylinder see 3(1)a. (d) defacement and damage of insulation (e) each parts condition of installation (f) function i) wipe of contactor ii) correlation operation of main contractor and sub contactor (g) property of operation i) air pressure of operation ii) voltage of operation	(g) measure
		b. master controller	(a) damage and wear of movable and sliding part (b) damage, wear, contact pressure and condition of installation of contactor (c) defacement and damage of insulation (d) each parts condition of installation (e) about semiconductor device, see 4(2)e.	
		c. semiconductor device for traction equipment	(a) defacement and damage of semiconductor device, insulator and heat radiator (b) each parts condition of installation	
		d. control unit of semiconductor device for traction equipment	see 4(2)	
		e. reactor for traction equipment and capacitor	(a) defacement, deformation, oil leakage and damage of each parts (b) property of insulation (reactor)	(b) insulation test
		f. electrical blower	(a) defacement and damage of each parts (b) see 2(2)	
		g. parts of auxiliary circuit	damage and condition of installation	

3. Brake equipment	(1) foundation brake	a. brake cylinder	(a) damage, crack and wear of inside of cylinder, piston and rubber (b) condition of lubrication	
		b. unit brake	(a) damage, wear and deformation (b) function	
		c. disk brake equipment	(a) damage, wear and deformation (b) function	
		d. brake disk	damage, crack, wear and condition of installation	measure
	(2) air brake control equipment	a. brake controller	(a) damage and wear of movable and sliding part (b) condition of valve and valve sheet, damage of spring (c) damage, change in quality and deformation of diaphragm and gasket (d) electrical parts, see 2(3)b.	
		b. brake command amplifier and receiver	(a) damage and condition of installation (b) electrical parts like semiconductor, see 4(2)e.	
		c. electro-pneumatic braking device and brake assist equipment	(a) damage and condition of installation (b) see 3(2)a.	
		d. load compensating device	(a) damage and condition of installation (b) see 3(2)a.	
4. Electric equipment	(1) auxiliary power equipment	a. SIV	(a) defacement and damage of insulator (b) damage of capacitor, etc. (c) each parts condition of installation (d) other electric parts, see 4(2) (e) property of insulation(exclude semiconductor parts) (f) property of output i) output voltage ii) frequency	(e) insulation test (f) measure
		b. battery	(a) corrosion, damage, condition of installation, and liquid leakage of main unit of battery, electric cable and terminal (b) specific weight(liquid type only), quantity, voltage of electrolyte	(b) measure
	(2) relay, solenoid valve, wiring, etc.	a. auxiliary resistor	(a) damage, defacement and deformation of resistor (b) condition of installation	
		b. fuse and switches	(a) damage of box and fuse (b) deformation and damage at attachment area (c) condition of installation (d) function	
		c. contactor, relay and contactless contactor	(a) defacement and damage of insulator(b) damage of moving part and attachment area(c) condition of installation(d) about semiconductor device, see 4(2)e.(e) function	
		d. solenoid valve	(a) disconnection and discolor of coil (b) condition of valve and valve sheet, valve lift (c) condition of installation (d) function	
		e. electric parts like semiconductor	(a) defacement and damage of semiconductor and substrate (b) damage and condition of installation of parts and connector	

		f. arrester	(a) damage and defacement of insulator (b) condition of installation	
		g. wiring, etc.	(a) damage and condition of installation of electric wire, optical fiber cable, junction box and other parts (b) property of insulation	(b) insulation test
5. Air equipment	(1) compressor and attached device	a. compressor	(a) about motor, see 2(2) (b) damage of crank room, cylinder, piston, etc. (c) wear, damage, defacement and condition of installation of valve (d) damage of transmission device (e) oil leakage, air leakage and oil level (f) function	
		b. pressure regulator	see 3(2)a.	
		c. safety valve	condition of valve and valve sheet	
		d. air dryer and auto drain valve	(a) damage, air leakage and condition of installation (b) degradation of moisture absorbent (c) about solenoid valve, see 4(2)d. (d) about delivery valve, see 5(2)a.	
	(2) valve, air reservoir and air pipe	a. feed valve and reducing valve	(a) condition of valve and valve sheet, damage of spring (b) damage, degradation and deformation of diaphragm and gasket (c) function	
		b. pressure switch, etc.	see 3(2)a.	
		c. other valve	(a) see5(2)a. (b) about electric parts, see 4(2)	
		d. air reservoir	corrosion and condition of installation of main unit and fittings	
		e. air pipe, etc.	(a) damage and condition of installation of air pipe, hose and strainer. (b) movement of cock and condition of installation	
	6. carbody and cabin	(1) underframe		damage, deformation, crack, and corrosion of beam and fittings, etc.
(2) inside of and outside of cabin (incl. driver table and cab seat)		(a) damage and corrosion of roof, floor, outside plate, inner plate and gangway footplate, etc. (b) damage, locking and condition of installation of window, hood, seat, sliding door and other parts		
(3) roof		(a) damage, deformation and detachment of roof coating (b) damage and corrosion of equipment on the roof and fittings		
(4) door operating equipment		(a) damage, wear, deformation, condition of installation of door engine, belt, roller, etc. (b) about electric parts such as solenoid valve, door control switch and door safety equipment, see4(2) (c) air leakage and oil leakage of door operating equipment and air pipe, etc. (d) function of opening and closing		
(5) lighting equipment		(a) damage and condition of installation of lamp and lamp fitting (b) about contactor, see 4(2)c.		

	(6) cooling equipment, heating equipment and ventilation equipment		(a) about motor, see 2(2) (exclude dielectric strength test) (b) about electric parts, see 4(2) (c) damage and condition of installation of each parts	
7. other equipment	(1) sign device, communication device and public announcing device	a. sign device	(a) damage, defacement and condition of installation of each parts (b) function	
		b. communication device and public announcing device	(a) damage, defacement and condition of installation of each parts (b) function	
	(2) display equipment		damage, defacement and condition of installation of each parts	
	(3) gauge		(a) damage and condition of installation (b) function of pressure gauge (c) function of speed meter (d) function of other meter (voltmeter and ampere meter, etc.)	(b) measure (c) measure
	(4) coupler	a. automatic coupler and buffer	(a) crack, deformation and wear of main unit and attachments (b) damage, wear, deformation and condition of installation of frame, shock absorbing rubber, division plate, etc. (c) function	
		b. shank guide	damage, wear, deformation and condition of installation	
		c. coupling device of air pipe	damage and degradation of hose and gasket, etc.	
		d. coupling device of electric wire	(a) defacement and damage of main unit, insulator and jumper coupler (b) function	
	(5) signal equipment	a. receiving coil and on-board antenna	damage, defacement and condition of installation	
		b. main unit	(a) damage and condition of installation (b) about electric parts, see 4(2)	
		c. other attachments	(a) damage and condition of installation (b) about electric parts, see 4(2)	
	(6) driver emergency brake equipment		damage and condition of installation	
	(7) driving recorder		damage and condition of installation	

II. Synthesis Inspection

Inspection Items	Method
1. condition of installation of each equipment	
2. height of cowcatcher	measure
3. function of current collector shoe	
4. control and function of protection of equipment on the control circuit	measure
5. insulation property of electric circuit	insulation test
6. function of brake	measure
7. air leakage from air brake equipment and other air equipment	measure
8. ability of compressor and function of pressure regulator and safety valve	measure
9. inclination of car body	measure
10. function of door operating equipment	measure
11. function of lighting equipment	

12. function of sign device, communication device and public announcing device	
13. function of display equipment	
14. function of cooling equipment, heating equipment and ventilation equipment	
15. height of coupler	measure
16. function and operation of signal equipment	measure
17. height of receiving coil and on-board antenna	measure
18. function of driver emergency brake equipment	
19. starting test	
20. wheel load unbalance	measure

