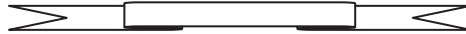


OUTPUT

**HO CHI MINH CITY PEOPLE'S COMMITTEE
MANAGEMENT AUTHORITY FOR URBAN RAILWAYS**



ESTABLISHMENT PROPOSAL

**HO CHI MINH CITY URBAN RAILWAY NO. 1
ONE-MEMBER LIMITED LIABILITY COMPANY**

Table of Contents

A. LEGAL GROUNDS FOR ESTABLISHMENT OF HO CHI MINH CITY URBAN RAILWAY NO.1 ONE-MEMBER LIMITED LIABILITY COMPANY	4
B. NECCESITY FOR ESTABLISHMENT OF HCMC URBAN RAILWAY NO. 1 ONE-MEMBER LIMITED LIABILITY COMPANY.....	5
I. Real-life requirements.....	5
II. Characteristics of urban railways to be taken into account for establishing an operation and maintenance unit	6
III. Specific conditions for Ho Chi Minh City to establish HCMC Urban Railway No. 1 One-member Limited Liability Company.....	6
C. PROJECT PURPOSES.....	7
D. PLAN ON ESTABLISHMENT AND ORGANIZATIONAL STRUCTURE OF THE COMPANY	7
I. Proposed model for the Company.....	7
II. Basic Information of the Company	8
III. The organizational-personnel structure of the Company corresponding to its activities..	9
E. FINANCE REGIME	16
I. Public-utility service companies	16
II. From 2014 to 2017	16
III. From 2018.....	17
F. CHARTER CAPITAL	23
I. From 2014 to 2017	23
II. From 2008	24
G. ASSESSMENT ON FEASIBILITY OF THE COMPANY’S ESTABLISHMENT	25
I. Assessment on socio-economic influences and feasibility of the Company’s establishment in comparison with the planning and development strategies of economic industries, sectors and regions.	25
II. The market conditions, demands and prospects of public transport services provided by the Company, the operating and developing plan of the Company after 5 years since the operation of Ben Thanh – Suoi Tien line:.....	25

III. Capability for providing manpower, materials, power supply, technology, and other necessary conditions for the Company's operation after its establishment	27
H. EMPLOYMENT ATTRACTION AND RECRUITMENT, EMPLOYEE TRAINING AND RETENTION	27
J. SUGGESTIONS AND COMMENTS:.....	29
ANNEX 1(<i>HCMC Urban railway system</i>).....	30
ANNEX 2	31
ANNEX 3 (<i>Estimates of operation expenses for the period of 2014-2017</i>).....	38
ANNEX 4 (<i>Monthly Wage Estimates of the Company for the 2014-2017 period</i>).....	39
ANNEX 5 (<i>Extracts from the related terms on the establishment of the Company in the Meeting Minutes signed on November 26th, 2006 between JBIC and the Government of Socialist Republic of Vietnam</i>)	41
ANNEX 6 (<i>Official Notice No. 317/TB-VPCP of the Government Office dated August 8th, 2014 on conclusions of Deputy Prime Minister Hoang Trung Hai at a cabinet meeting on the implementation of the urban railway project of Ben Thanh – Suoi Tien Line and being reported on the urban railway project of Ho Chi Minh City</i>)	42

A. LEGAL GROUNDS FOR ESTABLISHMENT OF HO CHI MINH CITY URBAN RAILWAY NO.1 ONE-MEMBER LIMITED LIABILITY COMPANY

- Law on Railway No. 35/2005/QH11 dated June 27th, 2005;
- Law on Enterprises No. 60/2005/QH dated November 29th, 2005;
- Minutes of Discussion between Japan Bank for International Cooperation and the Government of Vietnam dated November 16th, 2006 regarding the project of Ho Chi Minh City urban railway project (Ben Thanh - Suoi Tien Line);
- Decree No. 172/2013/ND-CP of the Government dated November 13th, 2013 on establishment, reorganization and dissolution of State-owned one-member limited liability companies and their subsidiaries being one-member limited liability company;
- Decree No. 130/2013/ND-CP of the Government dated October 16th, 2013 on production and provision of public-utility products and services;
- Decree No. 71/2013/ND-CP of the Government dated November 7th, 2013 on State-owned capital investment in enterprises and finance management of 100%-State-owned enterprises;
- Decree No. 49/2013/ND-CP of the Government dated May 14th, 2013 giving detailed implementation of a number of articles of the Labor Code on wages;
- Decree No. 50/2013/ND-CP of the Government dated May 14th, 2013 providing management of employment, wages and bonuses for employees working in State-owned one-member limited liability companies; and Decree No. 51/2013/ND-CP of the Government dated May 14th, 2013 providing wages, remunerations, bonuses for members of the Member's Council, company Chairman, company Inspector(s), General Director or Director, Deputy General Director or Deputy Director and Chief Accountant of State-owned one-member limited liability companies;
- Decree No. 109/2006/ND-CP of the Government dated September 22th, 2006 providing and giving detailed implementation of a number of articles of the Law on Railway;
- Decision No. 568/QĐ-TTg of the Prime Minister dated April 8th, 2013 approving the master plan on development of transportation of Ho Chi Minh City ("HCMC") by the year of 2020 with a vision after the year of 2020;
- Decision No. 37/2014/QĐ-TTg of the Prime Minister dated June 18th, 2014 on criteria and lists for classification of State-owned enterprises;
- Official Notice No. 317/TB-VPCP of the Government Office dated August 8th, 2014 on conclusions of Deputy Prime Minister Hoang Trung Hai at a cabinet meeting on the implementation of the urban railway project of Ben Thanh – Suoi Tien Line and being reported on the urban railway project of Ho Chi Minh City;
- Circular No. 220/2013/TT-BTC of the Ministry of Finance dated December 31st, 2013 giving detailed implementation of a number of articles of Decree No. 71/2013/ND-CP of the Government dated November 7th, 2013 on State-owned capital investment in enterprises and finance management of 100%-State-owned enterprises;
- Circular No. 18/2013/TT-BLĐTBXH of the Ministry of Labour, War Invalids and Social Affairs dated September 9th, 2013 giving detailed implementation of management

of employment, wages and bonuses of employees in State-owned one-member limited liability companies; and Circular No. 19/2013/TT-BLDTBXH of the Ministry of Labour, War Invalids and Social Affairs dated September 9th, 2013 giving detailed implementation of wages, remunerations, bonuses for members of the Member's Council, the company Chairman, company Inspector(s), General Director or Director, Vice General Director or Vice Director, Chief Accountant of State-owned one-member limited liability companies;

- Action Plan No. 12-CTrHD/TU of HCMC Committee Party dated March 16th, 2011 on implementation of the Resolution of the 9th HCMC Party Congress on the traffic congestion reduction program of the 2011-2015 period and the Decision No. 25/2011/QD-UBND of HCMC People's Committee dated May 14th, 2011 stipulating the implementation plan of the Resolution of the 9th HCMC Party Congress on the traffic congestion reduction program of the 2011-2015 period with a vision of 2020.

- Decision No. 1453/QD-UBND of HCMC People's Committee dated April 6th, 2007 approving the investment project on construction of the Ben Thanh – Suoi Tien urban railway line;

- Decision No. 119/2007/QD-UBND of HCMC People's Committee dated September 13th, 2007 on establishment of the Management Authority for Urban Railways under HCMC People's Committee;

- Decision No. 4474/QD-UBND of HCMC People's Committee dated October 11th, 2010 approving the investment project on construction of the No. 2 HCMC urban underground railway (Ben Thanh – Tham Luong Line);

- Decision No. 51/2013/QD-UBND of HCMC People's Committee dated November 22th, 2013 stipulating the Regulations on organization and operation of the Management Authority for Urban Railways;

- Official Letter No. 3566/UBND-DTMT of HCMC People's Committee dated July 15th, 2013 giving an approval in-principle for the “Establishment plan of Operation and Maintenance Company for Urban Railways in the city”; assigning the Enterprise Renovation Management Board to be in charge hereof and to cooperate with the Department of Home Affairs and relevant bodies for instructing Management Authority for Urban Railways for the purpose of implementing the establishment proposal of Operation and Maintenance Company for Urban railways in Ho Chi Minh City;

- Official Notice No. 649/TB-VP of HCMC People's Committee Office dated August 19th, 2014 on conclusions of HCMC Chairman Le Hoang Quan on establishment of the urban railway one-member limited liability company.

B. NECCESSITY FOR ESTABLISHMENT OF HCMC URBAN RAILWAY NO. 1 ONE-MEMBER LIMITED LIABILITY COMPANY

I. Real-life requirements

According to the master plan on development of transportation of Ho Chi Minh City by the year of 2010 with a vision after the year of 2020 approved by the Prime Minister under the Decision No. 568/QD-TTg dated August 4th, 2013, HCMC shall construct 08 radial and ring urban railway lines to mutually link the central areas of the city and 03 tramways or monorails (*Please refer to Annex 1*).

Among these above, the No 1. urban railway line (from Ben Thanh – to Suoi Tien) is favourable by the Government by receiving a ODA loan from the Japanese government for construction early than others. The construction of elevated section of the project was started from the end of 2012 and is planned to be finished in 2017. The design works and provision of electromechanical equipment, rails, railcars were started from the middle of 2013 and is planned to be finished in 2018. The selection of contractors for construction of the underground lines is promptly carried out. As scheduled, the No. 1 line shall be completely constructed and started its operation from 2018.

The urban railway line No. 2 (for the 1st stage, it shall be from Ben Thanh to Tham Luong) is under the implementation of technical design, contractor selection for construction works and provision of mechanic electronic equipment and is planned to be finished after 2018. The other railway urban lines are under the stage of investment planning in order to acquire foreign capital sources under which the urban railway line No. 5 is already supported by the undertakings to provide ODA capital from the Spanish government, Asian Development Bank and European Investment Bank.

II. Characteristics of urban railways to be taken into account for establishing an operation and maintenance unit

Normally the road construction works shall be operated and exploited after the completion of construction works. However, the operation and development of urban railways require pre-operation jobs done, including staff recruitment, basic technical training for operation and maintenance tasks, establishment of organizational structure and preparation of rules and regulations for its management and trial run.

Based on the researches made from the countries that successfully established and developed the urban railways, such as Japan (Tokyo City), Indonesia (Jakarta City), India (Delhi City), Thailand (Bangkok City), the units in charge of construction of urban railways shall also conduct the operation and maintenance of such railways. In some cases, the mentioned company is established at the beginning in order to get involved in design and construction works and preparation of necessary conditions for operation and maintenance tasks when the railways are operated.

In summary, as experienced by other countries, the units in charge of operation and maintenance of urban railways should be established some [many] years early before operating and exploiting such lines. These units shall get involved in construction tasks and accept hand-over of parts of finished works and prepare for the operation of the urban railway when it is completed.

III. Specific conditions for Ho Chi Minh City to establish HCMC Urban Railway No. 1 One-member Limited Liability Company

According to the Minutes of Discussion entered into on November 26th, 2006 between Japan Bank for International Cooperation (JBIC), now known as Japan International Cooperation Agency (JICA), and the Government of Social Republic of Vietnam (being the basis for negotiating and conducting the ODA Loan Agreement for Ben Thanh – Suoi Tien urban railway), the urban railway company under HCMC People's Committee is established at least three years early before operating and exploiting Ben Thanh – Suoi Tien line (as experienced by Japan which has developed its urban railway system for a hundred years.). This is one of compulsory conditions stated in the bilateral minutes required by Japan in order to enter into the ODA Loan Agreement to finance this project.

During the 2011-2013 period, the Japan International Cooperation Agency (JICA) also sponsored HCMC to develop the Project on Technical support to establishment of Ho Chi Minh City Urban Railway Operation and Maintenance Company. This project was already studied and proposed with general key matters for establishment, organization and operation of HCMC Urban Railway Company; as well as preparation for accepting hand-over of the first railway line (Ben Thanh – Suoi Tien line), operation and maintenance of such line (as a model of other lines and of the whole system). Once again, Japanese experts of this project propose that such urban railway company should be established as soon as possible, at least three years early before the operation of the first line.

As scheduled, JICA shall continue supporting HCMC for advanced researches, personnel training and preparation for HCMC Urban Railway Company to accept hand-over of and operate Ben Thanh – Suoi Tien line expectedly around the year of 2018. With regard to other urban railway lines currently under the stage of contractor selection or investment project planning, the research and preparation for each of them are being conducted (some of them are pending or reach no outcome yet).

In summary, based on the schedule for operation and development of the first urban railway line, Ben Thanh – Suoi Tien line shall start its operation from 2018 then the urban railway company should be established from 2014 to duly conduct the preparation of necessary resources and technical conditions in order to accept hand-over of, safely operate and exploit such railway lines, and to become a model of the up-coming lines of the HCMC urban railway system.

C. PROJECT PURPOSES

The project hereby proposes overall and essential matters for establishment and its organizational structure of HCMC Urban Railway No. 1 One-member Limited Liability Company (*hereinafter referred to as the “Company”*); accepting hand-over of, conducting the operation and maintenance of the first urban railway line of the city (Ben Thanh – Suoi Tien line) which are under construction and planned to be completed around 2018. After that, the Company shall accept hand-over of and conduct the operation and maintenance of other lines of HCMC urban railway system.

D. PLAN ON ESTABLISHMENT AND ORGANIZATIONAL STRUCTURE OF THE COMPANY

I. Proposed model for the Company

The proposed model for the Company is prepared based on the applicable regulations, as follows:

- Clause 2 Article 55 of the Law on Railways (2005) provides that “the provincial people’s committee shall be incharge of investment, contruction, management and operation of the urban railway”.

- Decree No. 172/2013/ND-CP of the Government dated Novemver 13th, 2013 on establishment, reorganization and dissolution of State-owned one-member limited liability companies and its subsidiaries being one-member limited liability companies (Items c and d, Article 5) provides that: “in the sectors of management and development of urban railway

infrastructures and management of railway transport, it is considered to set up limited liability companies”;

– Decision No. 37/2014/QĐ-TTg of the Prime Minister dated June 18th, 2014 on criteria and lists for classification of State-owned enterprises provides that: “the State holds 100% of charter capital of the enterprises involving management and development of urban railway infrastructures and operation of urban railway transport”.

In conclusion, the model for the Company is ***one-member limited liability company wholly owned by the State and under the HCMC People’s Committee.***

II. Basic Information of the Company

1. Company name:

- Vietnamese name: Công ty trách nhiệm hữu hạn một thành viên Đường sắt Đô thị số 1 Thành phố Hồ Chí Minh
- English name: Ho Chi Minh City Urban Railways No.1 Company Limited;
- Abbreviated name: HURC1;

2. Owner: Ho Chi Minh City People’s Committee;

3. Type: 100%-State-owned one-member limited liability company;

4. Head office: No. 29 Le Quy Don, Ward 7, District 3, Ho Chi Minh City (being the head office of Ho Chi Minh City Management Authority for Urban Railways);

5. Operation time: 99 years from the date of obtaining the Decision on establishment of the Company

6. Scope of Business:

- Major business lines: providing public-utility services of public passenger transport service by subway;

(Public passenger transport service by subway is one type of urban public transport services, included in list of public-utility products and services stipulated in Decree No. 130/2013/ND-CP of the Government dated October 16th, 2013. Its HS code is H49311 as provided in Decision No. 10/2007/QĐ-TTg of the Prime Minister dated January 23rd, 2007 issuing the Vietnam Standard Industrial Classification)

- Auxiliary business lines: other business lines related to the major scope of business, such as advertising, premises lease, passenger services, parking-lot lease, lease of premises for installation of telecommunication cables, etc. in order to make up for operation costs of main business lines.

7. Assigned main tasks

*** 2014 – 2017 period** (to essentially preparing for the operation and maintenance of the first urban railway line in Ho Chi Minh City, i.e. Ben Thanh – Suoi Tien Line)

In this stage, the Company shall:

- Prepare the recruitment programs and plans, execute labour contracts for urban railway operation management;

- Prepare the plans, manage and implement staff training for management of urban railway operation; conduct cooperation and affiliation activities for urban railway operation training.

- Accept and implement programs, projects regarding to urban railway operation management sponsored for Ho Chi Minh City through MAUR;

- Prepare for urban railway business activities;

- Prepare for non-fare business activities (i.e. other business activities beyond the metro operation) (if assigned by HCMC People's Committee)

- Guarantee to fully collect and comply with regulations on train operation and dispatch;

*** From 2018:**

The Company shall:

- Manage and exploit HCMC urban railway lines;

- Guarantee the quality of services of passenger transport by urban railway;

- Provide safe and friendly transport services for passengers;

- Provide internal shuttle bus services and bus for connecting urban railways;

- Train employees directly involved in the operation, development and maintenance of urban railways system equipment;

- Implement types of non-fare business (e.g. advertising, premises lease, parking-lot lease, lease of premises for installation of telecommunication cables and other types in conformity with applicable regulations);

- Conduct tasks assigned by HCMC People's Committee.

III. The organizational-personnel structure of the Company corresponding to its activities

As for the 2014 – 2017 period, the Company shall conduct preparation works to ensure the operation of Ben Thanh – Suoi Tien urban railway line when this line is completed and started its operation as scheduled from 2018. Therefore, we suggest the streamlined management structure which shall be gradually improved based on the assigned tasks and following the time schedule and in order to reach the expected personnel structure with 394 employees in total (for Ben Thanh – Suoi Tien Line), particularly:

2014 – 2015:

*** The operation of the Company**

The Company is planned to be established in 2014. From 2014 to 2015, the Company shall conduct the following tasks:

- Establish and improve relevant regulations and manage organizational structure of the Company;

- Accept and implement tasks related to JICA's support on "Preparation of Management System of Urban Railways in Ho Chi Minh City" (as planned to be implemented in 2 years, 2014-2015)

- Accept training programs for urban railway operation management;

- Implement procedures for application and acceptance of Technical Cooperation Phase 2 for Company Establishment Support (as planned to be carried out in 2016-2017);
- Cooperate with Management Authority of Urban Railways for the operation and maintenance of urban railways lines;
- Prepare training plans of human resources for the operation of urban railways;
- Cooperate with Management Authority of Urban Railways regarding matters of connecting, integrating urban railways system to other types of public transport;
- Update and keep records on the construction progress of urban railway project No.1 and No.2.

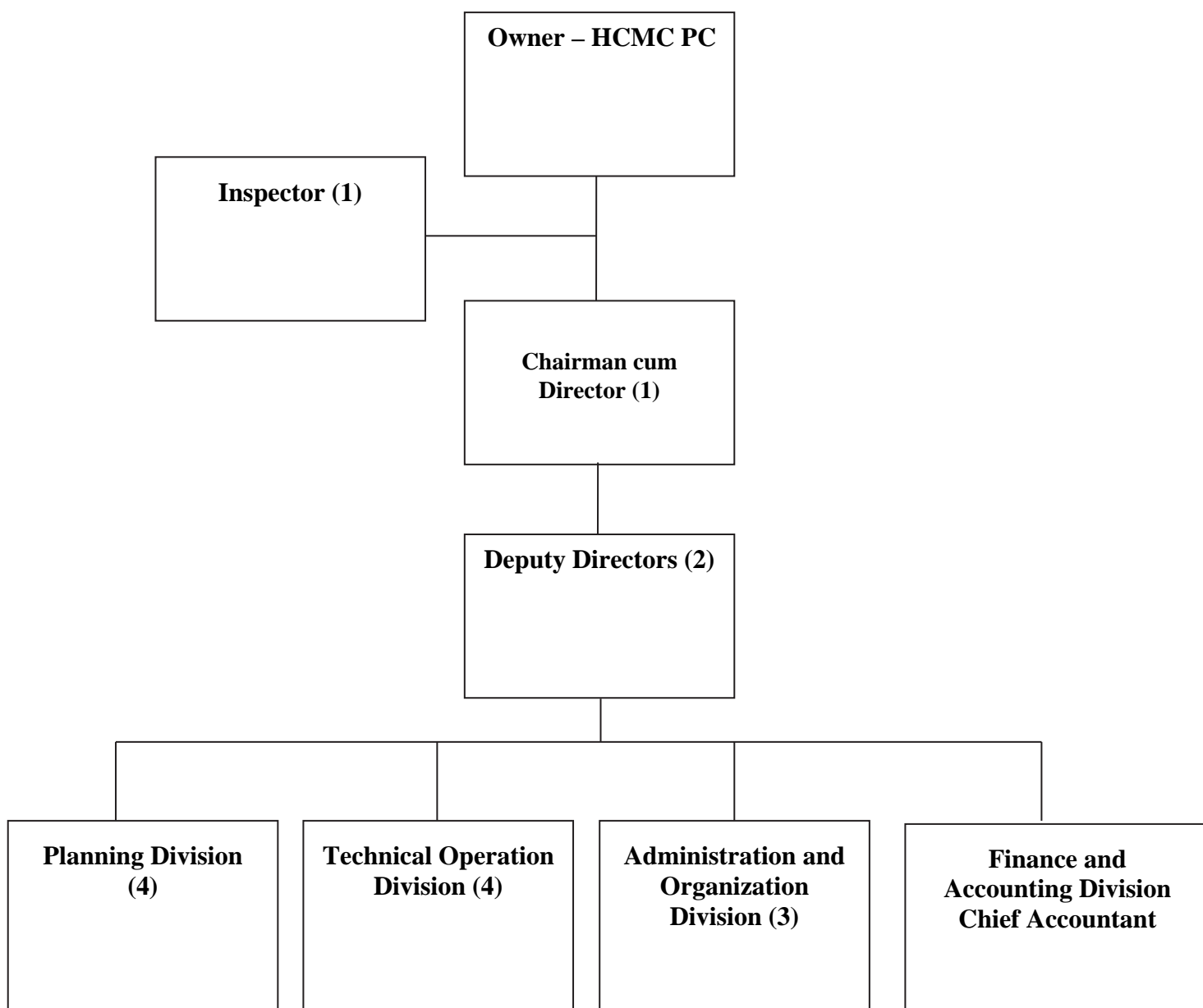
*** The organizational structure of the Company**

At the beginning, the number of employees shall be 17, including:

- 01 Chairman cum Director;
- 01 Inspector;
- 02 Deputy Directors;
- 13 employees working as managers in the following departments: Administration and Organization Division; Planning; Technical Operations; Finance and Accounting;

These above employees are moved mainly from Management Authority of Urban Railways, while the others will be further recruited (if necessary) according to the demand of tasks.

The initial organizational structure when the Company is established shall be:



Note: (number): for showing the number of employees in each division

In 2016

*** The Operation of Company:**

Apart from the ongoing tasks from the period of 2014-2015, the Company shall conduct the following assignments:

- Accepting and implementing the Technical Cooperation Phase 2 for Company Establishment Support sponsored by JICA (Japan) and proceed the researches related to the operation, maintenance of urban railways and the training programs sponsored by JICA;

- Carrying out the recruitment and training plans for employees involved in the operation and maintenance of urban railways (expectedly focused on theory training and advanced training for train drivers qualified by degrees of technical colleagues to be lectures for the next ranks of train drivers).