III. Trial run

Inspection Items	Method
1. ability of starting, acceleration and deceleration	
2. major function of brake equipment	
3. abnormal noise and vibration	
4. state of display of meter	
5. function of ATO	
6. condition after trial run	
(a) condition of bearing of main mortar	
(b) condition of traction equipment	
(c) heat and ail leakage of axle bearing	
7. function of driving recorder	

8-year inspection

I. Element inspection

Segment		Inspection item	Method
1. Running gear	(1) bogie	a. bogie frame	(a) deformation, crack and corrosion of frame and beam, etc. (b) damage and wear of sliding part (c) damage and wear of device attached with bogie frame, such as motor and relevant parts (d) damage of cavity (e) crack of frame (e) detection
		b. traction device	(a) crack, damage, wear, deformation, and condition of installation of traction beam (b) damage, wear and condition of installation of rubber to limit the movement of the left and right
		c. axle box and axle box suspension	(a) damage, wear, color change and clearance of axle box and bearing, etc. (b) defacement and quantity of lubricant(oil and grease) (c) crack, damage, wear and condition of installation of link of axle box, etc. (d) crack, damage, deformation, degradation of rubber

		d. wheel and axle	(a) condition of wheel tread and damage (incl. noise damping ring) (b) measurement i) diameter of the wheel ii) height of flange, and thick of flange iii) wheel gage (c) damage of axle (incl. crack) (d) about groundings, see 1(2)d. (e) about tachometer generator, see 1(2)e.	(b) measure (c) detection	
		e. spring and dumper	(a) damage, wear and deformation of spring (b) function and oil leakage of dumper (c) crack, damage, deformation, degradation and condition of installation of rubber (d) about automatic leveling valve and differential pressure valve of air spring, etc., see 5(2)a.	(b) measure	
		f. cowcatcher	damage, deformation, crack, and condition of installation		
	(2) driving equipment	a. gear	(a) crack, deformation, wear, fracture and condition of installation (b) meshing of gears		
		b. gear box	(a) damage, deformation, oil leakage and condition of installation of gear box (b) defacement and quantity of lubricant (c) damage and condition of installation of oil level gauge and plug (d) damage, wear, clearance of bearing (e) crack, damage, deformation, degradation and condition of installation of rubber		
		c. coupling	(a) crack, damage, deformation and wear of main unit (b) quantity of lubricant(grease)		
		d. groundings	(a) damage and wear of sliding part (b) wear, deformation, pressure and clearance of brush and brush holder		
		e. tachometer generator	damage and condition of installation		
	2.Traction equipment	(1) current collector	a. pantograph and relevant parts	(a) damage, deformation and corrosion of mounting parts, main pin, frame pipe, pantograph head and contact strip (b) wear and deformation of pin and bearing (c) function of supporting parts (d) damage and corrosion of cylinder, air pipe and air horse (e) defacement and damage of insulator etc. (f) about solenoid valve, see 4(2)d. (g) function of rising and dropping (h) property of insulation	(h) insulation test
		(2) traction motor	a. armature	(a) damage, defacement, tarnish (b) damage, wear and deformation of shaft and fan, etc.	

		b. field magnet and case	(a) damage, defacement, deformation and condition of installation (b) damage, condition of fitting and condition of lubrication of bearing (c) damage and condition of installation of junction box	
			(a) property of insulation (b) function of rotation	(a) insulation test, dielectric strength test
(3) equipment of control circuit		a. line breaker and main contactor	(a) damage and wear of movable and sliding part (b) damage, wear, contact pressure and condition of installation of contactor (c) about solenoid valve see 4(2)d., and about cylinder see 3(1)a. (d) defacement and damage of insulation (e) each parts condition of installation (f) function i) wipe of contactor ii) correlation operation of main contractor and sub contactor (g) property of operation i) air pressure of operation ii) voltage of operation	(g) measure
		b. master controller	(a) damage and wear of movable and sliding part (b) damage, wear, contact pressure and condition of installation of contactor (c) defacement and damage of insulation (d) each parts condition of installation (e) about semiconductor device, see 4(2)e.	
		c. semiconductor device for traction equipment	(a) defacement and damage of semiconductor device, insulator and heat radiator (b) each parts condition of installation	
		d. control unit of semiconductor device for traction equipment	see 4(2)	
		e. reactor for traction equipment and capacitor	(a) defacement, deformation, oil leakage and damage of each parts (b) property of insulation (reactor)	(b) insulation test
		f. electrical blower	(a) defacement and damage of each parts (b) see 2(2)	
		g. parts of auxiliary circuit	damage and condition of installation	
		3. Brake equipment	(1) foundation brake	a. brake cylinder
b. unit brake	(a) damage, wear and deformation (b) function			
c. disk brake equipment	(a) damage, wear and deformation (b) function			
d. brake disk	damage, crack, wear and condition of installation			measure

	(2) air brake control equipment	a. brake controller	(a) damage and wear of movable and sliding part (b) condition of valve and valve sheet, damage of spring (c) damage, change in quality and deformation of diaphragm and gasket (d) electrical parts, see 2(3)b.	
		b. brake command amplifier and receiver	(a) damage and condition of installation (b) electrical parts like semiconductor, see 4(2)e.	
		c. electro-pneumatic braking device and brake assist equipment	(a) damage and condition of installation (b) see 3(2)a.	
		d. load compensating device	(a) damage and condition of installation (b) see 3(2)a.	
4. Electric equipment	(1) auxiliary power equipment	a. SIV	(a) defacement and damage of insulator (b) damage of capacitor, etc. (c) each parts condition of installation (d) other electric parts, see 4(2) (e) property of insulation(exclude semiconductor parts) (f) property of output i) output voltage ii) frequency	(e) insulation test, dielectric strength test (f) measure
		b. battery	(a) corrosion, damage, condition of installation, and liquid leakage of main unit of battery, electric cable and terminal (b) specific weight(liquid type only), quantity, voltage of electrolyte	(b) measure
	(2) relay, solenoid valve, wiring, etc.	a. auxiliary resistor	(a) damage, defacement and deformation of resistor (b) condition of installation	
		b. fuse and switches	(a) damage of box and fuse (b) deformation and damage at attachment area (c) condition of installation (d) function	
		c. contactor, relay and contactless contactor	(a) defacement and damage of insulator(b) damage of moving part and attachment area(c) condition of installation(d) about semiconductor device, see 4(2)e.(e) function	
		d. solenoid valve	(a) disconnection and discolor of coil (b) condition of valve and valve sheet, valve lift (c) condition of installation (d) function	
		e. electric parts like semiconductor	(a) defacement and damage of semiconductor and substrate (b) damage and condition of installation of parts and connector	
		f. arrester	(a) damage and defacement of insulator (b) condition of installation	
		g. wiring, etc.	(a) damage and condition of installation of electric wire, optical fiber cable, junction box and other parts (b) property of insulation	(b) insulation test

5. Air equipment	(1) compressor and attached device	a. compressor	(a) about motor, see 2(2) (b) damage of crank room, cylinder, piston, etc. (c) wear, damage, defacement and condition of installation of valve (d) damage of transmission device (e) oil leakage, air leakage and oil level (f) function	
		b. pressure regulator	see 3(2)a.	
		c. safety valve	condition of valve and valve sheet	
		d. air dryer and auto drain valve	(a) damage, air leakage and condition of installation (b) degradation of moisture absorbent (c) about solenoid valve, see 4(2)d. (d) about delivery valve, see 5(2)a.	
	(2) valve, air reservoir and air pipe	a. feed valve and reducing valve	(a) condition of valve and valve sheet, damage of spring (b) damage, degradation and deformation of diaphragm and gasket (c) function	
		b. pressure switch, etc.	see 3(2)a.	
		c. other valve	(a) see5(2)a. (b) about electric parts, see 4(2)	
		d. air reservoir	corrosion and condition of installation of main unit and fittings	
		e. air pipe, etc.	(a) damage and condition of installation of air pipe, hose and strainer. (b) movement of cock and condition of installation	
	6. carbody and cabin	(1) underframe		damage, deformation, crack, and corrosion of beam and fittings, etc.
(2) inside of and outside of cabin (incl. driver table and cab seat)		(a) damage and corrosion of roof, floor, outside plate, inner plate and gangway footplate, etc. (b) damage, locking and condition of installation of window, hood, seat, sliding door and other parts		
(3) roof		(a) damage, deformation and detachment of roof coating (b) damage and corrosion of equipment on the roof and fittings		
(4) door operating equipment		(a) damage, wear, deformation, condition of installation of door engine, belt, roller, etc. (b) about electric parts such as solenoid valve, door control switch and door safety equipment, see4(2) (c) air leakage and oil leakage of door operating equipment and air pipe, etc. (d) function of opening and closing		
(5) lighting equipment		(a) damage and condition of installation of lamp and lamp fitting (b) about contactor, see 4(2)c.		
(6) cooling equipment, heating equipment and ventilation equipment		(a) about motor, see 2(2) (exclude dielectric strength test) (b) about electric parts, see 4(2) (c) damage and condition of installation of each parts		

7. other equipment	(1) sign device, communication device and public announcing device	a. sign device	(a) damage, defacement and condition of installation of each parts (b) function	
		b. communication device and public announcing device	(a) damage, defacement and condition of installation of each parts (b) function	
	(2) display equipment		damage, defacement and condition of installation of each parts	
	(3) gauge		(a) damage and condition of installation (b) function of pressure gauge (c) function of speed meter (d) function of other meter (voltmeter and ampere meter, etc.)	(b) measure (c) measure
	(4) coupler	a. automatic coupler and buffer	(a) crack, deformation and wear of main unit and attachments (b) damage, wear, deformation and condition of installation of frame, shock absorbing rubber, division plate, etc. (c) function	
		b. shank guide	damage, wear, deformation and condition of installation	
		c. coupling device of air pipe	damage and degradation of hose and gasket, etc.	
		d. coupling device of electric wire	(a) defacement and damage of main unit, insulator and jumper coupler (b) function	
	(5) signal equipment	a. receiving coil and on-board antenna	damage, defacement and condition of installation	
		b. main unit	(a) damage and condition of installation (b) about electric parts, see 4(2)	
		c. other attachments	(a) damage and condition of installation (b) about electric parts, see 4(2)	
	(6) driver emergency brake equipment		damage and condition of installation	
	(7) driving recorder		damage and condition of installation	

II. Synthesis Inspection

Inspection Items	Method
1. condition of installation of each equipment	
2. height of cowcatcher	measure
3. function of current collector shoe	
4. control and function of protection of equipment on the control circuit	measure
5. insulation property of electric circuit	insulation test, dielectric strength test
6. function of brake	measure
7. air leakage from air brake equipment and other air equipment	measure
8. ability of compressor and function of pressure regulator and safety valve	measure
9. inclination of car body	measure
10. function of door operating equipment	measure
11. function of lighting equipment	
12. function of sign device, communication device and public announcing device	
13. function of display equipment	
14. function of cooling equipment, heating equipment and ventilation equipment	
15. height of coupler	measure

16. function and operation of signal equipment	measure
17. height of receiving coil and on-board antenna	measure
18. function of driver emergency brake equipment	
19. starting test	
20. wheel load unbalance	measure

III. Trial run

Inspection Items	Method
1. ability of starting, acceleration and deceleration	
2. major function of brake equipment	
3. abnormal noise and vibration	
4. state of display of meter	
5. function of ATO	
6. condition after trial run	
(a) condition of bearing of main motor	
(b) condition of traction equipment	
(c) heat and ail leakage of axle bearing	
7. function of driving recorder	

II) The contents of periodic maintenance for Line 2A

I. Daily inspection

- Daily inspection item includes at least the contents in the below table.
- If abnormality is found out of the area of daily check, it is necessary to timely report and handle.
- For screw nut with delayed wire, it is not allowed to check by drop hammer.

Procedure of daily inspection of under-floor electrical system

Type	Inspection area and requirement	Content of inspection and maintenance	Number of standard limit	Remark
Current receiver	1. Good condition, flexible movement	Check the shaft to see whether it is jammed or not	Good condition, flexible movement	
	2. Assembled part and the fixed components inside are not loose.	If spare parts are loose, it is required to tighten and mark the delayed wire	Assembled part and the fixed components inside are not loose.	Check and mark fix spare parts to avoid loosening.
	3. The thickness of electrically charged shoe meets the requirement	Change electrically charged shoe	The thickness of electrically charged shoe meets the requirement	
	4. Big wire is not worn out (especially at the position near to bogie), fired, damaged, connector is not abnormal, and spring is not cracked. Wire clamp is not loose, installed plate does not have electrified clue.	Check to see the big wire is not worn out (especially at the position near to bogie), fired, damaged, and abraded.	Well check by naked eyes	
Under-floor	1. Entire outside of electrical cabinet does	Repair the deformed,	Restore to the original	

electrical cabinet	not have abnormality and strange smell	cracked cover. Check carefully the source of strange smell	condition and clear the strange smell	
	2. Inside and outside of the cabinet does not have leaked sound and strange sound. Check whether the cabinet is stagnated with water in rainy weather	Check tightness of the cabinet and flexible operation of components inside the cabinets	Good tightness, components inside the cabinets operate flexibly, snow and dust are not available.	
	3. When hang and install cabinet by fixed element, check whether it is lost or loosen.	Check loose protection mark of fix element for hanging and installation to see whether it is abnormal, latch is good or not, re-fix the fixed element and mark delay wire	Fixed element and latch is undamaged and in good condition	
	4. in-out pipe is abnormal or not	Find abnormal, timely deal with it	Maintain it in normal and good condition	
Electrical equipment outside train and train head	1. Connecting set of both train ends	Check the condition	Installed bolts are not loose, elements for connecting is in exact and stable position	
	2. Cable connect both ends of train	Cable connector is not worn out, the length is not	Cable connector is not worn out, the length is	

		changed remarkably	not changed remarkably	
	3. Wire distribution cabinet both ends of train	Outside of cabinet does not have abnormality and strange smell. Wire clamp is not loose and abnormal. Check inside to see whether rain/snow is accumulated		
Battery box	1. Box body and hanger	Check fixed elements	Element is tightly fixed without loosening	
	2. door on box side	Check open and close condition	Open and close smoothly and tightly	
	3. Flash lamp	Check electrolyte liquid	Liquid is not leaked, surface of liquid is normal	
	4. Electrical equipment and connect wire	Check connectivity of electrical equipment and cable	Equipment works normally with correct operation, connect wire is stable.	

II. Technical check of the train

- Technical inspection items includes the following contents

- After disconnecting electricity 3 minutes, it is allowed to contact to the high voltage parts
- When check electronic plate of low voltage line, it is required to use antistatic device.
- For screw nut with delayed wire, it is not allowed to check by drop hammer.