- Updating the construction progress of urban railway No. 1 line and No. 2 line;

- Coordinating with the contractors of No. 1 Line for technical training of operation and maintenance.

*** The organizational structure of the Company:**

The number of employees is expected to be increased into 107 employees, including:

- 01 Chairman cum Director;

- 01 Inspector;

- 02 Deputy Directors;

- 36 employees working as managers (in which the increase in employees for each daily task shall be gradually defined for co-ordinating with Japanese experts in projects sponsored by JICA and training programs);

- 67 employees in executive operation and maintenance of urban railways, including 1 rail operation manager in the site, 14 train drivers, 5 train station staffs, 1 maintenance staff, 7 locomotive – railcars maintenance staffs; and 39 rail – architecture - electromechanical maintenance staffs.

In 2017

*** The Operation of Company:**

The Company shall recruit the full number of train drivers (expectedly qualified with degrees by technical colleagues as provided by the applicable regulations), proceed additional theory training aimed to train driving practice of the main line from the middle of 2017 (upon the completion of the elevated line), accomplish the training of train station staffs (expectedly under the model under which the senior staff shall instruct coming staff); enhance the technical training for maintenance staffs from relevant contractors of No. 1 Line; accept hand-over of infrastructures and facilities of No. 1 railway line; and update the construction progress of No. 2 railway line.

The Company shall progressively improve the management system of the Company; standardize the internal regulations of the Company, finish the recruitment and training of staffs qualified for the operation and maintenance of No. 1 Line; and be prepared for the non-

fare business activities (e.g. other business lines beyond the urban railway operation business);

*** The organizational structure until the end of 2017**

The total employees are 394.

At the headquarter: 102 employees

- Members' Council: 03 employees;
- Inspectors: 03 employees;
- Director Board: 04 employees;
- Administration and Legal Division: 07 employees;
- Human Resources Division: 03 employees;
- Finance and Accounting Division, Chief Accountant: 07 employees;
- Planning and Investment Division: 07 employees;
- Supplies and Equipment and Services Division: 03 employees;
- Business and Public Relations Division: 12 employees;
- Technical Operation Division: 29 employees;
- Safety and Operation Management Division: 24 employees (including 19 employees in the Operation Control Center);

Operation Unit (Line 1): 213 employees;

Maintenance Unit (Unit 1): 79 employees;

The details of company personnel shall be specified in Annex 2.

From 2018

*** The Operation of Company**

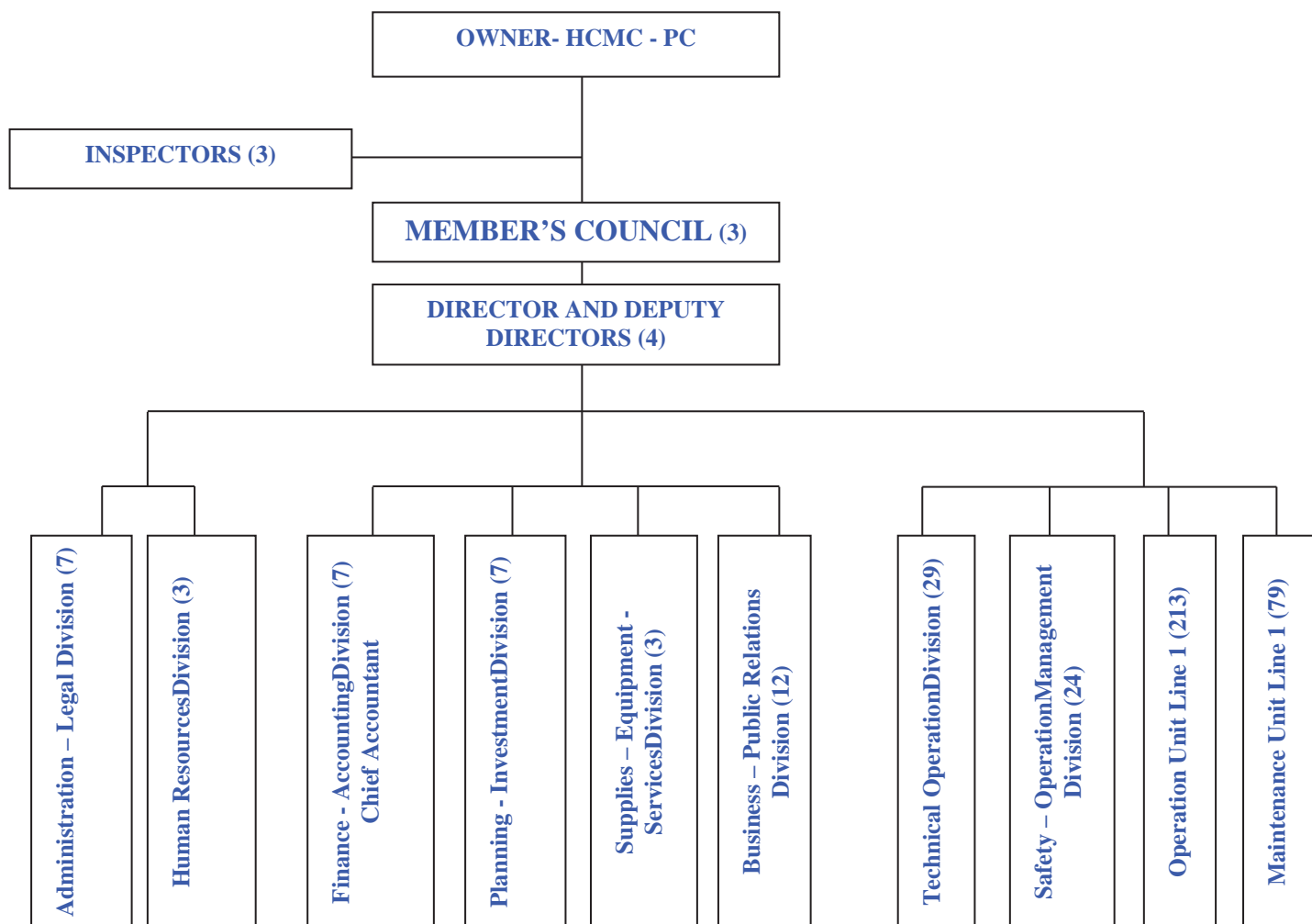
The Company provide public-utility services, being urban railway transport service, and related services as assigned by HCMC People's Committee, which shall be initially provided at Ben Thanh – Suoi Tien line;

*** The Organizational Structure of Company**

The total number of employees is 394 (which are firstly of the operation and maintenance of Ben Thanh – Suoi Tien line).

The detailed employee organization of the Company from 2018; the estimated number of employees directly involved in the operation of Ben Thanh – Suoi Tien line and the personnel references for the operation and maintenance of urban railways in some specific countries shall be indicated in Annex 2;

The chart of organizational structure from 2018 as below:



Note: (number): for showing the number of employees in each division

Table 1: the estimated number of employees in years

Unit: persons

Year (Calculated until year end)	2014	2015	2016	2017	2018
Employees of management positions (at the Company's headquarter in the future)	17	17	40	102	102
Inspector(s)	1	1	1	3	3
The Company Chairman or the Member's Council	1 (*)	1 (*)	1 (*)	3	3
Director(s)				1	1
Deputy Directors	2	2	2	3	3
Administration – Legal Division	3	3	5	7	7
Human Resources Division			3	3	3
Finance – Accounting Division – Chief Accountant	2	2	5	7	7
Planning – Investment Division	4	4	4	7	7
Supplies – Equipment – Services Division	-	-	-	3	3
Business – Public Relations Division	-	-	6	12	12
Technical Operation Division	4	4	9	29	29
Safety – Operation Management Division	-	-	4	24	24
Employees in operation, maintenance of urban railways (at site of Company in the future)	0	0	67	292	292
Train Operation Manager	-	-	1	1	1
Train drivers		-	14	56	56
Train station staffs	-	-	5	156	156
Maintenance staffs	-	-	1	1	1
Locomotive – railcars maintenance staffs	-	-	07	13	13
Rail – architecture - electromechanical maintenance staffs	-	-	39	65	65
The total number of employees	17	17	107	394	394

Note: (*) Chairman shall hold Director position concurrently;

E. FINANCE REGIME

I. Public-utility service companies

According to the Decree 130/2013/ND-CP of the Government dated October 16th, 2013 on production and provision of public-utility products and services:

“Public transport services in urban areas” are listed as public-utility products and services. Furthermore the urban railway transport service for passenger is one of “public transport services in urban areas”, as a result, such services provided by the Company shall be deemed as public-utility products and services;

“Management and maintenance of national railway infrastructure systems” are listed as public-utility products and services. Management and maintenance of urban railway infrastructure systems are similar with such services in nature but not clearly listed as public-utility products and services, therefore it should be reported to the Prime Minister for consideration and final decision;

HCMC People’s Committee shall decide the production method (by assigned plan, order or tender) for public-utility products and services covered by the city budget expenditure estimates and assign it to the Company for implementation as prescribed, and decide specific price subsidy and support levels for production and provision of public-utility products (according to Articles 6 and 7);

The Company is a State-owned one-member limited liability company with public-welfare tasks so that the State shall provide adequate capital for the formation of assets to serve the production and provision of public-utility products and services (according to Article 9).

II. From 2014 to 2017

The Company shall prepare for conducting the operation and maintenance of the first urban railway line (Ben Thanh – Suoi Tien line), act as a partner for accepting and implementing projects and programs related to the urban railway operation provided by the sponsors. We hereby suggest HCMC People’s Committee approving the method of “assigned plan” to the Company (which produces and provides public-utility services). The Company shall be fully financed by the city budget because the Company produces no profits during this period.

During this period, the Company shall need the supply of facilities, office equipment, employees’ salary payment, other relevant service fees, costs for urban railway, etc. The estimated expenses and costs of the Company for the period of 2014 - 2017 shall be as below:

Table 2: The Company's estimated operational costs expenses from 2014 - 2017

(The unit: VND million)

Categories		2014	2015	2016	2017	Total
I	Salary payment for employees, related service costs, costs for urban railway promotion, training costs	2,086	2,086	8,558	29,828	42,557
1	Salary payment for employees	1,418	1,418	6,978	24,460	34,274
2	Related service fees	278	278	602	956	2,114
3	Expenses for advertising/promotion of urban railways	0	0	0	1,500	1,500
4	Training costs	200	200	200	200	800
5	Provision costs (10% the item from 1 -4)	190	190	778	2,712	3,869
II	Assets and office equipment	2,399	2,072	3,760	5,539	13,770
1	Assets and equipment Costs	2,181	1,884	3,418	5,035	12,518
2	Provision Costs (10% of the item 1)	218	188	342	504	1,252
Total (I+II)		4,485	4,158	12,318	35,366	56,327

Notes:

- The Company's estimated expenses and costs in years are described in Annex 3;
- The details of salary payment for the 2014 – 2017 period is described in Annex 4;

III. From 2018

From 2018, the construction works of Ben Thanh – Suoi Tien line shall be finished and the Company shall accept hand-over of finished project and implement the operation and maintenance hereof. Also from 2018, the revenues from ticket sale and non-fare business shall be gradually be generated. Public transport services provided by the Company shall be subsidized by HCMC People's Committee.

1. The estimated investment capital for the Company

- a) The estimated initial investment capital

The total initial investment capital for the Company shall be grounded on the investment capital of BenThanh – Suoi Tien urban railway project.

Table 3: The estimated initial investment capital

Categories	Values according to the approved project	Notes
Infrastructures (Ben Thanh – Suoi Tien line)		
The 2.6-km underground line (including the provision and installation of elavators and escalators for stations and ventilation system)	9,228.8	As distributed by the central government budget
The 17.1-km elevated line (including the construction of depots,the provision and installation of the elavators, escalators in the stations)	12,618.6	
Equipment (Ben Thanh – Suoi Tien line)		
The electromechanical equipment, rails, locomotive, railcars (excluding elavators, escalators in the metro station and ventilation system for underground line) and the maintenance hereof	16,663.8	- As Reloaned by HCMC (as scheduled) - Being investment capital of the owner of the Company.
The information technology system for the Company’s office	124.6	
Total	38,635.8	

Notes: The above values has already included physical contingencies and price contingencies.

b) The finance policies on the total investment capital of the Company

– The urban railways infrastructures (including tunnel, overhead structure, rails, etc.) are financed by the Government and delivered to Ho Chi Minh City. The electromechanical equipment, locomotive – railcars (items related to operation and maintenance of urban railways) are financed through a reloan by the HCMC People's Committee from the Government. HCMC has the responsibility to pay for the amount reloaned from the Government.

– The urban railway infrastrucures are owned by HCMC People's Committee. HCMC People's Committee shall assign tasks to its department for management and maintenance duties.

– The electromechanical equipment, locomotive – railcars (items related to operation and maintenance of urban railways) are initially invested by HCMC to the Company; thus the armotization of such properties shall be conducted accordingly.

– The expenses for daily operation and maintenance shall be deducted from the Company's revenues;

– The replacement of electromechanical equipment and locomative – railcars (in

case that the operational duration is over 30 years) shall be paid by the Company's accumulated monies, if not equivalent, HCMC People's Committee shall support them additionally.

2. The long-term finance analysis of the Company

The urban railways, without profit motive, shall aim to improve public-welfare, provide the solution to beating traffic congestion, to contribute to socioeconomic development of the city, etc. For the purpose of attracting passengers, the ticket prices need to be set at the affordable level in favour of the city residents's capacity. Therefore, according to the researches by Japanese experts, the revenues from the ticket sale are enough for covering the costs and expenses for operation and exploitation of such line but might not afford the capital recovery of urban railways.

The urban railway is obliged to meet the high demands of safety in order to enhance mass transport. To satisfy this requirement, the maintenance and repair (periodic repair, , major repair, overhaul, etc.) and renewal of equipment and machines shall be carry out based on the technical requirements. According to the experiences of Japan and other countries which has already operated thier urban railways ha, the electromechanical equipment, locomative – railcars might be fully replaced after 30 year of operation and exploitation. Thus, for the overview, the finance analysis of urban railways should be conducted for the period of 30 years.

a) Cost and expenses

Operational expenses and costs include employees' salary payment, utilities and sanitary costs, depreciation of fix assets, etc. Moreover, because of the characteristic "the renewal/replacement of electromechanical equipment based on its circle of life" applied the urban railway industry (such as the automatic toll system needs to be replaced after 5 years, respectively 10 years for electrification system, 20 years for telecommunications or signalling system, rails; and 30 years for locomativerailcars replacement), the armotization of electromechanical equipment is also carried out (also considered as costs and expenses).

b) Revenues

At first, the Company shall operate and exploit commercially Ben Thanh – Suoi Tien urban railway line. The ticket prices for passengers are calculated as a sum of entrance fee (EF) and travel distance (TD) of each km as an equation: $\text{Fare} = EF + 10\% EF * TD$

Grounded on the estimated number of passeners of this line (as supposed to be 90% in reality), there should be researched for proposing the rate of passenger fare provided that total revenues arising from from passenger fare and non-fare business (which estimatedly reach 1.0% of revenues arising from fare sale for the period 2018-2022; reach 3.0% of revenues from fare sale for the period 2023-2027; reach 5.0% of revenues from 2028) are sufficient for the costs of operation and maintenance of the line (including employees' salary payment, payment for energy, ultilities, spare parts and equipment). Accordingly, the passenger fare of urban railway for the first operational year is estimated as: Ticket price = VND8,000 + (plus) VND800 * (multiply) a number of kilometres of travel distance. After the first year, the rate of fare prices shall be revised for every 2 years according to inflation rate (estimated around 7% per year). As estimated, the maximum fare price for passenger non-stop

travelling from Ben Thanh (km 0+000 route) to Suoi Tien station (Km 18+821route) shall be VND23,000 during the first year of operation.

The determination of official fare price and the subsidization by HCMC in favour of passengers shall be made 01 year before the operation and exploitation of urban railway. In the case that HCMC People's Committee lowers the fare price to attract passengers, the Company shall be entitled to the price subsidization in accordance with the applicable regulations.

c) An overview of the Company's finance status as indicated in the following tables and figures.

Table 4: Finance status

Unit: USD million

Year	Estimated number of passengers (thousand persons/day)	Revenues	Operation and maintenance costs	Amortization	income after tax
2018	156	35.3	18.5	60.3	-43.4
2019	172	38.7	20.6	60.3	-42.2
2020	190	53.2	23.2	60.3	-30.2
2021	314	88.1	25.9	60.9	1.2
2022	335	102.9	28.8	60.9	13.1
2023	339	104.0	38.8	70.0	-4.8
2024	344	114.9	53.4	63.2	-1.7
2025	349	116.2	63.0	63.2	-10.1
2026	354	137.2	67.5	64.3	5.2
2027	369	142.6	75.4	64.3	2.8
2028	401	165.9	84.2	84.1	-2.4
2029	414	171.2	96.5	84.1	1.8
2030	451	210.8	104.1	72.7	32.3
2031	460	214.7	115.2	72.7	25.4
2032	473	246.6	127.5	72.7	44.1
2033	487	253.3	152.1	94.1	6.8
2034	500	287.2	157.2	94.1	31.5
2035	513	294.2	168.6	94.1	23.6
2036	524	328.5	181.2	95.6	38.8
2037	533	334.1	200.8	95.6	28.3
2038	541	383.1	209.3	112.5	45.9
2039	546	386.2	225.0	103.9	42.9
2040	551	419.2	242.1	104.3	54.6
2041	556	422.7	282.4	103.2	27.8
2042	558	469.1	280.7	103.2	63.9
2043	563	473.1	302.2	92.3	58.9
2044	568	522.6	335.4	92.3	71.2
2045	572	526.8	371.3	92.3	47.4
2046	574	590.7	389.8	92.3	81.5
2047	576	592.7	420.3	92.3	60.1
2048	578	641.5	453.7	120.5	50.5
2049	580	643.7	525.3	120.5	-2.2
2050	580	722.2	529.3	121.5	53.5
2051	580	722.2	571.8	119.3	23.3

Figure 1: Revenues and expenses

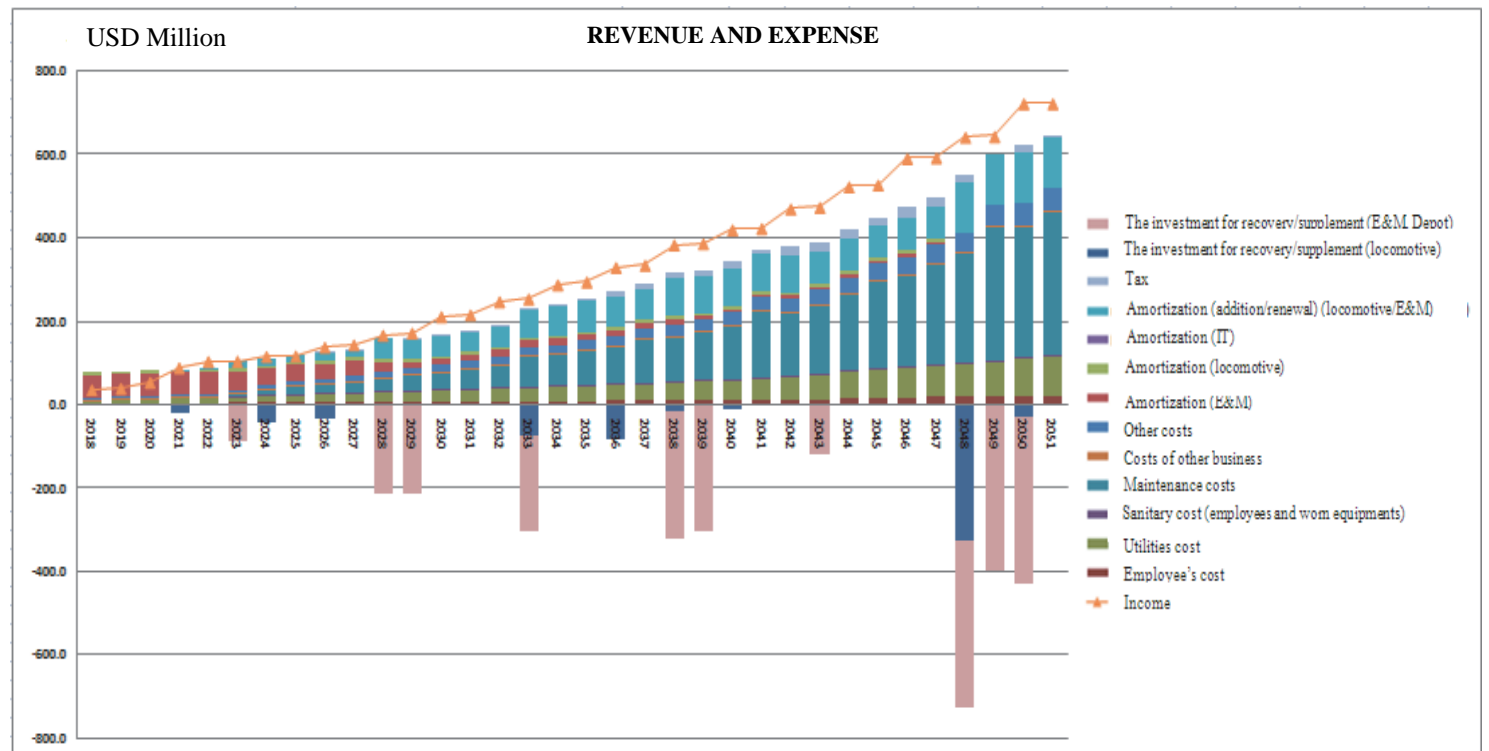
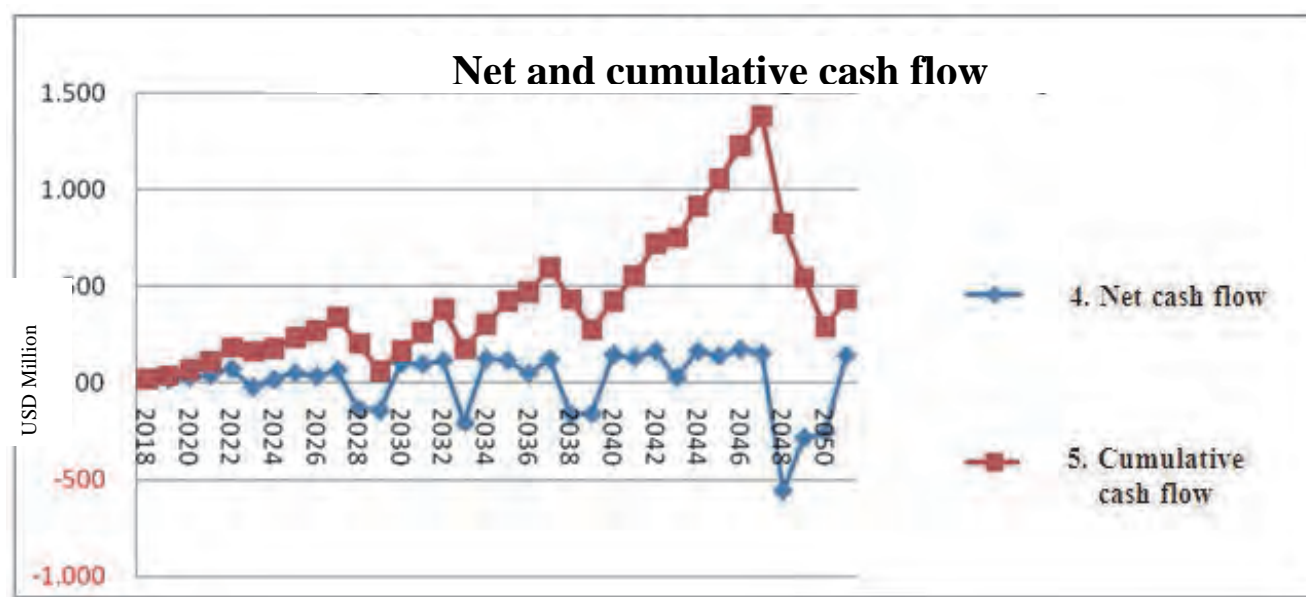


Table 5: The cash flow

Unit: USD million

Year	Cash flow from operating activities	Cash flow from replacement/purchase of equipment/material	Net cash flow	Accumulative cash flow
2018	16.9	0.0	16.9	16.9
2019	18.1	0.0	18.1	35.0
2020	30.1	0.0	30.1	65.1
2021	62.1	-20.6	41.5	106.6
2022	74.0	0.0	74.0	180.6
2023	65.2	-86.0	-20.8	159.8
2024	61.5	-42.7	18.8	178.7
2025	53.1	0.0	53.1	231.8
2026	69.5	-32.8	36.7	268.5
2027	67.1	0.0	67.1	335.6
2028	81.7	-216.1	-134.4	201.2
2029	85.9	-216.1	-130.2	70.9
2030	105.0	0.0	105.0	175.9
2031	98.1	0.0	98.1	274.0
2032	116.8	0.0	116.8	390.8
2033	100.9	-304.8	-203.9	186.9
2034	125.6	0.0	125.6	312.5
2035	117.7	0.0	117.7	430.2
2036	134.4	-84.4	50.0	480.2
2037	123.9	0.0	123.9	604.1
2038	158.4	-320.2	-161.8	442.4
2039	146.8	-304.1	-157.3	285.1
2040	158.9	-12.4	146.5	431.6
2041	131.0	0.0	131.0	562.6
2042	167.1	0.0	167.1	729.7
2043	151.2	-120.4	30.8	760.4
2044	163.5	0.0	163.5	923.9
2045	139.7	0.0	139.7	1,063.6
2046	173.8	0.0	173.8	1,237.4
2047	152.4	0.0	152.4	1,389.8
2048	171.0	-725.7	-554.7	835.2
2049	118.3	-399.6	-281.3	553.9
2050	175.0	-429.5	-254.5	299.4
2051	142.6	0.0	142.6	442.0

Figure 2: Net and cumulative cash flow



(Source: Extracted from “the establishment plan of Company is the first outcome for the Technical Cooperation Project sponsored by Japan International Corporation Agency – JICA, passed by HCMC People’s Committee under the Official Letter No. 3566/UBND-DTMT dated July 15th, 2013).

F. CHARTER CAPITAL

I. From 2014 to 2017

We suggest that the charter capital is capped at **14 billions Vietnam Dong**. The Company’s charter capital is contributed by the owner, HCMC People’s Committee, following the specific schedule and based on the capital need for the purchase of assets for the enterprise’s operation.

Explanation:

- During the 2014-2017 period, the Company shall need to be provided with asset and equipment with the total estimated value of 13,770 millions Vietnam Dong and spend the estimated amount of 42,557 millions Vietnam Dong for salary payment and other related costs and expenses (please refer to Table 2 – Estimated operation expenses of the Company for the 2014-2017 period).

- According to Article 9 of Decree No. 130/2013/ND-CP of the Government dated October 16th, 2013 on production and provision of public-utility products and services, the Company is a State-owned one-member limited liability company with public-welfare tasks that the State shall provide adequate capital for the formation of assets to serve the production and provision of public-utility products and services.

- Also as provided in Article 18 of Decree No. 71/2013/ND-CP of the Government dated November 7th, 2013 on State-owned capital investment in enterprises and

finance management of 100%-State-owned enterprises, “in case that the enterprise is wholly invested by the State budget for the formation of assets in order to establish such enterprise, the charter capital is the total capital invested by the State”;

- The State budget shall financially ensure the activities of the Company for the stage of which the Ben Thanh – Suoi Tien is not operated yet (according to the Official Notice No. 649/TB-VP of HCMC People’s Committee Office dated August 19th, 2014 on conclusions of HCMC Chairman Le Hoang Quan regarding the establishment of the urban railway one-member limited liability company).

II. From 2008

We suggest that the charter capital of the Company is capped at the investment capital for items directly related to the operation and maintenance of Ben Thanh – Suoi Tien urban railway, being **16,788 billion Vietnam Dong**.

Explanation:

1. Regulations on the charter capital of State-owned one-member limited liability companies

Upon establishment, the charter capital of one-member limited liability company shall not be lower VND 100 billions. As for one-member limited liability company for providing public-utility services, its charter capital might be lower than 100 billions Vietnam Dong provided that being approved by the Prime Minister (according to Article 7 of The Decree No. 172/2013/ND-CP of the Government dated November 13, 2013);

State-owned one-member limited liability companies with public-welfare tasks shall be provided with adequate capital by the State for the formation of assets to serve the production and provision of public-utility products and services. State shall provide adequate capital for the formation of assets to serve the production and provision of public-utility products and services (according to Article 9 of Decree No. 130/2013/ND-CP of the Government dated October 16th, 2013);

In case that the enterprise is wholly invested by the State budget for the formation of assets in order to establish such enterprise, the charter capital is the total capital invested by the State (according to Article 18 of Decree No. 172/2013/ND-CP of the Government dated November 13th, 2013).

2. Application of regulations on charter capital for the Company’s situation

According to the policies on investment capital structure in urban railway projects, the urban railway infrastructures (including underground, elevated structure, rails, etc.) shall be financed by the Government and distributed to HCMC. The items directly related to the operation and maintenance of urban railway (as electromechanical equipment, locomotives – railcars, etc.) shall be subject to the loan from the Government and HCMC shall be responsible for repayment. The Company shall be allowed to use infrastructures without carrying out the amortization. Electromechanical equipment, locomotives – railcars, etc. shall be invested by HCMC to the Company (i.e. initial investment).

From 2018, firstly the Company shall be handed over with Ben Thanh – Suoi Tien Line of which the construction works are completed. Therefore, we suggest that the charter capital of the Company shall be capped at the investment capital for items directly involved in the operation and maintenance of Ben Thanh – Suoi Tien urban railway, being **16,788 billions**

Vietnam Dong (please refer to Table 3: Estimated expenses of initial investment of the Company).

G. ASSESSMENT ON FEASIBILITY OF THE COMPANY'S ESTABLISHMENT

I. Assessment on socio-economic influences and feasibility of the Company's establishment in comparison with the planning and development strategies of economic industries, sectors and regions.

The establishment of the Company complies with the master plan on development of transportation of Ho Chi Minh City by the year of 2020 with a vision after the year of 2020 approved by the Prime Minister under the Decision No. 568/QĐ-TTg dated April 8th, 2013. The public transport (i.e. bus, urban railway, taxi) shall be 20% ÷ 25% [of transport needs] in 2020, 35% ÷ 45% in 2030 and 50% ÷ 60% in the following years. Among them, urban railway transport with mass carriage and high speed shall play the important role and be skeleton of the city public transportation.

II. The market conditions, demands and prospects of public transport services provided by the Company, the operating and developing plan of the Company after 5 years since the operation of Ben Thanh – Suoi Tien line:

– As predicted, the number of passengers using urban railways shall rapidly increased year by year, the urban railway transport services provided by the Company shall also reduce the traffic congestion and enhance socio-economic development in Ho Chi Minh City.

Table 6: The estimated number of passengers in initial 5 years

Year	The estimated number of passengers (thousand persons/day)
2018	156
2019	172
2020	190
2021	314
2022	335

– Operating and developing plan of the Company after 5 years since the operation and exploitation of Ben Thanh – Suoi Tien line shall be:

+ In the first 5 years of operation of No. 1 line, the Company shall take responsibility for operation of the line under supports by of General Consultants (joint consulting group of Japanese and Vietnamese consultants) and the maintenance works and technical guidances shall be implemented by the contractor for Package 3 of No. 1 Line. The Company shall enjoy the technical training and guidances from consultants and contractors to proceed by its own capacity the operation and maintenance of No. 1 line after the first 5 years.

+The revenues of Company (from the ticket sale and non-fare revenues) shall be gradually increased according to the increased number of passengers, try to reach the revenues for fully covering the operating costs and reducing the subsidization by the city (please refer to the estimates on revenues, operating costs and expenses and income of O&M Company for the 5 years period as presented in Table 7).

Table 7

Unit: VND billion

No.	Contents	Amounts				
		2018	2019	2020	2021	2022
1	Revenues	737	806	1,110	1,836	2,145
	a. Revenues from ticket sale	729	798	1,099	1,818	2,124
	b. Revenues from non-fare business	7	8	11	18	21
2	Maintenance and operation costs	385	429	484	541	601
	a. Employees' salary payment	72	75	82	86	90
	b. Utilities cost	194	220	250	282	318
	c. Sanitation cost	6	6	7	8	8
	d. Maintenance cost					
	- Minor repair (per year)	-	-	-	-	-
	- Average overhaul (1 time per four years)	-	-	-	-	-
	- Major overhaul (1 time per eight years)	-	-	-	-	-
	e. Costs for non-fare business (being 60% revenues of non-fare business)	4	5	7	11	13
	f. Other costs	81	91	102	113	125
	g. VAT	29	32	36	41	46
3	Amortization	1,256	1,256	1,256	1,271	1,271
	a. Underground section	-	-	-	-	-
	b. Elevated section	-	-	-	-	-
	c. Electromechanical equipment (including electromechanical equipment of Depots)	1,116	1,116	1,116	1,116	1,116
	d. Depot	-	-	-	-	-
	e. Locomotive	140	140	140	140	140
	f. Information technology	-	-	-	-	-

	g. Additional/renewed parts (the locomotive, electromechanical equipment)	-	-	-	14	14
4	Profit before tax	(905)	(879)	(630)	25	274
5	Corporate income tax	-	-	-	-	-
6	Profit after tax	(905)	(879)	(630)	25	274

Exchange rate: 1USD= VND20,850 as SBV's rate on January 31st, 2013)

(Source: Extrated from “the establishment plan of Company is the first outcome for the Technical Cooperation Project sponsored by Japan International Corporation Associate – JICA, passed by HCMC People’s Committee under the Official Letter No. 3566/UBND-DTMT dated July 15th, 2013).

– [The establishment of the Company] Creates the solid base for operation and maintenance of the other urban railways (No. 2 Line, No. 5 Line, etc), and plays the essential role and participate proactively in the city’s public transport system.

III. Capability for providing manpower, materials, power supply, technology, and other necessary contiditons for the Company’s operation after its establishment

- Local trained employees are qualified for assigned tasks;
- The main power supply for urban railways are provided by the national energy system;
- The Company shall be obliged to the practising certificates for safe activities with regard to railway transport granted by the competent railway authorities (as stipulated in Article 75 of the Law on Railway).

H. EMPLOYMENT ATTRACTION AND RECRUITMENT, EMPLOYEE TRAINING AND RETENTION

I. 2014 – 2017 period

In the 2014 – 2017 period, the Company shall implement the recruitment and training for its employees according to the plans, provided that until the end of 2017, the Company shall have sufficient railway employees as required (qualified the quantity, qualifications and skills, etc. after the training from consultants and contractors), improve its organizational structure and management to be available for operation of Ben Thanh – Suoi Tien line from 2018 and other lines in next steps.

The employees participated in the preparation for, operation and maintenance of urban railways are required to have sufficient qualifications, foreign language skill (for directly working with foreign experts), have a passion for this practice and long-term work with the Company after being trained. Practically, most of employees at the begining shall be transfered from the Management Authority for Urban Raiways (being the authorized investor of urban railway projects and, involved in the technical designs and construction of urban

railway projects from the beginning period of projects and well-informed about urban railway lines).

However, according to the regulations on wages, remunerations and bonuses in State-owned limited liability companies for the period of gaining no revenues or suffering loss (under Clause 4 Article 17 of Circular No. 18/2013/TT-BLDTBXH dated September 9th, 2013 of the Ministry of Labour, War Invalids and Social Affairs), the salary of employees, who are transferred from the Management Authority for Urban Railways to the Company, shall be decreased significantly. There are some examples as follows:

Table 8: *The comparison between salary payment of employees at expert-level in the Company (as specified by laws) and employees at the same level in the Management Authority for Urban Railways*

Salary scale	Working years	Salary structure for State-owned limited liability company under the period of gaining no revenues or suffering loss		Current salary structure applied at the Management Authority for Urban Railways			Differential ratio
		Salary multiplier*	Salary rate	Salary multiplier	Basic salary	Included additional income**	
1	01	2.34	2,691,000	2.34	2,691,000	7,265,700	2.70
2	04	2.65	3,047,500	2.67	3,070,500	8,290,350	2.72
3	07	2.96	3,404,000	3.00	3,450,000	9,315,000	2.74
4	10	3.27	3,760,500	3.33	3,829,500	10,339,650	2.75
5	13	3.58	4,117,000	3.66	4,209,000	11,364,300	2.76
6	16	3.89	4,473,500	3.99	4,588,500	12,388,950	2.77
7	19	4.20	4,830,000	4.32	4,968,000	13,413,600	2.78
8	22	4.51	5,186,500	4.65	5,347,500	14,438,250	2.78
9	25			4.98	5,727,000	15,462,900	

Note: *: Salary multiplier as provided in the Decree No.205/2004/ND-CP dated December 14th, 2015 of the Government

** additional income payment = 1.7 * basic salary

With such differential level, it is really difficult to attract the current employees of the Management Authority for Urban Railways to work for the Company and to recruit more employees for the Company's manpower requirements with the conditions of qualified professional knowledge, good foreign language skills, passion for long-term working the Company after the training etc. The Company shall face difficulties of manpower and management and be challenged to fulfill the assignments of operation and exploitation of urban railway system after construction.

II. From 2018

The Company needs to create the professional environment and reasonable employment benefits to encourage well-trained employees to long-term work with the Company. Simultaneously, the Company needs to prepare the training plan for successive employees and for employees in charge of the operation of other urban railway lines following Ben Thanh – Suoi Tien line.

J. SUGGESTIONS AND COMMENTS:

- HCMC People's Committee is kindly suggested to evaluate and submit to the Prime Minister for approval of the Establishment Proposal of Ho Chi Minh City Urban Railways No. 1 one-member limited liability company ("Company");

- The Prime Minister is kindly suggested to consider and approve the sector of "Management and maintenance of urban railways infrastructures" to be subject to the list of public-utility products and services (Schedule A) and approve the establishment of the Company.

ANNEX 1(*HCMC Urban railway system*)

	Route	Distance (km)
No. 1 Line	Ben Thanh area – Le Loi Street – City Opera House – Ba Son shipyard – Van Thanh Canal – Van Thanh Park – crossing Dien Bien Phu Street, crossing Saigon river – Ha Noi Highway– Suoi Tien Station	19.7
No.2 Line	Northwest Urban Area (Cu Chi Ward) – National Highway No. 22 – Tay Ninh Bus Station – Truong Chinh Street – (branch to Tham Luong Depot) - Cach Mang Thang Tam Street – Pham Hong Thai Street – Le Lai Street – Ben Thanh area – Thu Thiem area	48.0
No. 3a Line	Ben Thanh area – Pham Ngu Lao Street – Cong Hoa Intersection – Hung Vuong Street – Hong Bang Street – Kinh Duong Vuong Street – Tan Kien Depot – Tan Kien Station	19.8
No. 3b Line	Cong Hoa Intersection – Nguyen Thi Minh Khai Street – Xo Viet Nghe Tinh Street – National Highway No. 13 – Hiep Binh Phuoc area	12.1
No. 4 Line	Thanh Xuan Ward – Ha Huy Giap Street – Nguyen Oanh Street – Nguyen Kiem Street – Phan Dinh Phung Street – Hai Ba Trung Street – Ben Thanh Street – Nguyen Thai Hoc Street – Ton Dan Street – Nguyen Huu Tho Street – Hiep Phuoc Urban Area	36,2
No. 4b Line	Gia Dinh Park Station (No. 4 Line) – Nguyen Thai Son Street – Hong Ha Street – Tan Son Nhat International Airport – Truong Son Street – Hoang Van Thu Park – Lang Cha Ca Station (No. 5 Line)	5.2
No. 5Line	New Can Giuoc Bus Station – National Highway No. 50 – Tung Thien Vuong Street – Phu Dong Thien Vuong Street – Ly Thuong Kiet Street – Hoang Van Thu Street – Phan Dang Luu Street – Bach Dang Street – Dien Bien Phu Street – Sai Gon Bridge	26.0
No. 6 Line	Ba Queo Intersection – Au Co Street – Luy Ban Bich Street – Tan Hoa Dong Street – Phu Lam Roundabout	5.6
No. 1 Tramway	Ba Son Shipyard – Ton Duc Thang Street – Me Linh Square – Vo Van Kiet Highway – Ly Chieu Hoang Street – current Mien Tay Bus Station	12,8
No. 2 Monorail Line	National Highway No. 50 (District 8) – Nguyen Van Linh Highway – Tran Nao Street – Xuan Thuy Street (District 2) – Binh Quoi Urban Area (Thanh Da Area, Binh Thanh District)	.27,2
No. 3 Monorail Line	Crossroads (Phan Van Tri Street – Nguyen Oanh Street) – Phan Van Tri Street – Quang Trung Street – Quang Trung Software City – To Ky Street – Tan Chanh Hiep Station	165

(According to the master plan on development of transportation of HCMC by the year of 2020 with a vision after the year of 2020 approved by the Prime Minister under the Decision No. 568/QĐ-TTg dated April 08th, 2013)

ANNEX 2

* The detailed plan of organization, human resource of the Company from 2018

Categories	Division (Responsibilities)	Number of employees	The required qualifications
Headquarter	Members' Council	3	Assigned by HCMC People's Committee
	Inspectors	3	Assigned by HCMC People's Committee
	Director and Deputy Directors	4	- Director: Bachelor's Degree in transportation, or business administration, or technology etc., plus at least 10-year-experiences of management; - Deputy Director: Bachelor's Degree in transportation, or business administration, or technology etc., plus at least 5-year-experiences of management;
	Administration – Legal Division <i>(responsible for administrative, foreign affairs, law dissemination, office records, maintaining documents of customer's complaints, logistical tasks etc.)</i>	7	- Department Chief: Bachelor's Degree in administrative management, or law, or human resource, or business administration, plus experiences of management - Staff: Bachelor's Degree in administrative management, or law, or human resource, or business administration, and preferable related experiences
	Division of Human Resources <i>(Responsible for recruitment, work assignment and employment training, appraisal of employees, implementation of employment benefits and related matters, maintaining the employees' working records confidential, etc.)</i>	3	- Department Chief: Bachelor's degree in human resource, or administration, or law, plus management experiences. - Staffs: Bachelor's degree in human resource, or administration, or law, and preferable related management experiences.
	Training Center	0	
	Finance – Accounting Division Chief accountant <i>(Responsible for assignments of finance-accounting, forecasts, tax, management of budget, cash and assets, etc.)</i>	7	- Department Chief: Bachelor's degree in finance, or accounting, plus management experiences. - Staffs: Bachelor's degree in finance,

		or accounting, and preferable related experience.
Planning – Investment Division <i>(Responsible for preparation and implementation of short-term and long-term plans, the Company's prospects, purchase plans of equipment, other plans supporting the Company's activities, management of information technology system, etc.)</i>	7	- Department Chief: Bachelor's degree in business administration, or finance, plus management experiences. - Staff: Bachelor's degree in business administration, or finance, or information technology information, and preferable related experiences.
Supplies – Equipment – Services Division <i>(Responsible for supervising the implementation of contracts, out-sourcing activities and office records, management and liquidation of materials and equipment, etc.)</i>	3	- Department Chief: Bachelor's degree in engineering, plus management experiences. - Staff: Degree of college of engineering, and preferable related experiences.
Business - Public Relations Division <i>(Responsible for preparation and expansion of business activities, management of passengers' travelling cards/tickets, business promotion, improvement of service quality and management of non-fare business.</i>	12	- Department Chief: Bachelor's degree in business administration, or marketing, plus management experiences. - Staff: Bachelor's degree in business administration, or marketing, media, foreign language, and preferable related experiences.
Technical Operations Division <i>(Responsible for technology matters of locomotive, railway railcars, rails, construction, railways electrification system, telecommunication... and preparation of maintenance and replacement plans, prevention and troubleshooting of technical problems, management of technical materials, etc....)</i>	29	- Department Chief: Bachelor's degree in engineering, plus managing experiences. - Staff: Bachelor's degree in engineering, or construction and, preferable related experiences.
Safety- Operation Management Division (including the Operation Control Center –with 10 employees) <i>(Responsible for preparation of route schedules, locomotive operation plans for all lines and train schedules, co-operation activities for investigation and settlement of railway breakdowns and accidents, safety maintenance and improvement of the Company's activities, etc.)</i>	24	- Department Chief: Bachelor's degree in railway sector, plus managing experiences. - Dispatcher: Degree of college of railway with the major of train driving or Bachelor's degree in railway sector.
Total	102	

Operation Unit 1 (Line 1)	Director	1	Bachelor's degree in transportation, railway, plus management experiences.
	Train driver <i>(Operation of 17 trains from 5:00 to 23:00 every day)</i>	56	Degree of college of railway with the major of train driving
	Train staffs <i>(Operation of 14 strain stations from 5:00 to 23:00 every day)</i>	156	- Train station chief: Degree of college of railway with the major of train operating or Bachelor's degree in railway sector - Staff: Degree of Vocational School of railway sector, economics or equivalent level.
	Total	213	
Maintenance Unit (Line 1)	Director	1	Bachelor's degree of engineering, plus experience of management
	Rolling Stock Maintenance Staff <i>(in charge of periodic train maintenance and unexpected repairs)</i>	15	- Engineers: Bachelor's degree of electrical engineering - Worker: Vocational School of electrical engineering
	Track, structural, maintenance staff <i>(in charge of the whole line and depots)</i>	13	- Engineers: Bachelor's degree of engineering construction - Worker: Degree of Vocational School of engineering construction
	Equipment, Information - signal maintenance staff <i>(in charge of the whole line and depots)</i>	13	- Engineer: Bachelor's degree of information technology, or electronics engineering - Worker: Degree of Vocational School of information technology or electronics engineering
	Electro-mechanical Maintenance Staff <i>(in charge of the whole line and depots)</i>	22	- Engineer: Bachelor's degree of electrical engineering - Worker: Degree of Vocational School of information technology or electronics engineering.