Type	Inspection area and requirement	Content of inspection and maintenance	Number of standard limit	Remark
Current receiver	1. Good condition, flexible movement	Check the shaft to see whether it is jammed or not	Good condition, flexible movement	
	2. The thickness of electrically charged shoe meets the requirement	Change electrically charged shoe	The thickness of electrically charged shoe meets the requirement	
	3. Big wire is not worn out (especially at the position near to bogie), fired, damaged, connector is not abnormal, and spring is not cracked. Wire clamp is not loose, installed plate does not have electrified clue.	Check to see the big wire is not worn out (especially at the position near to bogie), fired, damaged, abraded.	Well check by naked eyes	
	4. Wire connecting device is not abnormal, spring is not cracked, clamp wire is not loosened.	Check fixed and stable condition of wire connecting device. Check twist of the spring manually	Fix condition is good, twist of the spring is good	

	5. there is no crack on the surface of plate, electrified clue	If there is deep crack, replace it with new plat and clean that surface	Well check by naked eyes	
	6. Soft wire is worn, broken or not	Replace with new soft wire	Ratio of crack and damage is not more than 5%	
	7. Install fixed elements tightly without loosing	If it is loosen, re-fixed and mark the delayed wire	Install fixed elements tightly without loosing	Check and mark to prevent from loosing
Under-floor electrical cabinet	1. Outside of electrical cabinet does not have abnormality and strange smell	Repair the deformed, cracked outside of cabinet cover. Check the source of strange smell and clear it	Restore to the original condition and clear the strange smell	
	2. Inside and outside of the cabinet does not have leaked sound and strange sound. Check whether the cabinet is stagnated with water or snow in rainy/snowy weather	Check tightness of the cabinet and flexible operation of components inside the cabinets	Good tightness, components inside the cabinets operate flexibly, snow and dust are not accumulated.	
	3. Check whether the fixed elements for hanging and installation are lost or loosen.	Check loose protection mark of fix element for hanging and installation to see whether it is abnormal,	Fixed element and latch is undamaged and in good condition	

		latch is good or not. If element is damaged, mark it.		
	4. Connection of electrical equipment inside the cabinet is reliable or not.	Check to see the connection of electrical equipment inside the cabinet is reliable or not.	Good condition	
	5. Side door of cabinet is closed tightly or not, is loosened or not.	Check flexibility and reliability of closing side door, if it is loosened or jammed, it must be repaired immediately.	Good condition	
	6. Grounding equipment, grounding wire is reliable or not	Check outside of the grounding equipment is deformed or not, connecting wire is abnormal or not, grounding cabinet is reliable or not	Grounding is tight and reliable	
	7. Installation of second insulating cabinet body is stable or not, insulating material is damaged or not	Check the durability of Installation of second insulating cabinet body, if	Installation of cabinet body must be durable, insulating material must	

		insulating material is damaged or not, replace it	be perfect without breaking	
	8. In and out pipelines are abnormal or not	If abnormality is found, it is necessary to deal with it immediately	In and out pipelines are not damaged, connecting position with cabinet body must be tightly sealed, installation of plug and socket is tight, not loosen	
	9. Grid electrical cabinet has strange object or not	If strange object is found, timely clean it	No strange object inside the grid electrical cabinet	
Electrical outside train and train head	1. Connecting set of both train ends	Check the condition	Installed bolts are not loose, elements for connecting exact and stable	
	2. Cable connect both ends of train	Wire connector is not worn out (especially, base part) the length is not changed remarkably	Wire connector is not worn out, the length is not changed remarkably. The lowest point of the connector is 175-200mm from rail (.	

			Unload, idling spring)	
	3. Wire distribution cabinet both ends of train	Outside of cabinet does not have abnormality and strange smell. Tightness is good. Wire clamp is not loose and abnormal. Check inside to see whether rain/snow is accumulated or not.		
Underfloor pipeline	Pipeline is installed stably and sufficiently without loosening and tearing out	Check to see whether installed pipeline is stable and sufficient or not, whether it is loosened and torn out, if it is, re-fix and tighten it		
Connector set and connecting wire	1. All connecting heads and jack of equipment, machines are installed stably or not, locking condition is good or not, not abnormal, no strange smell	Check all connecting heads and jack of equipment, machines are installed stably or not, locking condition is good or not,		

		not abnormal, no strange smell		
	2. Connecting wire is fasten or not, not damage, not abnormal	Check to see whether connecting wire is fasten or not, not damage, not abnormal		
	3. Connecting wire is fasten or not, not damage, not abnormal	Check to see whether connecting wire is fasten or not, not damage, not abnormal		
Onboard equipment	1. Speed measuring equipment of ATP system is installed tightly without problem. Connector head is not loosen, signal wire is well fixed, not wore out.			
	2. Zoom box, signal aerial of ATP is installed tightly, exterior appearance is not abnormal.			
Battery cabinet	1. Box body and hanger	Check fixed elements	Element is tightly fixed without loosing	
	2. Door on box side	Check open and close condition	Open and close smoothly and tightly	

	3. Safe baffle, fixed latch	If it is cracked or deformed, welded surface is cracked, it is necessary to repair	Not broken and deformed, welded surface is not opened	
	4. Grounding	Check to see if the grounding wire is loosen, re-connect it tightly	Grounding wire is not damaged, connect is reliable	
	5. Battery	Check electrolyte liquid Joint plate Voltage value	Liquid is not leaked, surface of liquid is normal, bolt is not loosen, normal	
	6. Connection of cabinet body, electrical parts and electrical cable	Cabinet body, connecting wire, connecting head, automatic switch, etc. are not damaged, worn out, not leaked	Electrical parts works normally and reliable, connecting is reliable	
	7. Fixed bolts in the cabinet are loosen, tighten them		Well check by naked eyes	

III. Monthly repair (For detail contents, refer to usage and repair manual for users)

- Monthly inspection item includes at least the contents in the below table.
- After monthly repair, it is necessary to test generally. For test content and method, refer to usage and repair manual and related test materials
- Procedure of under-floor electrical system repair

1. Carbody (cabin, passenger car)

1. The doors, windows, chairs, advertising, handrails, handrail level, etc. must be clean, undamaged, good installation status.
 2. Screws on the roof of the car are not lacked, tightly fixed.
 3. Components of transitional plate, leading rail and structure of fold hut etc. on the ramp are not abnormal, good installation condition; connecting state of the body of found hut and car-body is good; status of installing windshield lock is good.
 4. Inside and outside paint of the train and straps are not peeled off and dirty.
 5. The doors of the cockpit control panel and general cabinet doors are not deformed; the door-lock function is reliable. Small relays and button etc. and other equipment in the cabinet are not damaged, work flexibly, lead seal is normal; wires are tidily distributed and tied fixedly.
 6. Switches, button, etc. driving control panel are not broken, buttons work flexibly, and lead seal is normal.
 7. Voltmeter and air pressure meter are in good installation condition, needles work flexibly.
 8. Rain water shield equipment is not damaged, good installation condition and operation; water tanks, hoses and funnels are well installed without leaks, make sure that the water in the tank is always full, water pump works well.
 9. Curtain is in good condition and good function.
 10. Door and lock of the cockpit work well, are not damaged; the doors and sealing bar are in good condition. Rotating status of wheels is normal; rubber cap is well installed, not damaged.
 11. Lights in passenger cars and cockpit, the indicator lamp are clean, not damaged, good installation condition, display effect and lighting is good.
 12. Door-side lights, passenger car are clean, not damaged, and in good installation condition, display effect and lighting is good.
 13. Electric heaters in the cockpit and passenger car are clean without trifles, function and operation is good. When connecting electricity, check temperature on the surface of the heater conduit is not exceeded 65 °C.
 14. Cabinet door of electrical equipment in passenger car is not deformed, function of door lock is good. Small relays and buttons in the cabinet are not damaged; buttons work flexibly; wires are tidily distributed, and tied tightly without separate wires.
 15. Centrifugal fan operates without strange sound and abnormal vibration; installation condition and function is good.
 16. Clean the inside of passenger car and cabin; no damages and abnormality.
 17. Outside appearance of subway monitor systems is clean and without abnormalities, screen switching function is normal, function of recording and reading data, and change flow are normal, reset train parameter and adjust clock simultaneously.
- 2. Ordinary electrical cabinet**
1. Monitor and spare part set are installed tightly, lock is good, connecting wire is not loose, operate reliably, not abnormal, no dirt.
 2. High-low voltage line and wires are clean and dirt-free. Line and attached parts are not damaged; installation is good condition; Waterproof treatment at input wire point is good

condition; connectors or sockets, jacks are not damaged, deformed; condition of grounding and installation is good. Cables (visible parts) without overheating phenomena causing change of color; insulation material is not damaged, no phenomena of aging, cable is tied closely.