	AFC system maintenance Staff <i>(for 14 train stations)</i>	15	
	<i>Total</i>	<i>79</i>	
Sum		394	

***Estimates on employees directly involved in operation of Ben Thanh – Suoi Tien line**

1. The working ratios in Vietnam

- In 01 year, the national holiday shall include 10 days; weekend off shall include 52 days; and annual leave shall include 12 days;
- The ratio of actual working days per employee: $(365-52-10-12)/365 = 0.8$;
- The total working days in 01 year: $265-(52+10) = 303$;
- The total of actual working days per employee in 01 year: $365 - (52+10+12) = 291$;
- The ratio of employees covering all working days of 01 year: $303/291 = 1.04$
- The ratio of employees covering all days of 01 year: $365/291 = 1.25$

2. The staffs of Operation Control Center (OCC)

The time schedule for train operation shall be from 5:00am to 1:00am of the next day (totally 20 hours)

The operators responsible for equipment shall also work during the night time (totally 24 hours)

- The number of Commerce, Transportation, Locomotive Operators: there are 03 staffs in one shift (each person shall be in charge of each task); and the total number of actual shifts shall be 20 hours/8 hours/0,8 (actual ratio of working hours for each employee) = 3,125 shifts. Therefore, the required number of staffs shall be 01 employee x 3,125 shift x 3 (working items) = 10 employees (as rounded);
- The number of equipment operators: 1 operator x 24 hours/8 hours/ 0,8 = 4 operators (as rounded);
- The numbers of managers shall be 4 managers for 4 working items;
- There is 1 operator in night shift;
- The total number of operators: $10 + 4 + 4 + 1 = 19$ operators.

3. Train drivers

(1) Train driver:

- The estimates shall be made based on experiences of Osaka Metro and the route designs of Ben Thanh – Suoi Tien line with the traveling period of whole line of 13,360 minutes;
- The working time per day in Osaka Metro is 450 minutes (7.5 hours) while in Vietnam, it is 480 minutes (8 hours). Accordingly the average actual working hours of a train driver in Osaka Metro is 335 minutes; therefore; in Vietnam, it is $335 + 30 = 365$ minutes.
- Additionally, the train accumulation tasks at night shall additionally require 2 night shifts then the total shifts shall be 38.6.
- The ratio of backup employees shall be 0.03 (based on Osaka Metro's experiences); thus, the total of backup working shifts shall be $38.6 \times 0.03 = 1.158$;
- The total number of necessary train drivers: $(38.6 + 1.158)/0.8 = 50$ drivers (as rounded);

(2) The train driver manager:

- Responsibility: to manage drivers and conduct periodical training to the drivers;
- The number of drivers: $(2 \text{ drivers} \times 2 \text{ shifts}) / 0.8 = 5$ (as rounded);
- Moreover, 01 administration officer is needed.
- The total number of train driver managers shall be 6,

4. The train employees

- The train station chief: 9 employees; including 5 train station chiefs who manage 5 stations with switch of direction/railroad, and 4 other chiefs managing 9 remaining stations (averagely 1 train station chief / 2 – 3 stations)
- The number of employees in day and night shift, including national holidays: $2/0.8 = 3$ employees (as rounded);
- The number of employees = $(A+B) \times C \times 3$

No.	Train Station	The ordinal number of ticket gate	The number of ticket controllers	The number of ticket sellers	The number of employees
1	Ben Thanh*	2	1	2	18
2	City Opera House	2	1	1	12
3	Ba Son	2	1	1	12
4	Van Thanh	1	1	1	6
5	Tan Cang*	1	1	2	9
6	Thao Dien	1	1	2	9
7	An Phu*	1	1	2	6
8	Rach Chiec	1	1	3	12
9	Phuoc Long	1	1	2	9
10	Binh Thai*	1	1	2	9
11	Thu Duc	1	1	2	9
12	High-tech Park	1	1	2	9
13	HCMC National University	1	1	2	9
14	Suoi Tien Bus Station*	2	1	2	18
Total					147

Note: * switch of direction/railroad

*** The references of employees in operation and maintenance of urban railways in some neighbouring countries:**

As showed in the below table:

Country	Company	Railway Line	The ordinal number of train stations	Distance	The number of employees
Singapore	SBS Transit	North East	16	20	1,270 employees for 45.3km of distance with 51 train stations
		Downtown*	6	4.3	
		Sengkang LRT	14	10.7	
		Punggol LRT	15	10.3	
Thailand	Bangkok Metro Public Company Limited	Blue	18	20	1,089

Notice:

- As for Downtown line of 42-km-distance and totally 34 train stations; at the present time only the construction works of 4.3 km with 6 trains are already finished and operated.

- Source: Finance report of 2013 of SBS Transit Company, at page No. 22; Financial report of 2013 of Bangkok Metro Public Company Limited at pages No. 34 and 85;

(http://www.sbstransit.com.sg/download/SBST_AnnualReport13_a.pdf);

(<http://bmcl.listedcompany.com/misc/ar/20140328-bmcl-ar2013-en.pdf>);

ANNEX 3 (*Estimates of operation expenses for the period of 2014-2017*)

ANNEX 4 (*Monthly Wage Estimates of the Company for the 2014-2017 period*)

I. Wage Regulations of State-owned one-member limited liability companies

The regulations on wages, remunerations, bonuses of State-owned one-member limited liability companies shall be provided in the Decrees No. 50/2013/ND-CP and 51/2013/ND-CP of the Government dated May 14th, 2013; the Circulars No. 18/2013/TT-BLDTBXH and No. 19/2013/TT-BLDTBXH of Ministry of Labour, War Invalids and Social Affairs dated September 9th, 2013, particularly:

- The wage fund of employees is provided in Article 8 of the Circular No. 18/2013/TT-BLDTBXH and the wage fund for management officials is provided in Articles 9 and 10 of the Circular No. 19/2013/TT-BLDTBXH;

- According to Clause 4 Article 17 of the Circular No. 18/2013/TT-BLDTBXH, in case that the company has no profits or suffers from loss and during the period that the wage scale and schedule is not made according to Article 93 of the Labour Code and the Decree No. 49/2013/ND-CP of the Government dated May 14th, 2013, the wage rates on the average labour contracts (in order to define the wage fund) shall be defined based on the (average) salary multiplier (according to the Decree No. 205/2004/ND-CP of the Government dated February 14th, 2004) multiplied with the minimum wages provided by the Government at the date of December 31st of every year and multiplied with consumer price index issued by the General Statistics Office on December 31st of every year in comparison with the point of April 30th, 2013. As for the employees who have the salary rates (after being multiplied with the consumer price index) are lower than regional minimum wages from time to time provided by the Government for the area of the company, the wage rates of employees shall be regional minimum wages.

II. Application of the above wage schedule for the case of the Company

From 2014-2017, the Company shall set up the structure and be prepared for the operation and maintenance of Ben Thanh – Suoi Tien urban railway lines on 2018; act as the contact person and became the partner for the programmes and projects related to of urban railway management and operation. During this period, the Company shall gain no profits. Therefore, the wage schedule shall be conducted according to Clause 4 Article 17 of the Circular No. 18/2013/TT-BLDTBXH as mentioned above.

Table 8: Salary rates of employees in proportion to the ratio and a number of working years

Salary grade	From the working year of	Salary schedule applied to one-member limited liability companies gaining profits or suffering loss	
		Multiplier*	Salary rate
1	1	2.34	2,691,000
2	4	2.65	3,047,500
3	7	2.96	3,404,000
4	10	3.27	3,760,500
5	13	3.58	4,117,000
6	16	3.89	4,473,500
7	19	4.20	4,830,000
8	22	4.51	5,186,500

(*): Salary multiplier is based on the Decree No. 205/2004/ND-CP of the Government dated December 14th, 2004;

III. Estimated monthly wage fund of the Company from 2014-2017

(to be presented in the following Table)

ANNEX 5 (*Extracts form the related terms on the establishment of the Company in the Meeting Minutes signed on November 26th, 2006 between JBIC and the Government of Socialist Republic of Vietnam*)

ANNEX 6 (*Official Notice No. 317/TB-VPCP of the Government Office dated August 8th, 2014 on conclusions of Deputy Prime Minister Hoang Trung Hai at a cabinet meeting on the implementation of the urban railway project of Ben Thanh – Suoi Tien Line and being reported on the urban railway project of Ho Chi Minh City*)

**MINISTRY OF LABOUR–WAR INVALIDS
AND SOCIAL AFFAIRS**

**SOCIALIST REPUBLIC OF VIETNAM
INDEPENDENCE – FREEDOM – HAPPINESS**

No.: 4987/LDTBXH-LDTL

Ha Noi, December 26th, 2014

Re: The establishment proposal of Ho Chi
Minh City Urban Railway No.1 One-
Member Limited Liability Company

To: People’s Committee of Ho Chi Minh City

In reply to the Official Letter No. 6499/UBND-QLDA of People’s Committee of Ho Chi Minh City (“HCMC-PC”) dated December 09th, 2014 regarding comments on the establishment proposal of Ho Chi Minh City Urban Railway No.1 One-Member Limited Liability Company (hereinafter referred to as “HCMC Urban Railway No.1 Company”), the Ministry of Labour – War Invalids and Social Affairs (“MOLISA”) would like to give opinions as follows:

1. The establishment proposal of HCMC Urban Railway No.1 Company satisfies establishment conditions and the sector, field and operation area conformity with regulations stipulated in the Decree No. 172/2013/ND-CP of the Government dated November 13th, 2013 on establishment, reorganization and dissolution of State-owned one-member limited liability company and its subsidiary being one-member limited liability company as well as the Project on transportation development of Ho Chi Minh City by the year of 2020 with a vision after the year of 2020 in accordance with the Decision No. 568/QĐ-TTg of the Prime Minister dated April 8th, 2013.

MOLISA agrees with HCMC-PC’s suggestion on obtaining the approval from the Prime Minister regarding the establishment of HCMC City Urban Railway No.1 Company.

2. Regarding the content of the Establishment Proposal of HCMC City Urban Railway No.1 Company (hereinafter referred to as the “Proposal”):

- In accordance with regulations in Clause 3, Article 16, Decree No. 172/20013/ND-CP dated November 13th, 2013 referred above, applied to one-member limited company working in some special sectors, fields, areas or providing public-utility products and services, with the approval by the Prime Minister, the company’s Charter Capital could be lower than the rate regulated in Clause 1, Article 16, Decree No. 172/2013/ND-CP. Therefore, in case that the charter capital of HCMC City Urban Railway No.1 Company shall be 14 billion Vietnam Dong, MOLISA suggests HCMC-PC explaining and reporting to the Prime Minister for consideration and decision.

- According to the Proposal's content, Urban Railway Line 1 (from Ben Thanh to Suoi Tien) is planned to be completely constructed and be operated from 2018 and the recruitment plan for this line's operation shall be started from 2016. Therefore, for the purpose of evaluating the suitability of the recruitment plan, MOLISA suggests adding the plan and the training time for staff directly involved in the operation and maintenance of the urban railway.

- Regarding the wage fund of employees and the fund of wage, remuneration and bonus for management officers of HCMC Urban Railway No.1 Company, MOLISA suggests HCMC-PC guiding the Company to rightly conform to the regulations in Decree No. 50/2013/ND-CP, Decree No. 51/2013/ND-CP of the Government dated May 04th, 2013 and Circular No. 18/2013/TT-BLDTBXH, Circular No. 19/2013-TT-BLDTBXH of MOLISA dated September 09th, 2013 as basis for planning the annual estimates of operation expenses.

3. Regarding the drafted charter of HCMC Urban Railway No.1 Company, MOLISA suggests its content being revised and supplemented as follows:

- In Article 35 about Remuneration and Wage of the members of the Members' Council, Director, Inspector(s): MOLISA suggests such content being revised and supplemented in accordance with Article 7 of the Decree No. 51/2013/ND-CP of the Government dated May 14th, 2013.

- In Clause 7, Article 20 about duties and rights of the Members' Council, MOLISA suggests adding the duty of approving employees' wage scale, payroll, labor norms and wage fund.

- In Article 27 about rights, duties and responsibilities of the company Director, MOLISA suggests adding Director's responsibility related to employment and wage issues for making labor norms and labor usage plan, evaluating labor usage for reporting to the Members' Council or the company Chairman; making and promulgating recruitment regulations, labor usage regulations, and organizing recruitment as regulated; making wage scale, payroll and submit to the Members' Council for approval; specifying yearly wage fund of employees and submitting it to the Members' Council for approval.

Above is MOLISA's feedback to HCMC-PC in order to report to the Prime Minister for consideration and decision.

Recipients:

- As above;
- Minister (for report);
- For record: Record Office, Department of Labour and Salary

**On behalf of MINISTER
VICE MINISTER**

(Signed and sealed)

Pham Minh Huan

MINISTRY OF HOME AFFAIRS

**SOCIALIST REPUBLIC OF VIETNAM
INDEPENDENCE – FREEDOM – HAPPINESS**

No. :09/BNV-TCBC

Hanoi, January 05th, 2015

Re: Giving comments on the establishment
proposal of Ho Chi Minh City Urban
Railway No.1 One-Member Limited
Liability Company

To: People's Committee of Ho Chi Minh City

In reply to the Official Letter No. 6499/UBND-QLDA of People's Committee of Ho Chi Minh City ("HCMC-PC") dated December 09th, 2014 regarding comments on the establishment proposal of Ho Chi Minh City Urban Railway No.1 One-Member Limited Liability Company ("HCMC Urban Railway No. 1 Company"), the Ministry of Home Affairs ("MOHA") would like to give opinions as below:

1. MOHA agrees with HCMC-PC about the necessity of establishing HCMC Urban Railway No.1 Company in accordance with the Project on Transportation Development Planning of Ho Chi Minh City by the year of 2020 with a vision after the year of 2020 approved by the Prime Minister under the Decision No. 568/QD-TTg dated April 08th, 2013.

2. Regarding the content of the Proposal:

MOHA suggests HCMC-PC studying regulations in the Decree No.71/2013/ND-CP of the Government dated July 11th, 2013 on State capital investment in enterprises and financial management of 100%-State-owned enterprises in order to stipulate more specific provisions on capital and financial management in conformity with the organization type of HCMC Urban Railway No.1 Company.

As for other contents related to this Proposal, MOHA suggests HCMC-PC strictly complying with the guiding principle of the Prime Minister under the Official Letter No. 10099/VPCP-KTN of the Government Office dated December 17th, 2014 regarding the implementation of the projects on urban railway in Ha Noi and Ho Chi Minh.

Above is MOHA's opinions about the establishment proposal of HCMC Urban Railway No.1 Company for HCMC-PC to study and modify the Proposal to submit it to competent authorities for consideration and decision.

Recipients:

- As above;
- Minister (for report);
- Vice Minister Tran Anh Tuan;
- For record: Record Office, Department of Organization and Personnel (TCBC) (03 copies)

**On behalf of MINISTER
VICE MINISTER**

(Signed and sealed)

Tran Anh Tuan

MINISTRY OF TRANSPORTATION

**SOCIALIST REPUBLIC OF VIETNAM
INDEPENDENCE – FREEDOM – HAPPINESS**

No.: 109/BGTVT-QLDN

Hanoi, January 07th, 2015

Re: Giving comments on the establishment
proposal of Ho Chi Minh City Urban
Railway No.1 One-Member Limited
Liability Company

To: People's Committee of Ho Chi Minh City

Ministry of Transportation (“MOT”) has received the Official Letter No. 6499/UBND-QLDA of People's Committee of Ho Chi Minh City (“HCMC-PC”) dated December 09th, 2014 asking our comments on the establishment proposal of Ho Chi Minh City Urban Railway No.1 One-Member Limited Liability Company (“HCMC Urban Railway No.1 Company”). After studying the Proposal, MOT would like to give opinions as follows:

- The drafted charter of HCMC Urban Railway No.1 Company should be modified and supplemented in accordance with the Decree No. 19/2014/ND-CP of the Government dated March 14th, 2014 providing the sample charter of State-owned one-member limited liability company.
- The establishment proposal of HCMC Urban Railway No.1 Company should be modified and updated in accordance with the Law on Enterprise No 68/2014/QH13.

Above are MOT's opinions on the establishment proposal of HCMC Urban Railway No.1 Company which are addressed to HCMC-PC for further actions.

Recipients:

- As above;
- Minister (for report);
- For record: Record Office, Department of Enterprise Management (Tuan, 2 copies) (Signed and sealed)

**On behalf of MINISTER
VICE MINISTER**

Nguyen Ngoc Dong

MINISTRY OF FINANCE

**SOCIALIST REPUBLIC OF VIETNAM
INDEPENDENCE – FREEDOM – HAPPINESS**

No.:1419/BTC-TCDN

Hanoi, January 29th, 2015

Re: Giving comments on the establishment
proposal of Ho Chi Minh City Urban
Railway No.1 One-Member Limited
Liability Company

To: People’s Committee of Ho Chi Minh City

People’s Committee of Ho Chi Minh City (“HCMC-PC”) has sent the Official Letter No. 6499/UBND-QLDA dated December 09th, 2014 asking comments of the Ministry of Finance (“MOF”) regarding the establishment proposal of Ho Chi Minh City Urban Railway No.1 One-Member Limited Liability Company (“HCMC Urban Railway No.1 Company”) (with the proposal and drafted charter attached). After studying the proposal, MOF would like to give comments as follows:

1. Regarding the necessity of establishment of HCMC Urban Railway No.1 Company:

- According to the Decision No. 568/QĐ-TTg of the Prime Minister dated April 8th, 2013 on approval of transportation development planning of Ho Chi Minh City by the year of 2020 with a vision after the year of 2020, Ho Chi Minh is going to construct 08 urban railway lines (radial and ring) connecting centers of the city, 03 tramways or monorails (Urban Railway Line 1 Ben Thanh - Suoi Tien Project included).

- Under the Notice No. 317/TB-VPCP of the Government Office dated August 08th, 2014 on the conclusion of Deputy Prime Minister Hoang Trung Hai at the meeting about the implementation of Urban Railway Ben Thanh – Suoi Tien Project and listening to reports on Ho Chi Minh City Urban Railway Projects, Deputy Prime Minister requested to ensure the disbursement progress of ODA capital, especially design-consulting works in order to disburse the project general consultant package, and to report to the Prime Minister before August 16th, 2014; and Deputy Prime Minister also agreed in principal with the establishment proposal of HCMC Urban Railway No.1 Company.

- Otherwise, according to the Decision No. 37/2014/QĐ-TTg of the Prime Minister dated June 18th, 2014 on promulgating criteria and categories for classifying State-owned enterprises, enterprises working on the sector of “managing and, exploiting the national and urban railway infrastructure system; operating the national and urban railway transportation” shall be enterprises of which 100% charter capital is owned by the State.

With above reasons, MOF concurs with HCMC-PC’s proposal on establishing HCMC Urban Railway No.1 Company of which 100% charter capital is own by the State (e.g. HCMC-PC is the owner).

2. Financial mechanism for supporting the enterprise:

- HCMC Urban Railway No.1 Company, being a 100%-State-owned enterprise (as stipulated in the Decision No. 37/2014/QĐ-TTg of the Prime Minister dated June 18th, 2014), shall conduct 02 major duties: providing public passenger transport services by subway with urban railway system; managing and maintaining urban railway infrastructure system.

- According to the Proposal, in the early stage of establishment (from 2014 to 2017), major activities of HCMC Urban Railway No.1 Company shall be preparation and satisfaction of necessary conditions for implementing operation and maintenance of the first urban railway line Ben Thanh – Suoi Tien (under which Company's activities shall not have revenue yet). In the stage from 2018, the Company shall be handed over completed project, operate and develop the project and as a result the revenue shall be reached.

- In the other hand, HCMC Urban Railway No.1 Company of which HCMC-PC is the owner, shall provide public passenger transport services within the city so the product and services provided by the Company shall be governed by HCMC-PC.

From the above, MOF suggests HCMC-PC, based on the actual activities of the Company (at each stage), specifying the method for providing public-utility services of the enterprise (i.e. assigned plan or order) in order to clarify the financial mechanism (with subsidization or financial support by the city) in accordance with the Decree No. 130/2013/ND-CP of the Government dated October 16th, 2013 on production and provision of public-utility product and services.

3. Regarding amortization/depreciation system:

- In accordance with the Law on Railway, railway works are construction works for railway transportation. Urban railway including subway, elevated railway, monorail, tramway is supported by the State's budget for development.

- According to the policy on investment capital mechanism in urban railway projects, urban railway infrastructure (tunnel, elevated structure, track, etc.) is directly invested by the State (that the Government support and allocate the budget to Ho Chi Minh City).

- HCMC-PC takes out a loan from the Government and the City has the obligation to repay such loan to invest to the implementation of items directly related to urban railway operation and maintenance activities (mechanical and electrical equipment, locomotives-rolling stock, etc.)

Therefore, MOF agree with the HCMC's proposal that towards assets which are urban railway structural works, infrastructure (tunnel, elevated structure, track, etc...) invested by the State and the works managed and exploited by the Company as assigned, then the Company does not have to carry out amortization but is obliged to do maintenance works for the urban railway infrastructure by way of providing public products and services under the orders or plans assigned by HCMC-PC in conformity with the Decree No. 130/2013/ND-CP of the Government dated October 16th, 2013. Towards fixed assets directly involved in operation and transportation activities of urban railway (mechanical – electrical equipment, locomotive – rolling stock, etc.)

which are invested by HCMC-PC due to the loan, the Company shall conduct amortization in accordance with the applicable regulations.

4. Regarding the charter capital of HCMC Urban Railway No.1 Company

- In Article 6 of the Decree No. 172/2013/ND-CP of the Government on establishment, re-organization and dissolution of State-owned one-member limited liability company and its subsidiary being one-member limited liability company, it is stipulated that:

“1. The charter capital of a newly established one-member limited liability company is not lower than 100 billion Vietnam Dong....

3. As for one-member limited liability company operating in some special sectors, fields, areas or produces and provides public-utility products and services, its charter capital can be lower than the rate regulated in Clause 1 above provided that there is approval from the Prime Minister”.

- In the first stage of establishment, HCMC Urban Railway No.1 Company shall prepare necessary conditions for the operation of Ben Thanh – Suoi Tien Railway Line, so that the investment requirement of this stage shall be office facilities for the Company’s activities (other assets are equipped by the State and the City from ODA source). Therefore, MOF concurs and suggests HCMC-PC reporting to the Prime Minister about specifying the charter capital of HCMC Urban Railway No.1 Company when conducting the first stage under which its capital is lower than 100 billion Vietnam Dong as stipulated (according to the Proposal, it is planned that in the 2014 - 2017 stage, the enterprise’s charter capital is 14 billion Vietnam Dong for purchasing company’s office facilities).

When Ben Thanh – Suoi Tien Line is completed (from 2018 as scheduled), the Company shall be handed over the completed Project so that the charter capital of HCMC Urban Railway No.1 Company shall be re-structured including the entire investment capital for items directly involved in urban railway operation and maintenance activities of the Company which are managed and developed by the Company at that time.

Above are MOF’s opinions to HCMC-PC for further actions.

Recipients:

- As above;
- For record: Record Office, Department of Corporate Finance (6 copies)

**Sign for MINISTER
VICE MINISTER
(Signed and sealed)**

Tran Van Hieu

**MINISTRY OF PLANNING
AND INVESTMENT**

**SOCIALIST REPUBLIC OF VIETNAM
INDEPENDENCE – FREEDOM – HAPPINESS**

No.: 1249/BKHDT-KCHTDT

Ha Noi, March 03rd, 2015

Re: Establishment of Ho Chi Minh City
Urban Railway No.1 One-Member Limited
Liability Company

To: People’s Committee of Ho Chi Minh City

In reply to the Official Letter No. 6499/UBND-QLDA of People’s Committee of Ho Chi Minh City (“HCMC-PC”) dated December 09th, 2014 asking our comments on the establishment proposal of Ho Chi Minh City Urban Railway No.1 One-Member Limited Liability Company (“HCMC Urban Railway No.1 Company”), the Ministry of Planning and Investment (“MPI”) would like to give opinions as follows:

1. Regarding the necessity of establishment of HCMC Urban Railway No.1 Company:

- According to transportation development planning of Ho Chi Minh City by the year of 2030 with a vision after the year of 2020 approved by of the Prime Minister as amended in the Decision No. 568/QĐ-TTg dated April 8th, 2013, urban railway system in Ho Chi Minh City includes 08 radical lines and ring lines connecting major centers of the city, majorly underground in urban centers. This is a new modern type of transport requiring high-skilled human resource which is not available at the present time. Therefore, it is definitely necessary to establish an organization to provide the training services for such human resource that satisfies the requirements of management, maintenance, repair tasks and operation of urban railway system.

- However, after studying successfully-implemented models of the countries that have experiences in development, management and exploitation of urban railway system, beside the Operation Control Center (OCC), normally there are 03 relevant organizations, including 01 organization for urban railway infrastructure maintenance; 01 organization for transport services which sub-leases urban railway infrastructure [in order to provide these services]; 01 organization for non-transport services and real estate business which shall provide non-transport services together with operating real estate business to fully exploit locational advantages of urban railway stations to make up investment expenses. This model seems appropriate while the State-owned budget and originally-State-owned budget for transportation is very limited and the “socialization” of investment in railway transport projects (BOT and PPP vehicles) is increased thanks to this model.

- Therefore, it is necessary to deeply study and assess the conformity of the establishment proposal of HCMC Urban Railway No.1 Company, with regulations of the Law on Railway, other countries’ experiences and current conditions of Vietnam, feasibility of separation between

the management and maintenance of railway infrastructure and the provision of passenger transport services and non-transport services; the concession to transport exploitation, inviting other economic sectors to join transport exploitation and inviting tenders for the infrastructure maintenance works of HCMC Urban Railway No.1 Company.

2. Financial mechanism:

During preparation of charter for company organization and operation, the following matters should be taken into account: the capital for funding items related to transport development and operation is subject to on-lending of foreign loans (according to the Decree No. 78/2010/ND-CP of the Government dated July 14th, 2010 on on-lending of the Government's foreign loans). Actually the on-lending is subject to the company's responsibility, due to the fact that the company is not established yet so the investor shall take out loans on behalf of the company for duly disbursement of on-lending-originated expenses and costs in order to meet the project progress and then the above loan shall be handed over to the company after its establishment. In order to facilitate this, the specific plan and loan repayment schedule should be supplemented to the proposal in accordance with the applicable laws.

3. Human resource:

Due to the fact that urban railway passenger transport service is a low-profit business, the costs and expenses should be cut down to the maximum possible for all items. Therefore, the number of staff under the proposal should be well-checked based on the fact that the company manages and operates a modern equipment system with applied information technology. Besides, MPI suggests HCM-PC paying attention to guiding principles of the Vice Minister Hoang Trung Hai in the Notice No. 463/TB-VPCP of the Government Office dated December 30th, 2013 at the conference on the implementation of Hanoi urban railway project, Cat Linh – Ha Dong Line (same kind of project): “The use of human resource available at existing transport companies should be considered. [Relevant parties should] Be noted that the company only conducts minor jobs of management, operation, repairs. Major overhaul, repairs of urban railway should be conducted based on co-operation with capable domestic units, such as Vietnam Railways Cooperation.”. Therefore, the explanation on using human resource available at existing transport companies governed by HCM-PC should be supplemented to the proposal in order to reduce the costs and expenses for recruitment and training un-skilled employees, as well as recruitment costs of employees for major overhaul, repairs of urban railway.

The plan for human resource training should be supplemented to the proposal. In the present, the Ministry of Transport (“MOT”) had the “Proposal on organizing and training of urban railway human resource in the period of 2013-2020” as approved in the Decision No. 127/QD-BGTVT of the MOT dated January 14th, 2014. Accordingly, the Railway Vocational College is determined to be the training center on urban railway operation for the country. The MPI

suggests the MOT and HCM-PC concurring to the training plan to avoid duplicate job and waste of all resources.

MPI suggests HCM-PC studying the above for modifying and finalizing the proposal.

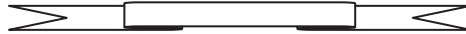
Recipients:

- As above;
- For record: Record Office, Department of Infrastructure & Urban centers (KCHT&DT) (H, 3 copies)

**On behalf of MINISTER
VICE MINISTER
(Signed and sealed)**

Nguyen Van Trung

**HO CHI MINH CITY PEOPLE'S COMMITTEE
MANAGEMENT AUTHORITY FOR URBAN RAILWAYS**



ESTABLISHMENT PROPOSAL

**HO CHI MINH CITY URBAN RAILWAY NO. 1
ONE-MEMBER LIMITED LIABILITY COMPANY**

Table of Contents

A.	LEGAL GROUNDS FOR ESTABLISHMENT OF HO CHI MINH CITY URBAN RAILWAY NO.1 ONE-MEMBER LIMITED LIABILITY COMPANY	4
B.	NECESITY FOR ESTABLISHMENT OF HCMC URBAN RAILWAY NO. 1 ONE-MEMBER LIMITED LIABILITY COMPANY.....	5
I.	Real-life requirements	5
II.	Characteristics of urban railways to be taken into account for establishing an operation and maintenance unit	6
III.	Specific conditions for Ho Chi Minh City to establish HCMC Urban Railway No. 1 One-member Limited Liability Company	6
C.	PROJECT PURPOSES	7
D.	PLAN ON ESTABLISHMENT AND ORGANIZATIONAL STRUCTURE OF THE COMPANY	7
I.	Proposed model for the Company	7
II.	Basic Information of the Company	8
III.	The organizational-personnel structure of the Company corresponding to its activities ..	9
E.	FINANCE REGIME	17
I.	Public-utility service companies.....	17
II.	From 2014 to 2017	17
III.	From 2018	18
F.	CHARTER CAPITAL.....	24
I.	From 2014 to 2017	24
II.	From 2008	25
G.	ASSESSMENT ON FEASIBILITY OF THE COMPANY’S ESTABLISHMENT	26
I.	Assessment on socio-economic influences and feasibility of the Company’s establishment in comparison with the planning and development strategies of economic industries, sectors and regions.	26
II.	The market conditions, demands and prospects of public transport services provided by the Company, the operating and developing plan of the Company after 5 years since the operation of Ben Thanh – Suoi Tien line:	26

III. Capability for providing manpower, materials, power supply, technology, and other necessary conditions for the Company's operation after its establishment.....	28
H. EMPLOYEE ATTRACTION AND RECRUITMENT, TRAINING AND RETENTION OF THE COMPANY'S HUMAN RESOURCES	28
I. From 2014 to 2017	28
II. From 2018	29
ANNEX 1(<i>HCMC Urban railway system</i>).....	31
ANNEX 2 (<i>The details of organization and personnel chart of Company from 2018</i>).....	32
ANNEX 3 (<i>Estimates of operation expenses for the period of 2014-2017</i>).....	39
ANNEX 4 (<i>Monthly Wage Estimates of the Company for the 2014-2017 period</i>).....	40
ANNEX 5 (<i>Extracts form the related terms on the establishment of the Company in the Meeting Minutes signed on November 26th, 2006 between JBIC and the Government of Socialist Republic of Vietnam</i>)	42
ANNEX 6 (<i>Official Notice No. 317/TB-VPCP of the Government Office dated August 8th, 2014 on conclusions of Deputy Prime Minister Hoang Trung Hai at a cabinet meeting on the implementation of the urban railway project of Ben Thanh – Suoi Tien Line and being reported on the urban railway project of Ho Chi Minh City</i>)	43

A. LEGAL GROUNDS FOR ESTABLISHMENT OF HO CHI MINH CITY URBAN RAILWAY NO.1 ONE-MEMBER LIMITED LIABILITY COMPANY

- Law on Railway No. 35/2005/QH11 dated June 27th, 2005;
- Law on Enterprises No. 60/2005/QH dated November 29th, 2005;
- Minutes of Discussion between Japan Bank for International Cooperation and the Government of Vietnam dated November 16th, 2006 regarding the project of Ho Chi Minh City urban railway project (Ben Thanh - Suoi Tien Line);
- Decree No. 172/2013/ND-CP of the Government dated November 13th, 2013 on establishment, reorganization and dissolution of State-owned one-member limited liability companies and their subsidiaries being one-member limited liability company;
- Decree No. 130/2013/ND-CP of the Government dated October 16th, 2013 on production and provision of public-utility products and services;
- Decree No. 71/2013/ND-CP of the Government dated November 7th, 2013 on State-owned capital investment in enterprises and finance management of 100%-State-owned enterprises;
- Decree No. 49/2013/ND-CP of the Government dated May 14th, 2013 giving detailed implementation of a number of articles of the Labor Code on wages;
- Decree No. 50/2013/ND-CP of the Government dated May 14th, 2013 providing management of employment, wages and bonuses for employees working in State-owned one-member limited liability companies; and Decree No. 51/2013/ND-CP of the Government dated May 14th, 2013 providing wages, remunerations, bonuses for members of the Member's Council, company Chairman, company Inspector(s), General Director or Director, Deputy General Director or Deputy Director and Chief Accountant of State-owned one-member limited liability companies;
- Decree No. 109/2006/ND-CP of the Government dated September 22th, 2006 providing and giving detailed implementation of a number of articles of the Law on Railway;
- Decision No. 568/QĐ-TTg of the Prime Minister dated April 8th, 2013 approving the master plan on development of transportation of Ho Chi Minh City ("HCMC") by the year of 2020 with a vision after the year of 2020;
- Decision No. 37/2014/QĐ-TTg of the Prime Minister dated June 18th, 2014 on criteria and lists for classification of State-owned enterprises;
- Official Notice No. 317/TB-VPCP of the Government Office dated August 8th, 2014 on conclusions of Deputy Prime Minister Hoang Trung Hai at a cabinet meeting on the implementation of the urban railway project of Ben Thanh – Suoi Tien Line and being reported on the urban railway project of Ho Chi Minh City;
- Circular No. 220/2013/TT-BTC of the Ministry of Finance dated December 31st, 2013 giving detailed implementation of a number of articles of Decree No. 71/2013/ND-CP of the Government dated November 7th, 2013 on State-owned capital investment in enterprises and finance management of 100%-State-owned enterprises;
- Circular No. 18/2013/TT-BLĐTBXH of the Ministry of Labour, War Invalids and Social Affairs dated September 9th, 2013 giving detailed implementation of management

of employment, wages and bonuses of employees in State-owned one-member limited liability companies; and Circular No. 19/2013/TT-BLDTBXH of the Ministry of Labour, War Invalids and Social Affairs dated September 9th, 2013 giving detailed implementation of wages, remunerations, bonuses for members of the Member's Council, the company Chairman, company Inspector(s), General Director or Director, Vice General Director or Vice Director, Chief Accountant of State-owned one-member limited liability companies;

- Action Plan No. 12-CTrHD/TU of HCMC Committee Party dated March 16th, 2011 on implementation of the Resolution of the 9th HCMC Party Congress on the traffic congestion reduction program of the 2011-2015 period and the Decision No. 25/2011/QD-UBND of HCMC People's Committee dated May 14th, 2011 stipulating the implementation plan of the Resolution of the 9th HCMC Party Congress on the traffic congestion reduction program of the 2011-2015 period with a vision of 2020.

- Decision No. 1453/QD-UBND of HCMC People's Committee dated April 6th, 2007 approving the investment project on construction of the Ben Thanh – Suoi Tien urban railway line;

- Decision No. 119/2007/QD-UBND of HCMC People's Committee dated September 13th, 2007 on establishment of the Management Authority for Urban Railways under HCMC People's Committee;

- Decision No. 4474/QD-UBND of HCMC People's Committee dated October 11th, 2010 approving the investment project on construction of the No. 2 HCMC urban underground railway (Ben Thanh – Tham Luong Line);

- Decision No. 51/2013/QD-UBND of HCMC People's Committee dated November 22th, 2013 stipulating the Regulations on organization and operation of the Management Authority for Urban Railways;

- Official Letter No. 3566/UBND-DTMT of HCMC People's Committee dated July 15th, 2013 giving an approval in-principle for the “Establishment plan of Operation and Maintenance Company for Urban Railways in the city”; assigning the Enterprise Renovation Management Board to be in charge hereof and to cooperate with the Department of Home Affairs and relevant bodies for instructing Management Authority for Urban Railways for the purpose of implementing the establishment proposal of Operation and Maintenance Company for Urban railways in Ho Chi Minh City;

- Official Notice No. 649/TB-VP of HCMC People's Committee Office dated August 19th, 2014 on conclusions of HCMC Chairman Le Hoang Quan on establishment of the urban railway one-member limited liability company.

B. NECCESSITY FOR ESTABLISHMENT OF HCMC URBAN RAILWAY NO. 1 ONE-MEMBER LIMITED LIABILITY COMPANY

I. Real-life requirements

According to the master plan on development of transportation of Ho Chi Minh City by the year of 2010 with a vision after the year of 2020 approved by the Prime Minister under the Decision No. 568/QD-TTg dated August 4th, 2013, HCMC shall construct 08 radial and ring urban railway lines to mutually link the central areas of the city and 03 tramways or monorails (*Please refer to Annex 1*).

Among these above, the No 1. urban railway line (from Ben Thanh – to Suoi Tien) is favourable by the Government by receiving a ODA loan from the Japanese government for construction early than others. The construction of elevated section of the project was started from the end of 2012 and is planned to be finished in 2017. The design works and provision of electromechanical equipment, rails, railcars were started from the middle of 2013 and is planned to be finished in 2018. The selection of contractors for construction of the underground lines is promptly carried out. As scheduled, the No. 1 line shall be completely constructed and started its operation from 2018.

The urban railway line No. 2 (for the 1st stage, it shall be from Ben Thanh to Tham Luong) is under the implementation of technical design, contractor selection for construction works and provision of mechanic electronic equipment and is planned to be finished after 2018. The other railway urban lines are under the stage of investment planning in order to acquire foreign capital sources under which the urban railway line No. 5 is already supported by the undertakings to provide ODA capital from the Spanish government, Asian Development Bank and European Investment Bank.

II. Characteristics of urban railways to be taken into account for establishing an operation and maintenance unit

Normally the road construction works shall be operated and exploited after the completion of construction works. However, the operation and development of urban railways require pre-operation jobs done, including staff recruitment, basic technical training for operation and maintenance tasks, establishment of organizational structure and preparation of rules and regulations for its management and trial run.

Based on the researches made from the countries that successfully established and developed the urban railways, such as Japan (Tokyo City), Indonesia (Jakarta City), India (Delhi City), Thailand (Bangkok City), the units in charge of construction of urban railways shall also conduct the operation and maintenance of such railways. In some cases, the mentioned company is established at the beginning in order to get involved in design and construction works and preparation of necessary conditions for operation and maintenance tasks when the railways are operated.

In summary, as experienced by other countries, the units in charge of operation and maintenance of urban railways should be established some [many] years early before operating and exploiting such lines. These units shall get involved in construction tasks and accept hand-over of parts of finished works and prepare for the operation of the urban railway when it is completed.

III. Specific conditions for Ho Chi Minh City to establish HCMC Urban Railway No. 1 One-member Limited Liability Company

According to the Minutes of Discussion entered into on November 26th, 2006 between Japan Bank for International Cooperation (JBIC), now known as Japan International Cooperation Agency (JICA), and the Government of Social Republic of Vietnam (being the basis for negotiating and conducting the ODA Loan Agreement for Ben Thanh – Suoi Tien urban railway), the urban railway company under HCMC People's Committee is established at least three years early before operating and exploiting Ben Thanh – Suoi Tien line (as experienced by Japan which has developed its urban railway system for a hundred years.). This is one of compulsory conditions stated in the bilateral minutes required by Japan in order to enter into the ODA Loan Agreement to finance this project.

During the 2011-2013 period, the Japan International Cooperation Agency (JICA) also sponsored HCMC to develop the Project on Technical support to establishment of Ho Chi Minh City Urban Railway Operation and Maintenance Company. This project was already studied and proposed with general key matters for establishment, organization and operation of HCMC Urban Railway Company; as well as preparation for accepting hand-over of the first railway line (Ben Thanh – Suoi Tien line), operation and maintenance of such line (as a model of other lines and of the whole system). Once again, Japanese experts of this project propose that such urban railway company should be established as soon as possible, at least three years early before the operation of the first line.

As scheduled, JICA shall continue supporting HCMC for advanced researches, personnel training and preparation for HCMC Urban Railway Company to accept hand-over of and operate Ben Thanh – Suoi Tien line expectedly around the year of 2018. With regard to other urban railway lines currently under the stage of contractor selection or investment project planning, the research and preparation for each of them are being conducted (some of them are pending or reach no outcome yet).

In summary, based on the schedule for operation and development of the first urban railway line, Ben Thanh – Suoi Tien line shall start its operation from 2018 then the urban railway company should be established from 2014 to duly conduct the preparation of necessary resources and technical conditions in order to accept hand-over of, safely operate and exploit such railway lines, and to become a model of the up-coming lines of the HCMC urban railway system.

C. PROJECT PURPOSES

The project hereby proposes overall and essential matters for establishment and its organizational structure of HCMC Urban Railway No. 1 One-member Limited Liability Company (*hereinafter referred to as the “Company”*); accepting hand-over of, conducting the operation and maintenance of the first urban railway line of the city (Ben Thanh – Suoi Tien line) which are under construction and planned to be completed around 2018. After that, the Company shall accept hand-over of and conduct the operation and maintenance of other lines of HCMC urban railway system.

D. PLAN ON ESTABLISHMENT AND ORGANIZATIONAL STRUCTURE OF THE COMPANY

I. Proposed model for the Company

The proposed model for the Company is prepared based on the applicable regulations, as follows:

- Clause 2 Article 55 of the Law on Railways (2005) provides that “the provincial people’s committee shall be incharge of investment, contruction, management and operation of the urban railway”.

- Decree No. 172/2013/ND-CP of the Government dated Novemver 13th, 2013 on establishment, reorganization and dissolution of State-owned one-member limited liability companies and its subsidiaries being one-member limited liability companies (Items c and d, Article 5) provides that: “in the sectors of management and development of urban railway

infrastructures and management of railway transport, it is considered to set up limited liability companies”;

– Decision No. 37/2014/QĐ-TTg of the Prime Minister dated June 18th, 2014 on criteria and lists for classification of State-owned enterprises provides that: “the State holds 100% of charter capital of the enterprises involving management and development of urban railway infrastructures and operation of urban railway transport”.

In conclusion, the model for the Company is ***one-member limited liability company wholly owned by the State and under the HCMC People’s Committee.***

II. Basic Information of the Company

1. Company name:

- Vietnamese name: Công ty trách nhiệm hữu hạn một thành viên Đường sắt Đô thị số 1 Thành phố Hồ Chí Minh
- English name: Ho Chi Minh City Urban Railways No.1 Company Limited;
- Abbreviated name: HURC1;

2. Owner: Ho Chi Minh City People’s Committee;

3. Type: 100%-State-owned one-member limited liability company;

4. Head office: No. 29 Le Quy Don, Ward 7, District 3, Ho Chi Minh City (being the head office of Ho Chi Minh City Management Authority for Urban Railways);

5. Operation time: 99 years from the date of obtaining the Decision on establishment of the Company

6. Scope of Business:

a) Main business lines:

- Industry Code 4931: Transport of passengers by urban or suburban railway;
- Industry Code 3312: Repair of machinery, equipment related to urban railways;
- Industry Code 3315: Repair and maintenance of transport equipment;
- Management, exploitation, maintenance and repair of urban railway infrastructure;
- Business of urban railway infrastructure;

b) Other business lines apart from main business lines:

- Industry Code 5221: Services directly supporting road and railway transport;
- Industry Code 7310: Advertising;
- Industry sector: Market research and public opinion poll;
- Premises lease, passenger services, parking-lot lease, lease of premises for installation of telecommunication cables, etc;

7. Assigned main tasks

*** 2014 – 2017 period** (to essentially preparing for the operation and maintenance of the first urban railway line in Ho Chi Minh City, i.e. Ben Thanh – Suoi Tien Line)

In this stage, the Company shall:

- Prepare the recruitment programs and plans, execute labour contracts for urban railway operation management;
- Prepare the plans, manage and implement staff training for management of urban railway operation; conduct cooperation and affiliation activities for urban railway operation training.
- Accept and implement programs, projects regarding to urban railway operation management sponsored for Ho Chi Minh City through MAUR;
- Prepare for urban railway business activities;
- Prepare for non-fare business activities (i.e. other business activities beyond the metro operation) (if assigned by HCMC People's Committee)
- Guarantee to fully collect and comply with regulations on train operation and dispatch;

*** From 2018:**

The Company shall:

- Manage and exploit HCMC urban railway lines;
- Guarantee the quality of services of passenger transport by urban railway;
- Provide safe and friendly transport services for passengers;
- Train employees directly involved in the operation, development and maintenance of urban railways system equipment;
- Implement types of non-fare business (e.g. advertising, premises lease, parking-lot lease, lease of premises for installation of telecommunication cables and other types in conformity with applicable regulations);
- Conduct tasks assigned by HCMC People's Committee.

III. The organizational-personnel structure of the Company corresponding to its activities

As for the 2014 – 2017 period, the Company shall conduct preparation works to ensure the operation of Ben Thanh – Suoi Tien urban railway line when this line is completed and started its operation as scheduled from 2018. Therefore, we suggest the streamlined management structure which shall be gradually improved based on the assigned tasks and following the time schedule and in order to reach the expected personnel structure with 394 employees in total (for Ben Thanh – Suoi Tien Line), particularly:

2014 – 2015:

*** The operation of the Company**

The Company is planned to be established in 2014. From 2014 to 2015, the Company shall conduct the following tasks:

- Establish and improve relevant regulations and manage organizational structure of the Company;

- Receive and proceed the support of JICA: SAPI “Preparation of Management System of Ho Chi Minh City Urban Railways” (expected in 2 years 2014 – 2015);
- Accept training programs for urban railway operation management;
- Implement procedures for application and acceptance of Technical Cooperation Phase 2 for Company Establishment Support (as planed to be carried out in 2016-2017);
- Cooperate with Management Authority of Urban Railways for the operation and maintenance of urban railways lines;
- Prepare training plans of human resouces for the operation of urban railways;
- Cooperate with Management Authority of Urban Railways regarding matters of connecting, integrating urban railways system to other types of public transport;
- Update and keep records on the construction progress of urban railway project No.1 and No.2.