3. Low voltage connecting set

1. Outside of cabinet, plugs, sockets are clean without distortion; installation condition is good, and not loose.
2. Cap of the cabinet is not deformed or damaged.
3. Insulation surface is not cracked or damaged, if it is, replace it.
4. Plating layer of contact point surface is peeled off, discolored, no electricity leakage, if it is so, replace it.

4. High voltage connecting set

1. Appearance is neat, not abnormal; surface is not damaged, installation condition is good.
 2. Connecting parts of socket, plugs are not abnormal, not loose; fixed ring is tighten, screws are no loose.
 3. Plating layer of contact point surface is peeled off, discolored, corroded; if it is serious damage, replace it.
 4. Insulation surface is not dirt adhered and damaged, if having any cracks, it must be replaced.
 5. Appearance of receiving based is not abnormal.
5. Traction and electrical system under train floor
1. Train hauling invert set (INV)
 - 1) Suspension brackets of the cabinet body are not cracked or damaged, suspension condition is normal.
 - 2) Cabinet body is cleaned, paint surfaces is perfect without scratches and rust; weld is not cracked; cabinet cap is not damaged without deformation and uneven.
 - 3) Wire outside of the cabinet body is in good condition; plugs and sockets are not damaged, tightly installed, the connection of wires, sustainable cables, protective hoses are not cracked without aging phenomena.
 - 4) Inside part can be seen without abnormal; the fixed components are not loose.
 - 5) Locks on the cabinet body are enough and good condition
 - 6) Tight sealing is in good condition
 - 7) High-voltage circuit connector and conductor wire at INV has no signs of overheating, aging and cracking, installation condition of driving power unit is good, not damaged.
 - 8) Radiator of transformer modular is clean without dirt, brushes and compressed air can be used for cleaning, if necessary.
 2. Overvoltage protection resistor structure (BR)
 - 1) Suspension condition of the cabinet body is normal.
 - 2) Cabinet body surface is clean, not damaged, not distorted, inside the cabinet is clean without trifles; around the cabinet body has no signs of overheating.
 - 3) Parts as shelving, cowl panel plate etc. is not distorted, cut, damaged, or rusted.

- 4) Screws of wire connecting head are not loose, connection status is good; conductor has no signs of overheating or aging.
 - 5) Resistor is not distorted, damaged, or corroded. Distance between the plates is higher than 4mm; porcelain Insulating vase is not broken.
 - 6) Measurement value at resistor is not exceeded the allowed norms ($\pm 5\%$). Note: resistance values norms (20 °C): RB1, RB2 = 0.81 Ω .
3. Flow filter resistor (FL)
- 1) Cabinet body and suspension is normal state, the fixed elements are not loose.
 - 2) Surface of the cabinet body is not dusted, deformed or damaged.
 - 3) Wire outside of the cabinet body is in good condition; screws of wire connecting head are not loose, connection status is good; conductor has no signs of overheating or aging.
 - 4) Ground contacting point is good; wire binding position is not worn or damaged, binding belt has no signs of phenomenon.
4. Grounding switch cabinet(LGS)
- 1) Cabinet body and suspension installation is not abnormal; fixed elements are not loose.
 - 2) Outside and inside of the cabinet body is clean, dry air is used to clear dust and other impurities in the cabinet.
 - 3) Cabinet cap is not deformed, cracked, lock of the door is enough, not loose.
 - 4) Wire head leading to outside of the cabinet is in good condition.
 - 5) Check tightness of connectors, color is not changed.
 - 6) Electrical parts such as circuit breaker or knife grooves are not discolored because of overheating.
5. Mainline high-speed relay cabinet (BHB)
- 1) Suspension hook of cabinet body and is normal state, the fixed elements are not loose.
 - 2) Cabinet body is cleaned, cabinet lid is not deformed, cracked, and locking effect is sufficient and not loose.
 - 3) Outside wire of the cabinet is in good condition; conductor has no sigh of overheating and aging. Plugs and sockets are not damaged, the power cable connection on the main circuit is sustainable; wire protection hoses are not damaged.
6. High-voltage cabinets (HV01)
- 1) Body of cabinets and components are installed in normal condition, the fixed elements are not loose.
 - 2) Outside and inside of the cabinet body are clean, the cabinet body and cover is not deformed, cracked, or corroded, full of lock, lock is good and not loose.
 - 3) Sealing condition is good.
 - 4) Controlling plug and socket of are not loosened, cracked, traced; fixed screws are not loose.
 - 5) Outside wire of the cabinet is in good condition; conductor has no sigh of overheating and aging.
 - 6) Check the outside of the fixed connectors, no discoloration and no traces of corrosion.

- 7) Check the internal body of cabinet: Cable is not aging, malfunctioning; connector head and connector set, curve-shaped connectors are not loose at position of connecting head, not rusty, broken at wire protection hood; no screws are loose, rusty, or falled off.
 - 8) Appearance of the electrical components in the cabinet body is perfect without damage, rust, corrosion, burn, or loosening.
7. Mainline isolation cabinet (BS+BF)
- 1) Installation condition of cabinet body suspension hook is normal, fixed elements are not loose.
 - 2) Wire outside the cabinet body is in good condition without signs of overheating or aging. Wire protection hoses are not broken down.
 - 3) Connecting status of the controller plugs, sockets is damaged or not (should be deleted).
 - 4) Electrical parts such as circuit breakers, cut pedestal are not discolored because of overheating.
 - 5) Insulation level is not lacked, on/off operation of breaker is normal.
 - 6) Outside and inside of the cabinet body is clean; cabinet lid is not distorted or damaged; bracket frame does not have remarkable crakes and deformation, exterior paint is peeled off, rusted or worn out. Locking latch is enough, working well and not loose.
8. Grounding equipment (EB1-EB4)
- 1) Installation condition is not abnormal, fixed elements are not loose.
 - 2) Outside is clean without dirty oil stick.
 - 3) External wiring status is good; conducting wire has no sign of overheating, aging and cracking.
9. Traction motor (IM1-IM4)
- 1) Suspension hooks are sufficient and not loose.
 - 2) Two sides have no signs of oil leakage. Check oil installation is in good condition, oil is not leaked.
 - 3) Electrical cable connector and cable-clamp plates are not loose, the surface of cable is not worn out, cracked.
 - 4) Remove air filter screen and clean it simultaneously.
 - 5) Outside of sensor is clean, tight installation is without abnormality, signal wire is fixed properly, not damaged.
10. Current receiver
- 1) Clean current receiver
 - 2) Stand of current receiver is not burned, cracked, stained.
 - 3) Installation condition of current receive is good, the fixed components are not loose.
 - 4) Wire connectors are not damaged, and in good installation condition
 - 5) Guiding frame, spring are not damaged. Check the thickness of charging base, contact pressure and installation height is in compliance with regulations. Pressure contact of current receiver base of lines $120\text{N} \pm 24\text{N}$ receiver (FERRAZ Shawmut); $140 \pm 20\text{N}$

(Zhongyang Hunan Electric Machine Co., Ltd. SL.07 Info / 10.SL-02Y; SL.07 / 10.SL-02Z.

- 6) Main line of current receiver is not folded; Wire clamps are not loosened, cracked, rubber insulating layer is damaged, not rubbed with train frame.
 - 7) Base layer is flexible, reliable
 - 8) Red indicator on the fuse will be shrunken, if it does not meet the request, it is required to replace the fuse.
 - 9) Check the condition of bone base is not cracked, damage, abrasion must be even; abrasion value is exceeded over the allowed limit.
 - 10) Measure the height of the main axle of current receiver: height from rail surface to the center line of main axle to be $201.5 \pm 2\text{mm}$ (FERRAZ Shawmut); $206 \pm 2\text{mm}$ (Zhongyang Hunan Electric Machine Co., Ltd.)
11. Wire joint cabinet
- 1) Cabinet body is clean, its lid is not distorted.
 - 2) Suspension hook condition of cabinet body is normal, fixed elements are not loose.
 - 3) External wire part is in good condition, wires have no signs of overheating, aging or cracking.
 - 4) Insulation surface is not dirt stuck or damaged, if it is cracked, replace it.

(6) Auxiliary system

1. Current Inverter and motor charger (SIV)

- 1) Condition of cabinet and installation element are not abnormal, the fixed components may be seen to be not loose.
- 2) Cabinet body is clean, its lid is undistorted, and not concaved, surface paint is perfect without scratches, rusty.
- 3) Outside wire of the cabinet and grounding wires that are braided together are all in good condition; conducting wire has no signs of overheating, aging and cracks. Plugs, sockets are not malfunctioned; wire protection soft tube is not broken down.
- 4) The parts of the electrical units are tightly fixed; the connection part of high-voltage loop has no sign of overheating.
- 5) Bolt caps and door lock must be tightened to fix and locked.
- 6) Radiators and protection conduit are not malfunctioned.

2. Transformer cabinet (TR)

- 1) Cabinet and condition of installation are not abnormal; the fixed elements are tightened without loosening.
- 2) Cabinet body is clean, undistorted; paint level is not scratched.
- 3) Internal wire is fixed without loosening
- 4) Coil of wire inside the cabinet is not deformed with no signs of crack and aging

- 5) Outside wire of the cabinet and grounding wires that are braided together all are in good condition; conducting wire has no signs of overheating, aging.
 - 6) Wiring inside the cabinet is clean, without miscellaneous things
 - 7) There are no strange sound and vibration when transformer is operating
3. Auxiliary high voltage cabinet (SPS)
- 1) Cabinet body is clean, no distortion, no damage.
 - 2) Cabinet and condition of installation are not abnormal; the fixed elements are tightened without loosening.
 - 3) Outside wire of the cabinet and grounding wires that are braided together are all in good condition; conducting wire has no signs of overheating, aging and cracks. Plugs, sockets are not malfunctioned; wire protection soft tube is not broken down.
 - 4) The parts of the electrical units are tightly fixed; the connection part of high-voltage loop has no sign of overheating.
 - 5) Electrical parts such as circuit breaker or knife grooves are not discolored because of overheating.
 - 6) Operation bar is fully insulated, on/off switching operations of breaker function normally.
 - 7) Bolts lid lock doors and fixed to tighten and lock.
 - 8) Dust-proof lid of the socket must work flexibly, electrical connecting parts is not unusual.
4. Battery Cabinet (BATT)
- 1) Cabinet body is clean, no distortion, no damage.
 - 2) Cabinet and condition of installation are not abnormal; the fixed elements are not loosening.
 - 3) Latch lock is enough and in good condition
 - 4) Outside wire of the cabinet is in good condition, linked wires inside the cabinet are fixed without loosening
 - 5) Battery is not leaked, air exhausted hole is not stuck.
 - 6) Linking parts of electrical connecting unit is fixed tightly, linking parts of electrical part has no sign of overheating
 - 7) Electrical measurement of battery must be higher than 106V, if it is lower than 106V, it is required to measure each part of voltage and replace each part if necessary.
5. Emergency ventilation inverter
- 1) Cabinet and condition of installation are not abnormal
 - 2) Cabinet body is clean, cabinet lid is not damaged, deformation is not exceed the limit
 - 3) Outside wire of the cabinet is in good condition; Plugs, sockets are not malfunctioned; wire protection soft tube is not broken down.
 - 4) Linking parts of electrical connecting unit is fixed tightly.
 - 5) Installation condition of internal parts is good, not damaged.
6. Extension power supply cabinet
- 1) Cabinet body is clean, no distortion, no damage.
 - 2) Cabinet and condition of installation are not abnormal.

- 3) Outside wire of the cabinet and grounding wires are in good condition; Plugs, sockets are not malfunctioned; linking part of cable of the main circuit is tight, wire protection soft tube is not broken down.
- 4) Appearance of electromagnetic contact part is not abnormal, contact point is not abnormal.

VII. Braking system

1. Air compressor
 - 1) Appearance of air compressor is clean; the fixed component is not loose.
 - 2) Condition of suspended equipment is good, rubber shock absorbers are not crack, and cables are good.
 - 3) Lubricate oil is not degenerated, oil level is normal. Standard: oil level is at the middle of the upper and lower positions of the oil glass.
 - 4) When operating, there is abnormal sound, oil is not leaked, gas is not leaked, temperature of parts is not unusual, ventilation time satisfies the requirements. Time of ventilation: less than 15 minutes; additional air time: less than 4 minutes.
 - 5) Cooling part is clean, not abnormal, not leaked.
 - 6) Clean the air filter, and check the installation status to see whether it is good or not.
2. Air compressor motor
 - 1) Appearance is clean, motor surface is not damaged, no oil traces. It is possible to use compressed air to blow, use small brush to clean.
 - 2) Connecting wire is not abnormal, well tied.
 - 3) Types of fixed bolts have no phenomenon of loosening, cracking, breaking down.
 - 4) Bearing does not unusual sound when operating.
 - 5) Rotation direction of the cooling fans is correct.
3. Air compressor starter
 - 1) Appearance and installation condition of electrical components are good, conductor is not aged, damaged.
 - 2) Door look is normal, cabinet body is tightly sealed.
4. Film dryer
 - 1) Appearance is clean and installation condition is good, connecting wire is tight, conductor is not aged, damaged.
 - 2) Door look is normal, cabinet body is tightly sealed.
5. Components of air brake
 - 1) Gas cylinder, water drainage filter
 - 2) Remove oil substance of air cylinder and water drainage filter, manual drainage equipment works properly.
 - 3) Appearance of equipment is clean
6. Linking hose is not worn out, damaged, roughed, liquid leaked
7. Safety valve, 1-way valves, anti-skid air valves, flow pressure control valve, pressure reducing valve, high pressure valve, stop valve

- 1) Appearance of the device is clean, tight installation without leakage, connecting wire, precision tube usage, work well.
 - 2) Stop valve is not leaked, open and close positions are correct.
 - 3) Safe working value meets the requirements. Pressure of the main air compressor reaches (950-1045) kPa to exhaust air. Pressure of the air compressor before falling to 855kPa, then stop exhausting.
8. Electrical contact point with stop valve
- 1) Appearance of the device is clean, tight installation without leakage, connecting wire, precision tube usage, work well.
 - 2) Stop valve is not leaked, open and close positions are correct.
 - 3) On/off status of the stop valve are consistent with the status display on the screen of driving control panel.
 - 4) Change the display screen on the driving control panel to the screen that is able to see the switching position of stop valves, operation of shifting stop valve lever to make it in the close/open state, then the display state of the stop valve will be unified with its actual state.
9. Brake control cabinet, stop brake control cabinet
- 1) Appearance is clean, installation condition is not abnormal.
 - 2) Plugs, sockets and connecting tubes are well combined.
 - 3) Connecting heads and valve body are not liquid leaked.
 - 4) Cabinet lid is locked normally, cabinet body is well sealed
10. Speed sensor
- 1) Appearance is clean, installation condition is not abnormal.
 - 2) Signal cable is well fixed without damages
11. Basic brake and compressed air brake
- 1) Appearance of compressed air brake is clean, installation is good, hose and tubes of brake are not liquid leaked.
 - 2) Brake pull ring, push buttons and slow release button work properly.
 - 3) The distance between the brake foil and disc brake meet the requirements. Total number of the slot between the two brake foil and brakes disc is: 1.4 ~ 7.2mm.
 - 4) The thickness of the brake foil meets the requirements. Brake foil thickness is > 9mm.