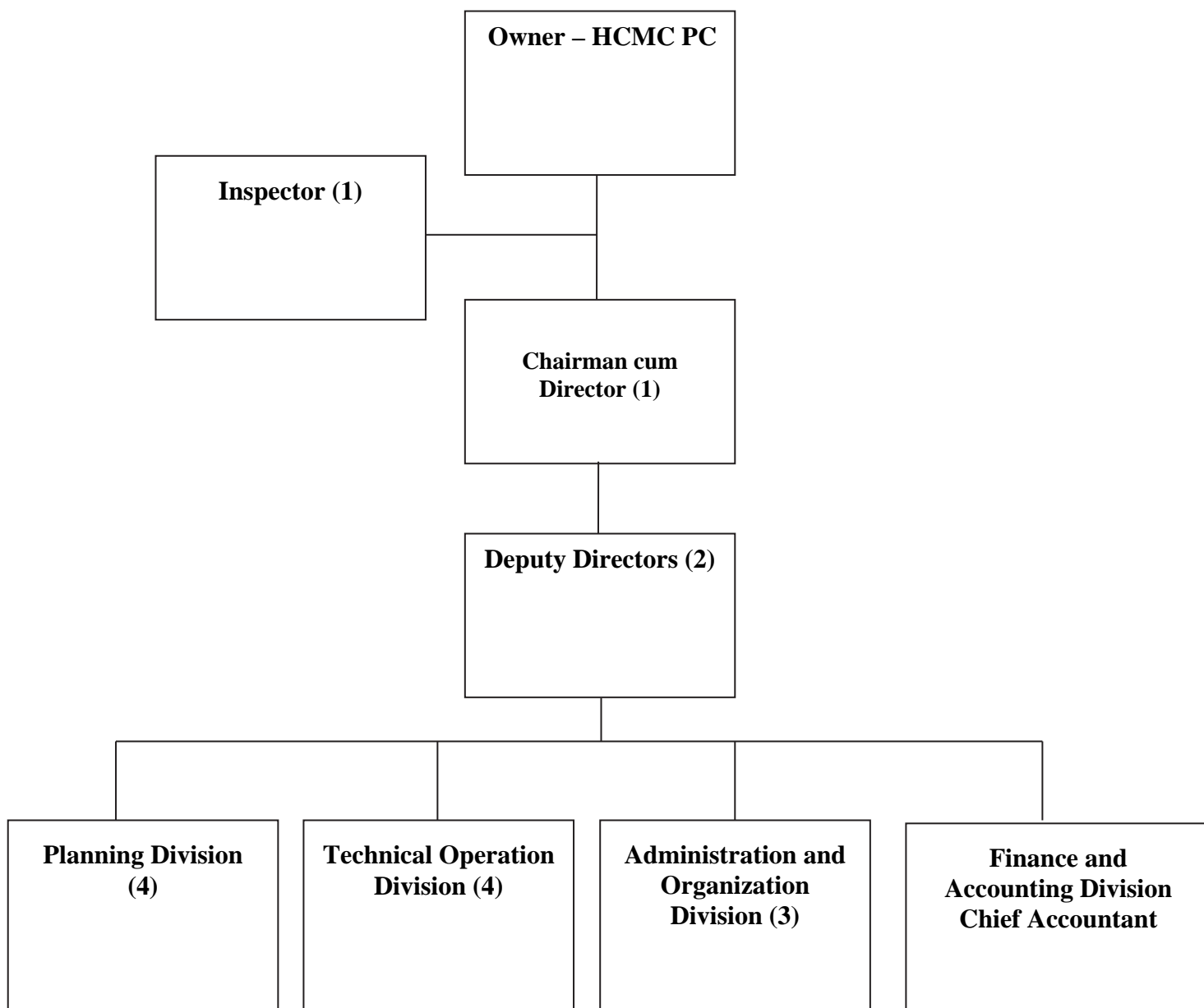
*** The organizational structure of the Company**

At the begining, the number of employees shall be 17, including:

- 01 Chairman cum Director;
- 01 Inspector;
- 02 Deputy Directors;
- 13 employees working as managers in the following departments: Administration and Organization Division; Planning; Technical Operations; Finance and Accounting;

These above employees are moved mainly from Management Authority of Urban Railways, while the others will be further recruited (if neccessary) according to the demand of tasks.

The initial organizational structure when the Company is established shall be:



Note: (number): for showing the number of employees in each division

*** Training for the Company’s employees:**

In this period, the Company shall concentrate on training employees at management level. Specifically, the employees in the SAPI “Preparation of Management System of Ho Chi Minh City urban railway” sponsored by JICA shall conduct researches on the organization, regulations, operation of the Company based on the experiences of Japan’s urban railway experts. Previously, the employees in Phase 1 (2011 – 2013) of Project “Technical Cooperation of Establishment of Operation & Maintenance Company”, have been trained through field trip for learning the operation and maintenance of urban railways in Japan for 10 days (conducted for 10 staffs in January 2012). Moreover, these managers shall be entitled to field trips for learning the operation and maintenance of urban railways in some countries

under the city training programs for enhancement of human resources capacity of the city and the short term training programs by other sponsors.

In 2016

*** The Operation of Company:**

Apart from the ongoing tasks from the period of 2014-2015, the Company shall conduct the following assignments:

- Accepting and implementing the Technical Cooperation Phase 2 for Company Establishment Support sponsored by JICA (Japan) and proceed the researches related to the operation, maintenance of urban railways and the training programs sponsored by JICA;

- Carrying out the recruitment and training plans for employees involved in the operation and maintenance of urban railways (expectedly focused on theory training and advanced training for train drivers qualified by degrees of technical colleagues to be lectures for the next ranks of train drivers).

- Updating the construction progress of urban railway No. 1 line and No. 2 line;

- Coordinating with the contractors of No. 1 Line for technical training of operation and maintenance.

*** The organizational structure of the Company:**

The number of employees is expected to be increased into 107 employees, including:

- 01 Chairman cum Director;

- 01 Inspector;

- 02 Deputy Directors;

- 36 employees working as managers (in which the increase in employees for each daily task shall be gradually defined for co-ordinating with Japanese experts in projects sponsored by JICA and training programs);

- 67 employees in executive operation and maintenance of urban railways, including 1 rail operation manager in the site, 14 train drivers, 5 train station staffs, 1 maintenance staff, 7 locomotive – railcars maintenance staffs; and 39 rail – architecture - electromechanical maintenance staffs.

*** Training for the Company's employees:**

- Employees at management level shall be entitled to the training of urban railway management in some countries, training for organization, regulations, operation of the Company in Phase 2 of Project of Technical support on setup the Company sponsored by JICA and the programs for human resources development.

- Employees directly involved in the operation and maintenance of urban railways: they are key personnel trained by foreign experts and mostly gained practical experiences from Japanese urban railway companies. Later these employees shall instruct employees of the coming generations.

- + Train operation employees (train drivers, operators) shall be entitled to the theory training in Vietnam by foreign experts (approximately 02 months) and subsequently the

practical training in Japan (approximately 02 months) by way of learning from the actual works of train driving, daily train operation and practicing with simulators.

+ Train station employees shall be entitled to the theory training in Vietnam by foreign experts (approximately 02 months) and subsequently the practical training in Japan (approximately 03 weeks) by way of learning the actual works of train station management.

+ Maintenance employees shall be entitled to the training of which the contents are proposed by the contractors on the basis of on-the-job training (OJT) and under the instructions of foreign experts. At the present time, the contractors are under the process of preparing the the detailed training plans.

In 2017

*** The Operation of Company:**

The Company shall focus on recruiting the sufficient number of train drivers (expectedly qualified with the vocational colleague's degrees in according to the current regulations), conducting the additional theory training for practising train driving of the main line once the elevated line is finalized, accomplishing the training for the train station employees (expectedly based on the model under which the trained employees shall instruct and guide employees of the coming generations); promoting the technical training for maintenance employees from relevant contractors of No. 1 Line; accept the hand-over of infrastructure and facilities of No. 1 urban railway line update the construction progress of No. 2 urban railway line.

The Company shall progressively improve the management system of the Company; standardize the internal regulations of the Company, finish the recruitment and training of staffs qualified for the operation and maintenance of No. 1 Line; and be prepared for the non-fare business activities (e.g. other business lines beyond the urban railway operation business);

*** The organizational structure until the end of 2017**

The total employees are 394.

At the headquarter: 102 employees

- Members' Council: 03 employees;
- Inspectors: 03 employees;
- Director and 3 Deputy Directors;
- Administration and Legal Division: 07 employees;
- Human Resources Division: 03 employees;
- Finance and Accounting Division, Chief Accountant: 07 employees;
- Planning and Investment Division: 07 employees;
- Supplies and Equipment and Services Division: 03 employees;
- Business and Public Relations Division: 12 employees;
- Technical Operation Division: 29 employees;

- Safety and Operation Management Division: 24 employees (including 19 employees in the Operation Control Center);

Operation Unit (Line 1): 213 employees;

Maintenance Unit (Unit 1): 79 employees;

The details of company personnel shall be specified in Annex 2.

*** Training for the Company's employees:**

– Employees at management level shall be continuously entitled to the training of urban railway management in some countries, training for organization, regulations operation of Company through Phase 2 of Project of Technical Cooperation of Establishment of Operation & Maintenance Company and the city training programs for enhancement of human resources capacity.

– Employees directly involved in the operation and maintenance of urban railways:

+ Train operation employees (train drivers, operators): The theory training for newly-hired employees shall be continuously conducted.

+ Train station employees: The theory training for new employees shall be continuously conducted; and the key personnel shall conduct the additional theory training for new employees.

+ Maintenance employees: The contractors shall conduct the basic technical training for maintenance employees.

From 2018

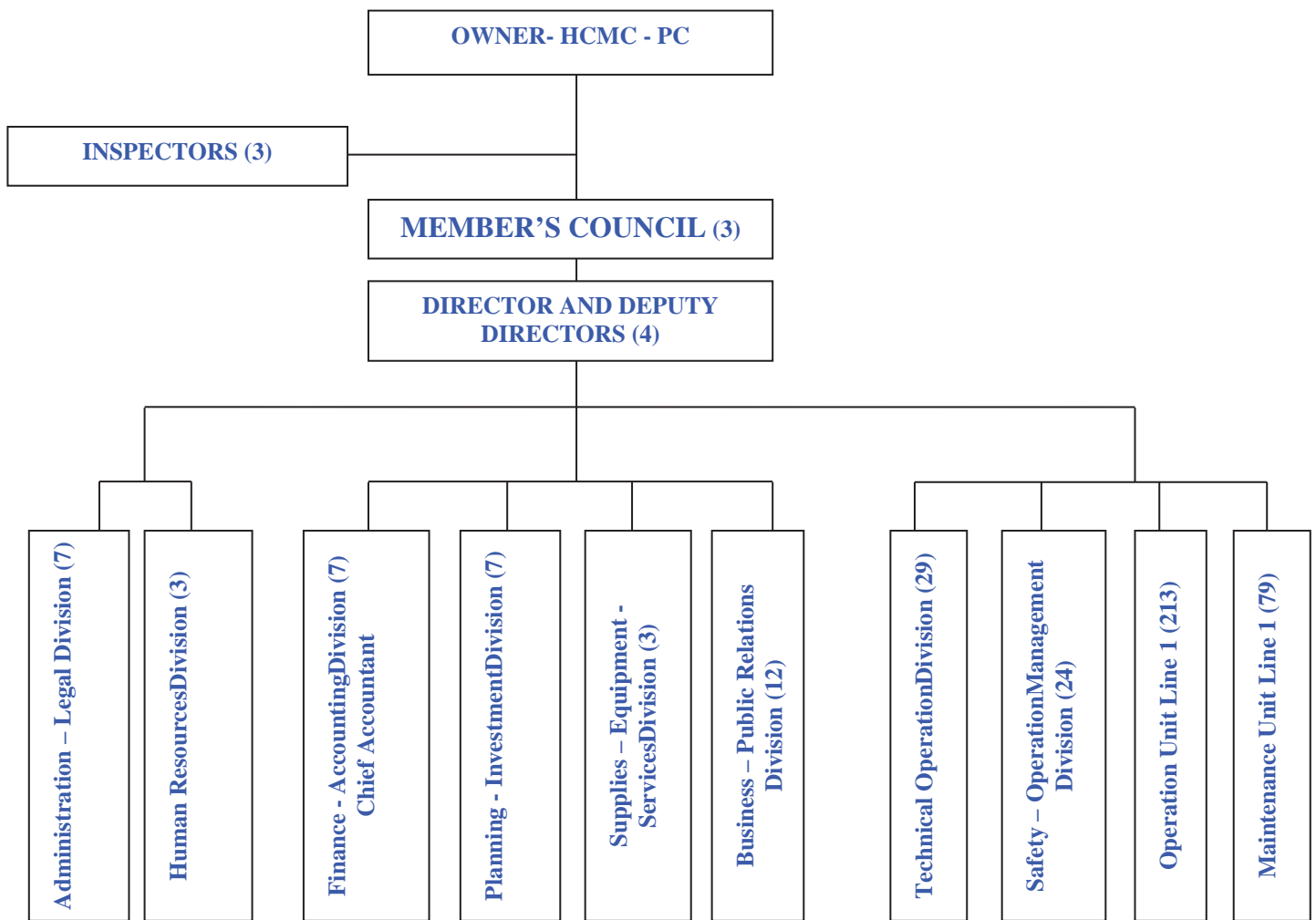
*** The Operation of Company**

The Company provide public-utility services, being urban railway transport service, and related services as assigned by HCMC People's Committee, which shall be initially provided at Ben Thanh – Suoi Tien line;

*** The Organizational Structure of Company**

The total number of employees is 394 (which are firstly of the operation and maintenance of Ben Thanh – Suoi Tien line).

The chart of organizational structure from 2018 as below:



Note: (number): for showing the number of employees in each division

The details of the Company's organizational and personnel chart from 2018; the estimated number of employees directly involved in operation of for Ben Thanh – Suoi Tien line; the references and comparative analysis of the quantity of employees for for the operation and maintenance of **some urban railway lines** in some countries as showed in Annex 2;

Table 1: the estimated number of employees in years

Unit: persons

Year (Calculated until year end)	2014	2015	2016	2017	2018
Employees of management positions (at the Company's headquarter in the future)	17	17	40	102	102
Inspector(s)	1	1	1	3	3
The Company Chairman or the Member's Council	1 (*)	1 (*)	1 (*)	3	3
Director(s)				1	1
Deputy Directors	2	2	2	3	3
Administration – Legal Division	3	3	5	7	7
Human Resources Division			3	3	3
Finance – Accounting Division – Chief Accountant	2	2	5	7	7
Planning – Investment Division	4	4	4	7	7
Supplies – Equipment – Services Division	-	-	-	3	3
Business – Public Relations Division	-	-	6	12	12
Technical Operation Division	4	4	9	29	29
Safety – Operation Management Division	-	-	4	24	24
Employees in operation, maintenance of urban railways (at site of Company in the future)	0	0	67	292	292
Train Operation Manager	-	-	1	1	1
Train drivers		-	14	56	56
Train station staffs	-	-	5	156	156
Maintenance staffs	-	-	1	1	1
Locomotive – railcars maintenance staffs	-	-	07	13	13
Rail – architecture - electromechanical maintenance staffs	-	-	39	65	65
The total number of employees	17	17	107	394	394

Note: (*) Chairman shall hold Director position concurrently;

*** Training for the Company's :**

– Employees directly involved in the operation and maintenance of urban railways:

+ Train Operation employees (train drivers, operators): The key personnel shall conduct the additional theory training for newly-hired employees. Moreover, all train drivers shall be entitled to the train driving practice in the main line under the instructions of foreign experts.

+ Train station employees: the foreign experts shall provide the guidance to these staffs in train stations of No. 1 line (under the form of on-the-job training - OJT)). The key personnel shall conduct the additional theory training for new employees.

+ Maintenance employees: The contractors shall continue conducting the technology transfer and on-the-job training (OJT) to maintenance employees in first 5-year of operation and exploitation.

E. FINANCE REGIME

I. Public-utility service companies

According to the Decree 130/2013/ND-CP of the Government dated October 16th, 2013 on production and provision of public-utility products and services:

“Public transport services in urban areas” are listed as public-utility products and services. Furthermore the urban railway transport service for passenger is one of “public transport services in urban areas”, as a result, such services provided by the Company shall be deemed as public-utility products and services;

“Management and maintenance of national railway infrastructure systems” are listed as public-utility products and services. Management and maintenance of urban railway infrastructure systems are similar with such services in nature but not clearly listed as public-utility products and services, therefore it should be reported to the Prime Minister for consideration and final decision;

HCMC People’s Committee shall decide the production method (by assigned plan, order or tender) for public-utility products and services covered by the city budget expenditure estimates and assign it to the Company for implementation as prescribed, and decide specific price subsidy and support levels for production and provision of public-utility products (according to Articles 6 and 7);

The Company is a State-owned one-member limited liability company with public-welfare tasks so that the State shall provide adequate capital for the formation of assets to serve the production and provision of public-utility products and services (according to Article 9).

II. From 2014 to 2017

The Company shall prepare for conducting the operation and maintenance of the first urban railway line (Ben Thanh – Suoi Tien line), act as a partner for accepting and implementing projects and programs related to the urban railway operation provided by the sponsors. We hereby suggest HCMC People’s Committee approving the method of “assigned plan” to the Company (which produces and provides public-utility services). The Company shall be fully financed by the city budget because the Company produces no profits during this period.

During this period, the Company shall need the supply of facilities, office equipment, employees’ salary payment, other relevant service fees, costs for urban railway , etc. The estimated expenses and costs of the Company for the period of 2014 - 2017 shall be as below:

Table 2: The Company's estimated operational costs expenses from 2014 - 2017

(The unit: VND million)

Categories		2014	2015	2016	2017	Total
I	Salary payment for employees, related service costs, costs for urban railway promotion, training costs	2,086	2,086	8,558	29,828	42,557
1	Salary payment for employees	1,418	1,418	6,978	24,460	34,274
2	Related service fees	278	278	602	956	2,114
3	Expenses for advertising/promotion of urban railways	0	0	0	1,500	1,500
4	Training costs	200	200	200	200	800
5	Provision costs (10% the item from 1 -4)	190	190	778	2,712	3,869
II	Assets and office equipment	2,399	2,072	3,760	5,539	13,770
1	Assets and equipment Costs	2,181	1,884	3,418	5,035	12,518
2	Provision Costs (10% of the item 1)	218	188	342	504	1,252
Total (I+II)		4,485	4,158	12,318	35,366	56,327

Notes:

- The Company's estimated expenses and costs in years are described in Annex 3;
- The details of salary payment for the 2014 – 2017 period is described in Annex 4;

The city budget shall financially ensure the operation of the Company for the stage of which Ben Thanh – Suoi Tien urban railway line has not been started operation (according to the Official Notice No. 649/TB-VP dated August 19th, 2014 of HCMC People's Committee Office on conclusions of Chairman of HCMC People's Committee Le Hoang Quan regarding the establishment Urban Railway No. 1 One-member Limited Liability Company).

III. From 2018

From 2018, the construction works of Ben Thanh – Suoi Tien line shall be finished and the Company shall accept hand-over of finished project and implement the operation and maintenance hereof. Also from 2018, the revenues from ticket sale and non-fare business shall be gradually be generated. Public transport services provided by the Company shall be subsidized by HCMC People's Committee.

1. The estimated investment capital for the Company

- a) The estimated initial investment capital

The total initial investment capital for the Company shall be grounded on the investment capital of BenThanh – Suoi Tien urban railway project.

Table 3: The estimated initial investment capital

Categories	Values according to the approved project	Notes
Infrastructures (Ben Thanh – Suoi Tien line)		
The 2.6-km underground line (including the provision and installation of elavators and escalators for stations and ventilation system)	9,228.8	As distributed by the central government budget
The 17.1-km elevated line (including the construction of depots,the provision and installation of the elavators, escalators in the stations)	12,618.6	
Equipment (Ben Thanh – Suoi Tien line)		
The electromechanical equipment, rails, locomotive, railcars (excluding elavators, escalators in the metro station and ventilation system for underground line) and the maintenance hereof	16,663.8	- As Reloaned by HCMC (as scheduled) - Being investment capital of the owner of the Company.
The information technology system for the Company’s office	124.6	
Total	38,635.8	

Notes: The above values has already included physical contingencies and price contingencies.

b) The finance policies on the total investment capital of the Company

– The urban railways infrastructures (including tunnel, overhead structure, rails, etc.) are financed by the Government and delivered to Ho Chi Minh City. The electromechanical equipment, locomotive – railcars (items related to operation and maintenance of urban railways) are financed through a reloan by the HCMC People's Committee from the Government. HCMC has the responsibility to pay for the amount reloaned from the Government.

– The urban railways' infrastrucures are owned by Ho Chi Minh City People's Committee. Therefore, Ho Chi Minh City People's Committee shall assign tasks to its departments for management duties and facilities overhaul/ maintenance.

– The electromechanical equipment, locomotive – railcars (items related to operation and maintenance of urban railways) are initially invested by HCMC to the Company; thus the armotization of such properties shall be conducted accordingly.

– The expenses for daily operation and maintenance shall be deducted from the Company's revenues;

– The replacement of electromechanical equipment and locomotive – railcars (in

case that the operational duration is over 30 years) shall be paid by the Company's accumulated monies, if not equivalent, HCMC People's Committee shall support them additionally.

2. The long-term finance analysis of the Company

The urban railways, without profit motive, shall aim to improve public-welfare, provide the solution to beating traffic congestion, to contribute to socioeconomic development of the city, etc. For the purpose of attracting passengers, the ticket prices need to be set at the affordable level in favour of the city residents's capacity. Therefore, according to the researches by Japanese experts, the revenues from the ticket sale are enough for covering the costs and expenses for operation and exploitation of such line but might not afford the capital recovery of urban railways.

The urban railway is obliged to meet the high demands of safety in order to enhance mass transport. To satisfy this requirement, the maintenance and repair (periodic repair, , major repair, overhaul, etc.) and renewal of equipment and machines shall be carry out based on the technical requirements. According to the experiences of Japan and other countries which has already operated thier urban railways ha, the electromechanical equipment, locomative – railcars might be fully replaced after 30 year of operation and exploitation. Thus, for the overview, the finance analysis of urban railways should be conducted for the period of 30 years.

a) Cost and expenses

Operational expenses and costs include employees' salary payment, utilities and sanitary costs, depreciation of fix assets, etc. Moreover, because of the characteristic "the renewal/replacement of electromechanical equipment based on its circle of life" applied the urban railway industry (such as the automatic toll system needs to be replaced after 5 years, respectively 10 years for electrification system, 20 years for telecommunications or signalling system, rails; and 30 years for locomativerailcars replacement), the armotization of electromechanical equipment is also carried out (also considered as costs and expenses).

b) Revenues

At first, the Company shall operate and exploit commercially Ben Thanh – Suoi Tien urban railway line. The ticket prices for passengers are calculated as a sum of entrance fee (EF) and travel distance (TD) of each km as an equation: $\text{Fare} = EF + 10\% EF * TD$

Grounded on the estimated number of passeners of this line (as supposed to be 90% in reality), there should be researched for proposing the rate of passenger fare provided that total revenues arising from from passenger fare and non-fare business (which estimatedly reach 1.0% of revenues arising from fare sale for the period 2018-2022; reach 3.0% of revenues from fare sale for the period 2023-2027; reach 5.0% of revenues from 2028) are sufficient for the costs of operation and maintenance of the line (including employees' salary payment, payment for energy, ultilities, spare parts and equipment). Accordingly, the passenger fare of urban railway for the first operational year is estimated as: Ticket price = VND8,000 + (plus) VND800 * (multiply) a number of kilometres of travel distance. After the first year, the rate of fare prices shall be revised for every 2 years according to inflation rate (estimated around 7% per year). As estimated, the maximum fare price for passenger non-stop

travelling from Ben Thanh (km 0+000 route) to Suoi Tien station (Km 18+821route) shall be VND23,000 during the first year of operation.

The determination of official fare price and the subsidization by HCMC in favour of passengers shall be made 01 year before the operation and exploitation of urban railway. In the case that HCMC People's Committee lowers the fare price to attract passengers, the Company shall be entitled to the price subsidization in accordance with the applicable regulations.

c) An overview of the Company's finance status as indicated in the following tables and figures.

Table 4: Finance status

Unit: USD million

Year	Estimated number of passengers (thousand persons/day)	Revenues	Operation and maintenance costs	Amortization	income after tax
2018	156	35.3	18.5	60.3	-43.4
2019	172	38.7	20.6	60.3	-42.2
2020	190	53.2	23.2	60.3	-30.2
2021	314	88.1	25.9	60.9	1.2
2022	335	102.9	28.8	60.9	13.1
2023	339	104.0	38.8	70.0	-4.8
2024	344	114.9	53.4	63.2	-1.7
2025	349	116.2	63.0	63.2	-10.1
2026	354	137.2	67.5	64.3	5.2
2027	369	142.6	75.4	64.3	2.8
2028	401	165.9	84.2	84.1	-2.4
2029	414	171.2	96.5	84.1	1.8
2030	451	210.8	104.1	72.7	32.3
2031	460	214.7	115.2	72.7	25.4
2032	473	246.6	127.5	72.7	44.1
2033	487	253.3	152.1	94.1	6.8
2034	500	287.2	157.2	94.1	31.5
2035	513	294.2	168.6	94.1	23.6
2036	524	328.5	181.2	95.6	38.8
2037	533	334.1	200.8	95.6	28.3
2038	541	383.1	209.3	112.5	45.9
2039	546	386.2	225.0	103.9	42.9
2040	551	419.2	242.1	104.3	54.6
2041	556	422.7	282.4	103.2	27.8
2042	558	469.1	280.7	103.2	63.9
2043	563	473.1	302.2	92.3	58.9
2044	568	522.6	335.4	92.3	71.2
2045	572	526.8	371.3	92.3	47.4
2046	574	590.7	389.8	92.3	81.5
2047	576	592.7	420.3	92.3	60.1
2048	578	641.5	453.7	120.5	50.5
2049	580	643.7	525.3	120.5	-2.2
2050	580	722.2	529.3	121.5	53.5
2051	580	722.2	571.8	119.3	23.3

Figure 1: Revenues and expenses

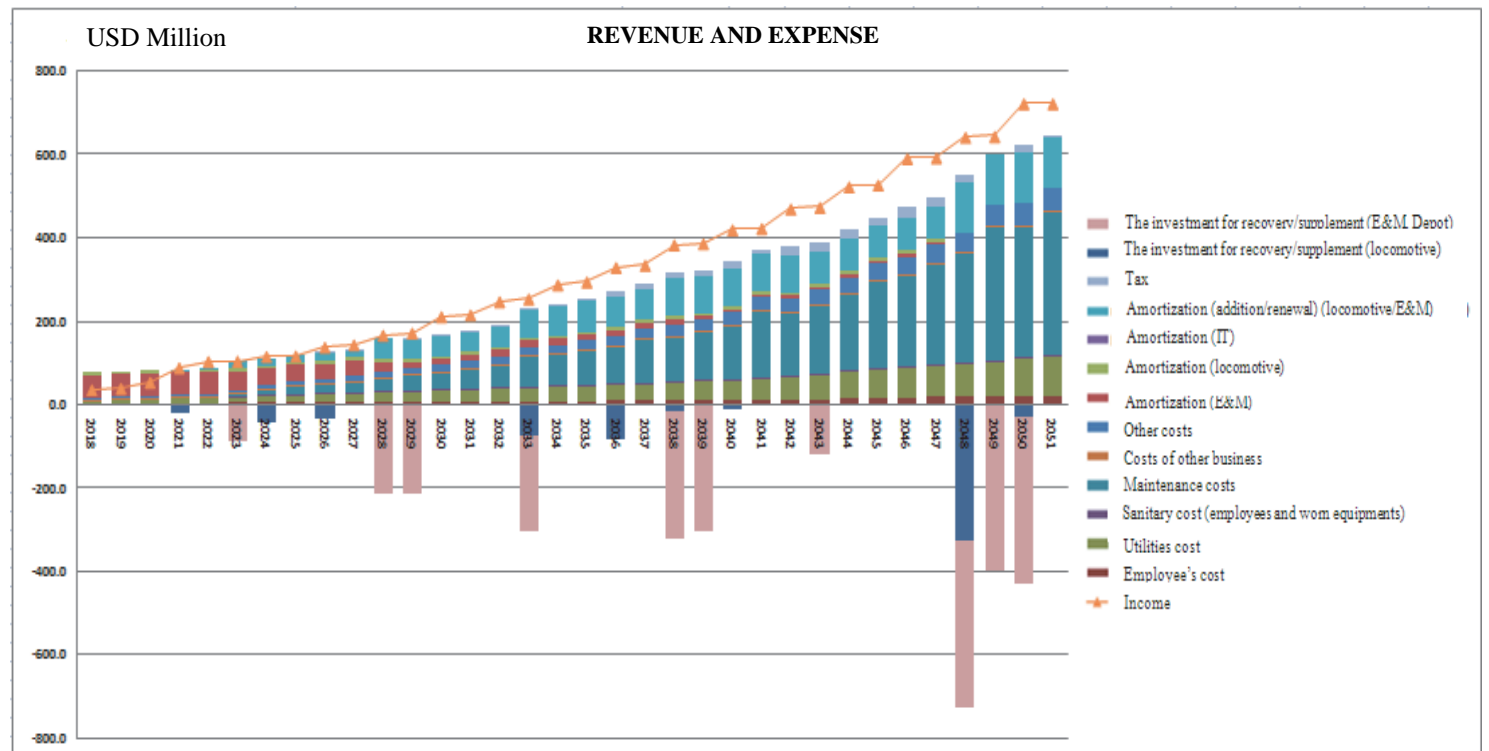
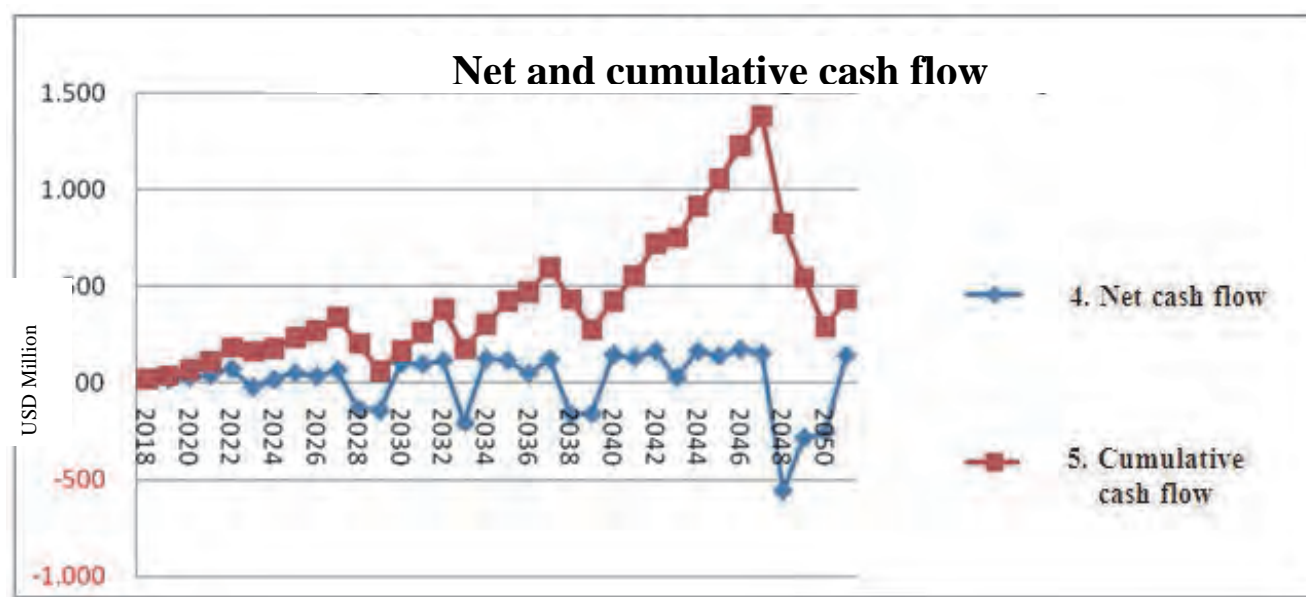


Table 5: The cash flow

Unit: USD million

Year	Cash flow from operating activities	Cash flow from replacement/purchase of equipment/material	Net cash flow	Accumulative cash flow
2018	16.9	0.0	16.9	16.9
2019	18.1	0.0	18.1	35.0
2020	30.1	0.0	30.1	65.1
2021	62.1	-20.6	41.5	106.6
2022	74.0	0.0	74.0	180.6
2023	65.2	-86.0	-20.8	159.8
2024	61.5	-42.7	18.8	178.7
2025	53.1	0.0	53.1	231.8
2026	69.5	-32.8	36.7	268.5
2027	67.1	0.0	67.1	335.6
2028	81.7	-216.1	-134.4	201.2
2029	85.9	-216.1	-130.2	70.9
2030	105.0	0.0	105.0	175.9
2031	98.1	0.0	98.1	274.0
2032	116.8	0.0	116.8	390.8
2033	100.9	-304.8	-203.9	186.9
2034	125.6	0.0	125.6	312.5
2035	117.7	0.0	117.7	430.2
2036	134.4	-84.4	50.0	480.2
2037	123.9	0.0	123.9	604.1
2038	158.4	-320.2	-161.8	442.4
2039	146.8	-304.1	-157.3	285.1
2040	158.9	-12.4	146.5	431.6
2041	131.0	0.0	131.0	562.6
2042	167.1	0.0	167.1	729.7
2043	151.2	-120.4	30.8	760.4
2044	163.5	0.0	163.5	923.9
2045	139.7	0.0	139.7	1,063.6
2046	173.8	0.0	173.8	1,237.4
2047	152.4	0.0	152.4	1,389.8
2048	171.0	-725.7	-554.7	835.2
2049	118.3	-399.6	-281.3	553.9
2050	175.0	-429.5	-254.5	299.4
2051	142.6	0.0	142.6	442.0

Figure 2: Net and cumulative cash flow



(Source: Extracted from “the establishment plan of Company is the first outcome for the Technical Cooperation Project sponsored by Japan International Corporation Agency – JICA, passed by HCMC People’s Committee under the Official Letter No. 3566/UBND-DTMT dated July 15th, 2013).

F. CHARTER CAPITAL

I. From 2014 to 2017

We suggest that the charter capital is capped at **14 billions Vietnam Dong**. The Company’s charter capital is contributed by the owner, HCMC People’s Committee, following the specific schedule and based on the capital need for the purchase of assets for the enterprise’s operation.

Explanation:

- During the 2014-2017 period, the Company shall need to be provided with asset and equipment with the total estimated value of 13,770 millions Vietnam Dong and spend the estimated amount of 42,557 millions Vietnam Dong for salary payment and other related costs and expenses (please refer to Table 2 – Estimated operation expenses of the Company for the 2014-2017 period).

- According to Article 9 of Decree No. 130/2013/ND-CP of the Government dated October 16th, 2013 on production and provision of public-utility products and services, the Company is a State-owned one-member limited liability company with public-welfare tasks that the State shall provide adequate capital for the formation of assets to serve the production and provision of public-utility products and services.

- Also as provided in Article 18 of Decree No. 71/2013/ND-CP of the Government dated November 7th, 2013 on State-owned capital investment in enterprises and

finance management of 100%-State-owned enterprises, “in case that the enterprise is wholly invested by the State budget for the formation of assets in order to establish such enterprise, the charter capital is the total capital invested by the State”;

- The State budget shall financially ensure the activities of the Company for the stage of which the Ben Thanh – Suoi Tien is not operated yet (according to the Official Notice No. 649/TB-VP of HCMC People’s Committee Office dated August 19th, 2014 on conclusions of HCMC Chairman Le Hoang Quan regarding the establishment of the urban railway one-member limited liability company).

II. From 2008

We suggest that the charter capital of the Company is capped at the investment capital for items directly related to the operation and maintenance of Ben Thanh – Suoi Tien urban railway, being **16,788 billion Vietnam Dong**.

Explanation:

1. Regulations on the charter capital of State-owned one-member limited liability companies

Upon establishment, the charter capital of one-member limited liability company shall not be lower VND 100 billions. As for one-member limited liability company for providing public-utility services, its charter capital might be lower than 100 billions Vietnam Dong provided that being approved by the Prime Minister (according to Article 7 of The Decree No. 172/2013/ND-CP of the Government dated November 13, 2013);

State-owned one-member limited liability companies with public-welfare tasks shall be provided with adequate capital by the State for the formation of assets to serve the production and provision of public-utility products and services. State shall provide adequate capital for the formation of assets to serve the production and provision of public-utility products and services (according to Article 9 of Decree No. 130/2013/ND-CP of the Government dated October 16th, 2013);

In case that the enterprise is wholly invested by the State budget for the formation of assets in order to establish such enterprise, the charter capital is the total capital invested by the State (according to Article 18 of Decree No. 71/2013/ND-CP dated July 11th, 2013 of the Government).

2. Application of regulations on charter capital for the Company’s situation

According to the policies on investment capital structure in urban railway projects, the urban railway infrastructures (including underground, elevated structure, rails, etc.) shall be financed by the Government and distributed to HCMC. The items directly related to the operation and maintenance of urban railway (as electromechanical equipment, locomotives – railcars, etc.) shall be subject to the loan from the Government and HCMC shall be responsible for repayment. The Company shall be allowed to use infrastructures without carrying out the amortization. Electromechanical equipment, locomotives – railcars, etc. shall be invested by HCMC to the Company (i.e. initial investment).

From 2018, firstly the Company shall be handed over with Ben Thanh – Suoi Tien Line of which the construction works are completed. Therefore, we suggest that the charter capital of the Company shall be capped at the investment capital for items directly involved in the operation and maintenance of Ben Thanh – Suoi Tien urban railway, being **16,788 billions**

Vietnam Dong (please refer to Table 3: Estimated expenses of initial investment of the Company).

G. ASSESSMENT ON FEASIBILITY OF THE COMPANY'S ESTABLISHMENT

I. Assessment on socio-economic influences and feasibility of the Company's establishment in comparison with the planning and development strategies of economic industries, sectors and regions.

The establishment of the Company complies with the master plan on development of transportation of Ho Chi Minh City by the year of 2020 with a vision after the year of 2020 approved by the Prime Minister under the Decision No. 568/QĐ-TTg dated April 8th, 2013. The public transport (i.e. bus, urban railway, taxi) shall be 20% ÷ 25% [of transport needs] in 2020, 35% ÷ 45% in 2030 and 50% ÷ 60% in the following years. Among them, urban railway transport with mass carriage and high speed shall play the important role and be skeleton of the city public transportation.

II. The market conditions, demands and prospects of public transport services provided by the Company, the operating and developing plan of the Company after 5 years since the operation of Ben Thanh – Suoi Tien line:

– As predicted, the number of passengers using urban railways shall rapidly increased year by year, the urban railway transport services provided by the Company shall also reduce the traffic congestion and enhance socio-economic development in Ho Chi Minh City.

Table 6: The estimated number of passengers in initial 5 years

Year	The estimated number of passengers (thousand persons/day)
2018	156
2019	172
2020	190
2021	314
2022	335

– Operating and developing plan of the Company after 5 years since the operation and exploitation of Ben Thanh – Suoi Tien line shall be:

+ In the first 5 years of operation of No. 1 line, the Company shall take responsibility for operation of the line under supports by of General Consultants (joint consulting group of Japanese and Vietnamese consultants) and the maintenance works and technical guidances shall be implemented by the contractor for Package 3 of No. 1 Line. The Company shall enjoy the technical training and guidances from consultants and contractors to proceed by its own capacity the operation and maintenance of No. 1 line after the first 5 years.

+The revenues of Company (from the ticket sale and non-fare revenues) shall be gradually increased according to the increased number of passengers, try to reach the revenues for fully covering the operating costs and reducing the subsidization by the city (please refer to the estimates on revenues, operating costs and expenses and income of O&M Company for the 5 years period as presented in Table 7).

Table 7

Unit: VND billion

No.	Contents	Amounts				
		2018	2019	2020	2021	2022
1	Revenues	737	806	1,110	1,836	2,145
	a. Revenues from ticket sale	729	798	1,099	1,818	2,124
	b. Revenues from non-fare business	7	8	11	18	21
2	Maintenance and operation costs	385	429	484	541	601
	a. Employees' salary payment	72	75	82	86	90
	b. Utilities cost	194	220	250	282	318
	c. Sanitation cost	6	6	7	8	8
	d. Maintenance cost					
	- Minor repair (per year)	-	-	-	-	-
	- Average overhaul (1 time per four years)	-	-	-	-	-
	- Major overhaul (1 time per eight years)	-	-	-	-	-
	e. Costs for non-fare business (being 60% revenues of non-fare business)	4	5	7	11	13
	f. Other costs	81	91	102	113	125
	g. VAT	29	32	36	41	46
3	Amortization	1,256	1,256	1,256	1,271	1,271
	a. Underground section	-	-	-	-	-
	b. Elevated section	-	-	-	-	-
	c. Electromechanical equipment (including electromechanical equipment of Depots)	1,116	1,116	1,116	1,116	1,116
	d. Depot	-	-	-	-	-
	e. Locomotive	140	140	140	140	140
	f. Information technology	-	-	-	-	-

	g. Additional/renewed parts (the locomotive, electromechanical equipment)	-	-	-	14	14
4	Profit before tax	(905)	(879)	(630)	25	274
5	Corporate income tax	-	-	-	-	-
6	Profit after tax	(905)	(879)	(630)	25	274

Exchange rate: 1USD= VND20,850 as SBV's rate on January 31st, 2013)

(Source: Extrated from "the establishment plan of Company is the first outcome for the Technical Cooperation Project sponsored by Japan International Corporation Associate – JICA, passed by HCMC People's Committee under the Official Letter No. 3566/UBND-DTMT dated July 15th, 2013).

– [The establishment of the Company] Creates the solid base for operation and maintenance of the other urban railways (No. 2 Line, No. 5 Line, etc), and plays the essential role and participate proactively in the city's public transport system.

III. Capability for providing manpower, materials, power supply, technology, and other necessary contiditons for the Company's operation after its establishment

- Local trained employees are qualified for assigned tasks;
- The main power supply for urban railways are provided by the national energy system;
- The Company shall be obliged to the practising certificates for safe activities with regard to railway transport granted by the competent railway authorities (as stipulated in Article 75 of the Law on Railway).

H. EMPLOYEE ATTRACTION AND RECRUIMENT, TRAINING AND RETENTION OF THE COMPANY'S HUMAN RESOURCES

I. From 2014 to 2017

In the 2014 – 2017 period, the Company shall implement the recruitment and training for its employees according to the plans, provided that until the end of 2017, the Company shall have sufficient railway employees as required (qualified the quantity, qualifications and skills, etc. after the training from consultants and contractors), improve its organizational structure and management to be available for operation of Ben Thanh – Suoi Tien line from 2018 and other lines in next steps.

The employees participated in the preparation for, operation and maintenance of urban railways are required to have sufficient qualifications, foreign language skill (for directly working with foreign experts), have a passion for this practice and long-term work with the Company after being trained. Practically, most of employees at the begining shall be transfered from the Management Authority for Urban Raiways (being the authorized investor of urban railway projects and, involved in the technical designs and construction of urban

railway projects from the beginning period of projects and well-informed about urban railway lines).

However, according to the regulations on wages, remunerations and bonuses in State-owned limited liability companies for the period of gaining no revenues or suffering loss (under Clause 4 Article 17 of Circular No. 18/2013/TT-BLDTBXH dated September 9th, 2013 of the Ministry of Labour, War Invalids and Social Affairs), the salary of employees, who are transferred from the Management Authority for Urban Railways to the Company, shall be decreased significantly. There are some examples as follows:

Table 8: *The comparison between salary payment of employees at expert-level in the Company (as specified by laws) and employees at the same level in the Management Authority for Urban Railways*

Salary scale	Working years	Salary structure for State-owned limited liability company under the period of gaining no revenues or suffering loss		Current salary structure applied at the Management Authority for Urban Railways			Differential ratio
		Salary multiplier*	Salary rate	Salary multiplier	Basic salary	Included additional income**	
1	01	2.34	2,691,000	2.34	2,691,000	7,265,700	2.70
2	04	2.65	3,047,500	2.67	3,070,500	8,290,350	2.72
3	07	2.96	3,404,000	3.00	3,450,000	9,315,000	2.74
4	10	3.27	3,760,500	3.33	3,829,500	10,339,650	2.75
5	13	3.58	4,117,000	3.66	4,209,000	11,364,300	2.76
6	16	3.89	4,473,500	3.99	4,588,500	12,388,950	2.77
7	19	4.20	4,830,000	4.32	4,968,000	13,413,600	2.78
8	22	4.51	5,186,500	4.65	5,347,500	14,438,250	2.78
9	25			4.98	5,727,000	15,462,900	

Note: *: Salary multiplier as provided in the Decree No.205/2004/ND-CP dated December 14th, 2015 of the Government

** additional income payment = 1.7 * basic salary

With such differential level, it is really difficult to attract the current employees of the Management Authority for Urban Railways to work for the Company and to recruit more employees for the Company's manpower requirements with the conditions of qualified professional knowledge, good foreign language skills, passion for long-term working the Company after the training etc. The Company shall face difficulties of manpower and management and be challenged to fulfill the assignments of operation and exploitation of urban railway system after construction.