VIII. Bogies

- a. Appearance structure of bogie frame is not abnormal, not broken, or folded.
- b. Appearance of wheel set is not abnormal. The difference in wheel diameters meets criteria. Of the same wheelset is 0.5, of the same bogie is 1.0mm, the same car is 1.0mm. The different distance inside wheelset is not exceeding 2 mm. Standard: $1\ 353 \pm 2\text{mm}$.
- c. Wheelset
 - 1) Appearance of wheelset is not abnormal, rolling tread has no phenomena of scratches, peel-off. If the rolling tread has serious scratches, it must be trimmed. The length of the

- scratch is more than the standard, it must be settled: if the scratch is larger than 75mm and two or more scratches are under 50-70mm; 4 or more places: 25-50mm.
- 2) Wheel rims meet standard of 28-28mm; The thickness of wheel rim meets standard of 22-32mm.
 - 3) The standard prohibits using external diameter of wheel. Limited degree of processing: 770mm; change limit: 764mm.
- d. Appearance of wheel axle is not abnormal, not damaged by overheating, when there is abnormal, it is necessary to use electro-magnet detector for re-confirmation. . Replacement standards: Diameter axle: $\text{Ø}130^{+0.068}_{+0.043}$, diameter of wheelset: $\text{Ø}196^{+0.5}_0$
 - e. Structure of axle bearing
 - i. Appearance is clean, not abnormal. Increase temperature of wheel axle must meet the standard, outer temperature is $+40^{\circ}\text{C}$ or lower.
 - ii. Bolts on the wheel axle are tightened and not abnormal. Use electro-magnet detector to remove bolts/
 - iii. Check outside the wheel axle to see no oil is leaked.
 - iv. Check parts surrounding wheel axle, if serious burn is detected, check the bearing to avoid electric corrosion causing damages to bearing. If the bearing is seriously damaged, it must be replaced.
 - f. Single wire suspension
 - i. Check the appearance to see it is not abnormal. The vertical distance between basic surface of the wheel axle body and basic surface of frame structure is $106\pm 3\text{mm}$.
 - ii. Rubber spring is clean with oil and grease. Metal components are not cracked, broken down. Rubber is fixed without ozone cracks.
 - iii. Appearance of round steel spring is not abnormal, not cracked. Direction of the spring support loop and direction of spring brand are precise.
 - iv. Vertical oil pressure anti-vibration is in good condition. Appearance is not abnormal, not oil leakage. When coating layer of one head of piston is gone, piston must be replaced. Anti-vibration rubber is broken down or seriously deformed, it must be replaced.
 - g. Two wire suspension
 - i. Appearance of air spring is not abnormal, no oil leakage.
 - ii. Between upper plate and air spring base of carbody must be tighten, surface of rubber air bag is not scratched, components are not deformed and damaged.
 - iii. Remove dirt of units, especially, dirt in between upper plate and air spring bag.
 - iv. Check metal elements and rubber bulk to confirm they are not deformed, cracked and broken down. Rubber and metal are well combined.
 - v. Oil or lubricant oil is not contaminated.
 - vi. Replacement standard: the depth of crack is more than 1mm, the depth of damage of air bag is more than 1mm (cloth curtain is exposed) and the depth of cut of rubber bulk is more than 1mm, they must be replaced; If needle is used to pick the

rough surface but no air is escaped, it can be used continuously. Crack of adhesive rubber bulk and metal components is longer than 6mm, radius of rubber crack is exceeded 30%, depth is exceeding 6mm, it must be replaced.

- vii. Check to confirm that the air bag must be inserted inside the lower plate, not in suspension position. Use wet cloth to clean tightened part of the upper, wait for wind pressure to 500KPa, then check the tightened part of the upper and lower to see whether it is leaked or not.
- h. Adjustment of car height: after trimming wheelset, it is necessary to adjust the height of car, adjust the thickness of pad $(235+t)\pm 3\text{mm}$, new adjustment is 1-10mm, after trimming wheelset is 1-45mm (newly made car is 5mm, $240\pm 3\text{mm}$)
- i. Height adjustment valve
 - i. Installation condition is good, appearance is not deformed, no phenomenon of air leakage,
 - ii. Air flow must meet: air charged from 0 bar to 6 bars within 40 seconds or less, air exhausted from 5 bars to 3 bars with 40 seconds or less.
- j. Appearance of pressure valve is not deformed, installation condition is good, no leakage.
- k. Traction equipment
 - i. The distance between lower lid of central latch and traction beam is 10mm, the distance between right, left horizontal barrier and traction beam is 20_{0+2} mm , the distance between side horizontal barrier and traction beam is 10_{0+2} mm , anti-vibration rubber is not cracked and deformed seriously.
 - ii. Check the horizontal oil pressure anti-vibration is not deformed, oil is not leaked, if the coating layer of piston level is gone, it must be added. When anti-vibration rubber is cracked, broken or deformed seriously, replace it.
 - iii. Appearance of horizontal barrier is not deformed; spring is not deformed, cracked or broken.
 - iv. Reference standard for spring parameter: $\delta(50\text{kN}) - \delta(0) = 20\pm 2\text{mm}$ (reference)
 - v. There are no cracks, rubber and metal is not separated.
 - vi. Reference standard: the depth of rubber crack is more than 50mm, length is 30mm, depth of separation of connecting point between rubber and metal is less than 5mm, and length is 20mm.
- l. Traction motor
 - i. Appearance is clean, installation is tight, components especially suspension base is not cracked and deformed.
 - ii. Condition of conductor is good, there is no phenomenon of cracking, breaking, aging and overheating. There is enough distance between cable, carbody frame and car axle.
 - iii. Installation condition of dirt filter is good, outside is not damaged, filter screen is clean without dirt.

- iv. Installation condition of sensor parts is good, conductor is not damaged and work normally.
- v. Inside and outside of bearing are not overheating, lubricant oil is not leaked. Measure the heat of bearing and stator of the motor and simultaneously record, too hot temperature is not allowed.
- m. Installation condition of axle connecting segment is good, not damaged and deformed. The distance between the motor axle and small vertical gear axle is $3\pm 1.5\text{mm}$ (unload train).
- n. Appearance of bear box is not deformed, installation of components is good, there is no phenomenon of oil leakage, oil quality is good, oil level is normal. At the same time check periodically magnet of bolts to see no abnormality and clean up. Model: shell EP80.
- o. Height for installation of obstacle removing structure is $70\pm 2\text{mm}$ (from rail surface)
- p. When train is unloaded, height for installation of ATP aerial is $163\pm 3\text{mm}$ (from rail surface)
- q. All equipment, tube, cable on the bogie must be installed tightly without impacts on train operation when train passes the curve, moreover, enough space is required.
- r. Effect of braking is good, brake shoe is total pressed and able to be removed.
- s. Installation condition of anti-running one side hand leveler is good, not deformed and damaged.

IX. Air conditioner

- a. For the protective layer of condensing machine and evaporator, it is necessary to check and remove dust. If they are too dirty, it is possible to use detergent to clean.
- b. Check the distribution tube of heat exchanger system to see it is not leaked.
- c. Body of air conditioner is clean, drainage systems is not stuck.
- d. Engine operates normally without strange sound, no vibration, surface of fan is not desquamated and rusted.
- e. Use 1000V MΩ meter to measure insulation resistance, resistance values must be greater than the allowed value. Grounding main circuit: 5M; Grounding controlling circuit: 2MΩ; Grounding main circuit with grounding controlling circuit: 2MΩ
- f. Use detergents to clean air filter (including the new air filter grid, wind and cabin, carry out cleaning every 2 weeks.
- g. Electrical control equipment works well, the parts of cables are not aging installing status of bolts is close.
- h. Centrifugal fan operates without strange heat and abnormal vibration, installation condition is good and it works well.

X. Auto electric door of passenger car

- a. Starter
 - 1) Appearance of parts is clean. Installation condition of door control device and engine is good, function is good.

- 2) Belt of gear is installed tightly, appearance is good without cracks and opens, stretch meets the requirements. Adjusted value of the belt tension measurer: 25-1 dash.
 - 3) Installation condition of guide rail, guide roller is good; guide roller works flexibly and smoothly.
 - 4) Condition of door hangers is good, not cracked down.
 - 5) Installation condition of parts of locking system is good, operating flexibly and reliably. Condition of fastening belt look is good. The distance between the fastening belts and lockup is compliant with standard: 2mm (doors closes in right place, look-up will stay locked state level 2).
 - 6) Route switch and conductor are installed tightly; appearance is good, operation is reliable.
 - 7) other fixed components good state
- b. Outside and inside emergency lock cancellation equipment
- 1) Appearance is clean, installation condition of parts is good, operation is flexible and reliable.
 - 2) Route switch and conductor are installed tightly; function is good.
 - 3) Flexibility cable is installed tightly, not worn out, not broken, if necessary, adjust it.
- c. Isolation locking device
- 1) Clean appearance and tight installation
 - 2) Route switch and conductor are installed tightly; function is good.
 - 3) Features of control switch are good.
- d. Other equipment
- 1) Appearance is clean. Plug is installing tightly, no damages.
 - 2) Head of equipment is tight, not burn out.
 - 3) Buzzer is installed tightly, function is good.
 - 4) Test button is installed tightly, function is good.
 - 5) Wiring status is good, not damaged.
 - 6) Open and close function is good, the lights display normally, door controller is normal.
- e. Installation of low guide rail is clean without contaminant, tight installation, good appearance, no deformation.
- f. Door leaf
- 1) Appearance is clean, the door is not serious distortion, no phenomenon of desquamation, good glass installation, no damage. Rubber door is not serious aging, no cracks, no tearing down exceeding the limit. If sealing rubber is broken on 20mm, replace it.
 - 2) The distance between the underside of the door leaf and the track surface must fit requirements: less than 8mm.
 - 3) Check the appearance of under door trench is in good condition.
 - 4) When door is opened, the rubber that seals the recessed part of the door leaf exposed to the frame must fit the requirements, no friction with the outer walls. When door is

opened, the rubber that seals the recessed part of the door leaf exposed to the frame allows to be 3-8mm.

5) Installation condition of door leaf, when necessary, adjust it.

g. Overall

1) Components are clean, good installation status

2) Check the lock of hole lid is good, base needs to install tightly, function is good.

3) Door works flexibly, stably, without vibration. Closing force: $\leq 150\text{N}$

4) Open and close function is good, lights display normally, door controller displays normally. (1) opening time: 3 ± 0.5 seconds, (2) closing time: 3 ± 0.5 seconds, (3) re opening and closing times: 3 times, (4) open: $1300 + 4\text{mm}$

5) Detection of smallest obstacle in compliance with: 25mm (W) x 60mm (height)

XI. Broadcast and passenger information system

a. Surface of broadcast host, broadcast branch, media servers, CCTV host, cabin converter, communications network port, decode distribution unit, UPS, power supply are not dirty, damaged. After switching power on, they work normally.

b. Information devices operate normally.

c. Buttons on the control panel and microphones are in good condition, normal function.

d. Function of broadcasting by human or automatically is normal, sound is clear.

e. LED display inside and outside the train, the LED display at the terminal bright clearly, words are displayed completely and exactly.

f. LCD display monitor in the passenger car work normally

g. Installation condition of loudspeakers in the passenger car is guest, working normally.

h. Progress map installed in the passenger in good installation condition, normal display effects.

i. Surface of emergency alerts is clean, adequate instruction guidance, clear printed words, good installation status; the function of dialog works normally, the images displayed on the cabin monitor screen have normal conversion function.

j. The monitor in the cabin displays normally (entire images in the screen of the camera are displayed), normal conversion.

k. Surveillance cameras in the cabin and passenger car are in good installation status, normal operation.

l. Installation condition of parts of CCTV system parts is good, function of recording, transferring, and projecting is normal. It is possible to obtain relevant information at any time in any segment normally.

XII. Signaling system of the train (ATP, ATO)

1. Encoding itinerary gauge is installed tightly, not loose.

2. Wires to connect parts are not damaged and in good installation condition.

3. Post antenna, DCS antenna and antenna bracket is tightly installed without loosening.

4. Installation condition of switches, buttons, indicator lights, relays is good.

5. Display function of DMI screen is normal.

6. Functions normal speakers.
7. Trunk unit and machine frame is installed tightly, cables are not loose.
8. Brackets of cable connecting head are installed tightly without loosening

XIII. Couplers and shock absorber

- a. Overall installation is tight, parts are not damaged. Coupler head is clean without dirt; traction spring is not cracked. Coupler clamp is not abnormal, abrasion-proof layer of punch is convex, concave.
- b. Combined devices are well lubricated and work flexibly. Cap of air conduit and buffer is clean and not abnormal. Grounding wire is fixed well without loosening and falling.
- c. Bolts to fix round clamp is tight, not loose, inside of bolt hold must be lubricate.
- d. Suspension system, compression equipment, shock absorber, overload protection equipment, carbody plates are installed in good condition, not abnormal.
- e. Check the adjustment condition of coupler. Height of coupler must be compliant with requirement: 600_0^{+10} mm.

XIV. Overall test

- a. Check power on of SIV, request to start SIV, observe contents displayed on the monitor screen and see the voltmeter. Monitor screen displays “auxiliary power source interface”: $380V\pm 5\%$, $110V\pm 3\%$, $24V\pm 3\%$; frequency: $50HZ\pm 1$; voltage: $110V\pm 3\%$.
- b. Check power on of warning electricity, lighting and communication equipment
 - i. Check warnings, communication equipment, electric horn and signal lights, lightings to work well.
 - ii. Check one by one emergency warning unit and telephone. Function of each device must be good. Installation condition of broadcasting and passenger system, including CCTV is good.
 - iii. Manual or automatic broadcasting in passenger car, dialog among drivers is not abnormal, good operation.
 - iv. Equipment inside and outside of the train, terminal station display unit, map function is normal.
- c. Power on to check air conditioner system in normal working condition, operate thru monitor display and confirm.
- d. When power on, it is necessary to confirm when 1 SIV machine stops working, extension power supply function work normally.
- e. Test air supply
- f. Test of motored cars
 - 1) Operation at cabin before and after (check display status)
 - 2) Test of opening with speed over 5km/h
- g. After completion of car adjustment and repair, it is required to fill in related statistic tables.