II. From 2018

The Company needs to create the professional environment and reasonable employment benefits to encourage well-trained employees to long-term work with the Company. Simultaneously, the Company needs to prepare the training plan for successive employees and for employees in charge of the operation of other urban railway lines following Ben Thanh – Suoi Tien line.

MANAGEMENT AUTHORITY FOR URBAN RAILWAYS

HO CHI MINH CITY

On behalf of CHAIRMAN

VICE CHAIRMAN

Hoang Nhu Cuong

ANNEX 1(*HCMC Urban railway system*)

	Route	Distance (km)
No. 1 Line	Ben Thanh area – Le Loi Street – City Opera House – Ba Son shipyard – Van Thanh Canal – Van Thanh Park – crossing Dien Bien Phu Street, crossing Saigon river – Ha Noi Highway– Suoi Tien Station	19.7
No.2 Line	Northwest Urban Area (Cu Chi Ward) – National Highway No. 22 – Tay Ninh Bus Station – Truong Chinh Street – (branch to Tham Luong Depot) - Cach Mang Thang Tam Street – Pham Hong Thai Street – Le Lai Street – Ben Thanh area – Thu Thiem area	48.0
No. 3a Line	Ben Thanh area – Pham Ngu Lao Street – Cong Hoa Intersection – Hung Vuong Street – Hong Bang Street – Kinh Duong Vuong Street – Tan Kien Depot – Tan Kien Station	19.8
No. 3b Line	Cong Hoa Intersection – Nguyen Thi Minh Khai Street – Xo Viet Nghe Tinh Street – National Highway No. 13 – Hiep Binh Phuoc area	12.1
No. 4 Line	Thanh Xuan Ward – Ha Huy Giap Street – Nguyen Oanh Street – Nguyen Kiem Street – Phan Dinh Phung Street – Hai Ba Trung Street – Ben Thanh Street – Nguyen Thai Hoc Street – Ton Dan Street – Nguyen Huu Tho Street – Hiep Phuoc Urban Area	36,2
No. 4b Line	Gia Dinh Park Station (No. 4 Line) – Nguyen Thai Son Street – Hong Ha Street – Tan Son Nhat International Airport – Truong Son Street – Hoang Van Thu Park – Lang Cha Ca Station (No. 5 Line)	5.2
No. 5Line	New Can Giuoc Bus Station – National Highway No. 50 – Tung Thien Vuong Street – Phu Dong Thien Vuong Street – Ly Thuong Kiet Street – Hoang Van Thu Street – Phan Dang Luu Street – Bach Dang Street – Dien Bien Phu Street – Sai Gon Bridge	26.0
No. 6 Line	Ba Queo Intersection – Au Co Street – Luy Ban Bich Street – Tan Hoa Dong Street – Phu Lam Roundabout	5.6
No. 1 Tramway	Ba Son Shipyard – Ton Duc Thang Street – Me Linh Square – Vo Van Kiet Highway – Ly Chieu Hoang Street – current Mien Tay Bus Station	12,8
No. 2 Monorail Line	National Highway No. 50 (District 8) – Nguyen Van Linh Highway – Tran Nao Street – Xuan Thuy Street (District 2) – Binh Quoi Urban Area (Thanh Da Area, Binh Thanh District)	.27,2
No. 3 Monorail Line	Crossroads (Phan Van Tri Street – Nguyen Oanh Street) – Phan Van Tri Street – Quang Trung Street – Quang Trung Software City – To Ky Street – Tan Chanh Hiep Station	165

(According to the master plan on development of transportation of HCMC by the year of 2020 with a vision after the year of 2020 approved by the Prime Minister under the Decision No. 568/QĐ-TTg dated April 08th, 2013)

ANNEX 2

* The details of organization and personnel chart of Company from 2018

Categories	Division (Responsibilities)	Number of employees	The required qualifications
Headquarter	Members' Council	3	Assigned by HCMC People's Committee
	Inspectors	3	Assigned by HCMC People's Committee
	Director and Deputy Directors	4	- Director: Bachelor's Degree in transportation, or business administration, or technology etc., plus at least 10-year-experiences of management; - Deputy Director: Bachelor's Degree in transportation, or business administration, or technology etc., plus at least 5-year-experiences of management;
	Administration – Legal Division <i>(responsible for administrative, foreign affairs, law dissemination, office records, maintaining documents of customer's complaints, logistical tasks etc.)</i>	7	- Department Chief: Bachelor's Degree in administrative management, or law, or human resource, or business administration, plus experiences of management - Staff: Bachelor's Degree in administrative management, or law, or human resource, or business administration, and preferable related experiences
	Division of Human Resources <i>(Responsible for recruitment, work assignment and employment training, appraisal of employees, implementation of employment benefits and related matters, maintaining the employees' working records confidential, etc.)</i>	3	- Department Chief: Bachelor's degree in human resource, or administration, or law, plus management experiences. - Staffs: Bachelor's degree in human resource, or administration, or law, and preferable related management experiences.
	Training Center	0	
	Finance – Accounting Division Chief accountant <i>(Responsible for assignments of finance-accounting, forecasts, tax, management of budget, cash and assets, etc.)</i>	7	- Department Chief: Bachelor's degree in finance, or accounting, plus management experiences. - Staffs: Bachelor's degree in finance,

		or accounting, and preferable related experience.
Planning – Investment Division <i>(Responsible for preparation and implementation of short-term and long-term plans, the Company's prospects, purchase plans of equipment, other plans supporting the Company's activities, management of information technology system, etc.)</i>	7	- Department Chief: Bachelor's degree in business administration, or finance, plus management experiences. - Staff: Bachelor's degree in business administration, or finance, or information technology information, and preferable related experiences.
Supplies – Equipment – Services Division <i>(Responsible for supervising the implementation of contracts, out-sourcing activities and office records, management and liquidation of materials and equipment, etc.)</i>	3	- Department Chief: Bachelor's degree in engineering, plus management experiences. - Staff: Degree of college of engineering, and preferable related experiences.
Business - Public Relations Division <i>(Responsible for preparation and expansion of business activities, management of passengers' travelling cards/tickets, business promotion, improvement of service quality and management of non-fare business.</i>	12	- Department Chief: Bachelor's degree in business administration, or marketing, plus management experiences. - Staff: Bachelor's degree in business administration, or marketing, media, foreign language, and preferable related experiences.
Technical Operations Division <i>(Responsible for technology matters of locomotive, railway railcars, rails, construction, railways electrification system, telecommunication... and preparation of maintenance and replacement plans, prevention and troubleshooting of technical problems, management of technical materials, etc....)</i>	29	- Department Chief: Bachelor's degree in engineering, plus managing experiences. - Staff: Bachelor's degree in engineering, or construction and, preferable related experiences.
Safety- Operation Management Division (including the Operation Control Center –with 10 employees) <i>(Responsible for preparation of route schedules, locomotive operation plans for all lines and train schedules, co-operation activities for investigation and settlement of railway breakdowns and accidents, safety maintenance and improvement of the Company's activities, etc.)</i>	24	- Department Chief: Bachelor's degree in railway sector, plus managing experiences. - Dispatcher: Degree of college of railway with the major of train driving or Bachelor's degree in railway sector.
Total	102	

Operation Unit 1 (Line 1)	Director	1	Bachelor's degree in transportation, railway, plus management experiences.
	Train driver <i>(Operation of 17 trains from 5:00 to 23:00 every day)</i>	56	Degree of college of railway with the major of train driving
	Train staffs <i>(Operation of 14 strain stations from 5:00 to 23:00 every day)</i>	156	- Train station chief: Degree of college of railway with the major of train operating or Bachelor's degree in railway sector - Staff: Degree of Vocational School of railway sector, economics or equivalent level.
	Total	213	
Maintenance Unit (Line 1)	Director	1	Bachelor's degree of engineering, plus experience of management
	Rolling Stock Maintenance Staff <i>(in charge of periodic train maintenance and unexpected repairs)</i>	15	- Engineers: Bachelor's degree of electrical engineering - Worker: Vocational School of electrical engineering
	Track, structural, maintenance staff <i>(in charge of the whole line and depots)</i>	13	- Engineers: Bachelor's degree of engineering construction - Worker: Degree of Vocational School of engineering construction
	Equipment, Information - signal maintenance staff <i>(in charge of the whole line and depots)</i>	13	- Engineer: Bachelor's degree of information technology, or electronics engineering - Worker: Degree of Vocational School of information technology or electronics engineering
	Electro-mechanical Maintenance Staff <i>(in charge of the whole line and depots)</i>	22	- Engineer: Bachelor's degree of electrical engineering - Worker: Degree of Vocational School of information technology or electronics engineering.

	AFC system maintenance Staff <i>(for 14 train stations)</i>	15	
	<i>Total</i>	<i>79</i>	
Sum		394	

***Estimates on employees directly involved in operation of Ben Thanh – Suoi Tien line**

1. The working ratios in Vietnam

- In 01 year, the national holiday shall include 10 days; weekend off shall include 52 days; and annual leave shall include 12 days;
- The ratio of actual working days per employee: $(365-52-10-12)/365 = 0.8$;
- The total working days in 01 year: $265-(52+10) = 303$;
- The total of actual working days per employee in 01 year: $365 - (52+10+12) = 291$;
- The ratio of employees covering all working days of 01 year: $303/291 = 1.04$
- The ratio of employees covering all days of 01 year: $365/291 = 1.25$

2. The staffs of Operation Control Center (OCC)

The time schedule for train operation shall be from 5:00am to 1:00am of the next day (totally 20 hours)

The operators responsible for equipment shall also work during the night time (totally 24 hours)

- The number of Commerce, Transportation, Locomotive Operators: there are 03 staffs in one shift (each person shall be in charge of each task); and the total number of actual shifts shall be 20 hours/8 hours/0,8 (actual ratio of working hours for each employee) = 3,125 shifts. Therefore, the required number of staffs shall be 01 employee x 3,125 shift x 3 (working items) = 10 employees (as rounded);
- The number of equipment operators: 1 operator x 24 hours/8 hours/ 0,8 = 4 operators (as rounded);
- The numbers of managers shall be 4 managers for 4 working items;
- There is 1 operator in night shift;
- The total number of operators: $10 + 4 + 4 + 1 = 19$ operators.

3. Train drivers

(1) Train driver:

- The estimates shall be made based on experiences of Osaka Metro and the route designs of Ben Thanh – Suoi Tien line with the traveling period of whole line of 13,360 minutes;
- The working time per day in Osaka Metro is 450 minutes (7.5 hours) while in Vietnam, it is 480 minutes (8 hours). Accordingly the average actual working hours of a train driver in Osaka Metro is 335 minutes; therefore; in Vietnam, it is $335 + 30 = 365$ minutes.
- Additionally, the train accumulation tasks at night shall additionally require 2 night shifts then the total shifts shall be 38.6.
- The ratio of backup employees shall be 0.03 (based on Osaka Metro's experiences); thus, the total of backup working shifts shall be $38.6 \times 0.03 = 1.158$;
- The total number of necessary train drivers: $(38.6 + 1.158)/0.8 = 50$ drivers (as rounded);

(2) The train driver manager:

- Responsibility: to manage drivers and conduct periodical training to the drivers;
- The number of drivers: $(2 \text{ drivers} \times 2 \text{ shifts}) / 0.8 = 5$ (as rounded);
- Moreover, 01 administration officer is needed.
- The total number of train driver managers shall be 6,

4. The train employees

- The train station chief: 9 employees; including 5 train station chiefs who manage 5 stations with switch of direction/railroad, and 4 other chiefs managing 9 remaining stations (averagely 1 train station chief / 2 – 3 stations)
- The number of employees in day and night shift, including national holidays: $2/0.8 = 3$ employees (as rounded);
- The number of employees = $(A+B) \times C \times 3$

No.	Train Station	The ordinal number of ticket gate	The number of ticket controllers	The number of ticket sellers	The number of employees
1	Ben Thanh*	2	1	2	18
2	City Opera House	2	1	1	12
3	Ba Son	2	1	1	12
4	Van Thanh	1	1	1	6
5	Tan Cang*	1	1	2	9
6	Thao Dien	1	1	2	9
7	An Phu*	1	1	2	6
8	Rach Chiec	1	1	3	12
9	Phuoc Long	1	1	2	9
10	Binh Thai*	1	1	2	9
11	Thu Duc	1	1	2	9
12	High-tech Park	1	1	2	9
13	HCMC National University	1	1	2	9
14	Suoi Tien Bus Station*	2	1	2	18
Total					147

Note: * switch of direction/railroad

*** The references of employees in operation and maintenance of urban railways in some neighbouring countries:**

As showed in the below table:

Country	Company	Railway Line	The ordinal number of train stations	Distance	The number of employees
Singapore	SBS Transit	North East	16	20	1,270 employees for 45.3km of distance with 51 train stations
		Downtown*	6	4.3	
		Sengkang LRT	14	10.7	
		Punggol LRT	15	10.3	
Thailand	Bangkok Metro Public Company Limited	Blue	18	20	1,089

Notice:

- As for Downtown line of 42-km-distance and totally 34 train stations; at the present time only the construction works of 4.3 km with 6 trains are already finished and operated.

- Source: Finance report of 2013 of SBS Transit Company, at page No. 22; Financial report of 2013 of Bangkok Metro Public Company Limited at pages No. 34 and 85;

(http://www.sbstransit.com.sg/download/SBST_AnnualReport13_a.pdf);

(<http://bmcl.listedcompany.com/misc/ar/20140328-bmcl-ar2013-en.pdf>);

ANNEX 3 (*Estimates of operation expenses for the period of 2014-2017*)

ANNEX 4 (*Monthly Wage Estimates of the Company for the 2014-2017 period*)

I. Wage Regulations of State-owned one-member limited liability companies

The regulations on wages, remunerations, bonuses of State-owned one-member limited liability companies shall be provided in the Decrees No. 50/2013/ND-CP and 51/2013/ND-CP of the Government dated May 14th, 2013; the Circulars No. 18/2013/TT-BLDTBXH and No. 19/2013/TT-BLDTBXH of Ministry of Labour, War Invalids and Social Affairs dated September 9th, 2013, particularly:

- The wage fund of employees is provided in Article 8 of the Circular No. 18/2013/TT-BLDTBXH and the wage fund for management officials is provided in Articles 9 and 10 of the Circular No. 19/2013/TT-BLDTBXH;

- According to Clause 4 Article 17 of the Circular No. 18/2013/TT-BLDTBXH, in case that the company has no profits or suffers from loss and during the period that the wage scale and schedule is not made according to Article 93 of the Labour Code and the Decree No. 49/2013/ND-CP of the Government dated May 14th, 2013, the wage rates on the average labour contracts (in order to define the wage fund) shall be defined based on the (average) salary multiplier (according to the Decree No. 205/2004/ND-CP of the Government dated February 14th, 2004) multiplied with the minimum wages provided by the Government at the date of December 31st of every year and multiplied with consumer price index issued by the General Statistics Office on December 31st of every year in comparison with the point of April 30th, 2013. As for the employees who have the salary rates (after being multiplied with the consumer price index) are lower than regional minimum wages from time to time provided by the Government for the area of the company, the wage rates of employees shall be regional minimum wages.

II. Application of the above wage schedule for the case of the Company

From 2014-2017, the Company shall set up the structure and be prepared for the operation and maintenance of Ben Thanh – Suoi Tien urban railway lines on 2018; act as the contact person and became the partner for the programmes and projects related to of urban railway management and operation. During this period, the Company shall gain no profits. Therefore, the wage schedule shall be conducted according to Clause 4 Article 17 of the Circular No. 18/2013/TT-BLDTBXH as mentioned above.

Table 8: Salary rates of employees in proportion to the ratio and a number of working years

Salary grade	From the working year of	Salary schedule applied to one-member limited liability companies gaining profits or suffering loss	
		Multiplier*	Salary rate
1	1	2.34	2,691,000
2	4	2.65	3,047,500
3	7	2.96	3,404,000
4	10	3.27	3,760,500
5	13	3.58	4,117,000
6	16	3.89	4,473,500
7	19	4.20	4,830,000
8	22	4.51	5,186,500

(*): Salary multiplier is based on the Decree No. 205/2004/ND-CP of the Government dated December 14th, 2004;

III. Estimated monthly wage fund of the Company from 2014-2017

(to be presented in the following Table)

ANNEX 5 (*Extracts form the related terms on the establishment of the Company in the Meeting Minutes signed on November 26th, 2006 between JBIC and the Government of Socialist Republic of Vietnam*)

ANNEX 6 (*Official Notice No. 317/TB-VPCP of the Government Office dated August 8th, 2014 on conclusions of Deputy Prime Minister Hoang Trung Hai at a cabinet meeting on the implementation of the urban railway project of Ben Thanh – Suoi Tien Line and being reported on the urban railway project of Ho Chi Minh City*)

PRIME MINISTER

Ref.: No. 737 / TTg- DMDN

Re: Ho Chi Minh City Urban Railway No.1
One-member Limited Liability Company

SOCIALIST REPUBLIC OF VIETNAM

Independence – Freedom – Happiness

Ha Noi, 26th May, 2015

To: People's Committee of Ho Chi Minh City

Reviewing the proposal from People's Committee of Ho Chi Minh City (Statement No. 2160/TTr-UBND dated 21st April, 2015) regarding establishment of Ho Chi Minh City Urban Railway No.1 One-member Limited Liability Company, the Prime Minister comments as follows:

Agree the establishment of Ho Chi Minh City Urban Railway No.1 One-member Limited Liability Company according to proposal from People's Committee of Ho Chi Minh City in the above Statement. People's Committee of Ho Chi Minh City makes the decision of this Company establishment pursuant to applicable regulation./.

Recipients:

- As above;
- Prime Minister, Deputy Prime Ministers;
- Ministries: MOF, MPI, MOLISA, MOHA, MOT;
- Office of the Government: Minister-Chairman, Vice Chairman, Assistant to Prime Minister, Departments: Department of Economic Sectors, Department of General Economics, Department of Administrative Archives;
- For record: Record Office, Enterprise Innovation (29)

**ON BEHALF OF PRIME MINISTER
DEPUTY PRIME MINISTER**

(Signed and sealed)
Vu Van Ninh

**PEOPLE'S COMMITTEE
OF HO CHI MINH CITY**

Ref.: No. 6339 /QD-UBND

SOCIALIST REPUBLIC OF VIETNAM

Independence – Freedom– Happiness

Ho Chi Minh City, December 1st, 2015

DECISION

On the establishment of Ho Chi Minh City Urban Railways No.1 Company Limited

CHAIRMAN OF HO CHI MINH CITY PEOPLE'S COMMITTEE

Pursuant to Law on Organization of People's Councils and People's Committees dated November 26th, 2003;

Pursuant to Law on Railway No. 35/2005/QH11 dated June 27th, 2005;

Pursuant to Law on Enterprises No. 68/2014/QH13 dated November 26th, 2014;

Pursuant to Law on Management and utilization of state capital invested in the enterprise's manufacturing and business activities dated November 26th, 2014;

Pursuant to Decree No. 97/2015/ND-CP of the Government dated October 19th, 2015 on management of title and position holders at 100%-State-owned one-member limited liability companies;

Pursuant to Decree No. 51/2013/ND-CP of the Government dated May 14th, 2013 providing wages, remunerations, bonuses for members of the Member's Council, company Chairman, company Inspector(s), General Director or Director, Vice General Director or Vice Director and Chief Accountant of State-owned one-member limited liability companies;

Pursuant to Decree No. 61/2013/ND-CP of the Government dated June 25th, 2013 promulgating the regulation on financial supervision, performance assessment and publication of financial information applicable to state-owned enterprises and state capital enterprises;

Pursuant to Decree No. 91/2015/ND-CP of the Government dated October 13th, 2015 on State capital investment in enterprises, the utilization and management of capital and properties in enterprises;

Pursuant to Decree No. 172/2013/ND-CP of the Government dated November 13th, 2013 on establishment, reorganization and dissolution of State-owned one-member limited liability companies and its subsidiaries being one-member limited liability companies;

Pursuant to Decision No. 568/QD-TTg of the Prime Minister dated April 8th, 2013 approving the master plan on development of transportation of Ho Chi Minh City by the year of 2020 with a vision after the year of 2020;

Pursuant to Official Letter No. 737/TTg-DMDN of Prime Minister dated May 26th, 2015 on the establishment of Ho Chi Minh City Urban Railways No.1 Company Limited;

Considering the proposal from Management Authority for Urban Railways on Statement No. 3120/TTr-BQLDSĐT dated September 21st, 2015 and the comments from Department of Home Affairs on Statement No. 4354/TTr-SNV dated November 20th, 2015,

DECIDES:

Article 1: Undertake to establish Ho Chi Minh City Urban Railways No.1 Company Limited;

1. Company name:

Full name: **CÔNG TY TRÁCH NHIỆM HỮU HẠN MỘT THÀNH VIÊN ĐƯỜNG SẮT ĐÔ THỊ SỐ 1 THÀNH PHỐ HỒ CHÍ MINH**

Transaction name: Công ty trách nhiệm hữu hạn một thành viên Đường sắt Đô thị số 1 Thành phố Hồ Chí Minh;

International transaction name: Ho Chi Minh City Urban Railways No.1 Company Limited;

Abbreviated name: **HURC1**;

2. Head office: 29 Le Quy Don, Ward 7, District 3, Ho Chi Minh City (Office of Ho Chi Minh City Management Authority for Urban Railways);

3. Type: 100%-State-owned one-member limited liability company;

4. Operation time: 99 years from the date of issue of the Decision on Company Establishment;

5. The legal representative of the Company is Director of the Company;

6. Owner: Ho Chi Minh City People's Committee;

7. Legal form and legal Statue:

- The Ho Chi Minh City Urban Railways No.1 Company Limited ("the Company") is 100%-State-owned company which shall operate in accordance with regulations, Law on Enterprise and Charter on organization and operation of the Company;

- The Company has the statue of a legal entity, with its own seal, logo and is allowed to open account of Vietnam Dong and foreign currency at State Treasury, Banks at home and abroad in accordance with the relevant law;

- The Company has its own capital and properties and take responsibility for the debts and other financial commitments within the capital managed and used by it;

- The Company shall have the exclusive right to own, use and dispose of its Company name, trademark and logo as prescribed by law.

8. The (initial) charter capital of Ho Chi Minh City Urban Railways No.1 Company Limited at the time of establishment is: VND 14.000.000.000 (In words: Fourteen billion Vietnam Dong).

9. Ho Chi Minh City Urban Railways No.1 Company Limited is subject to the management of competence state agencies as prescribed by law.

Article 2: The function, responsibilities and scope of business of Ho Chi Minh City Urban Railways No.1 Company Limited

1. Function:

- To be the representative of the state capital owner and take responsibility before Ho Chi Minh City People's Committee on the preservation and development of the allocated capital;
- To conduct manufacturing and business activities for public passenger transport by urban railway system and provide other related services within the scope of business approved.

2. Responsibilities

- To duly conduct the preparation of necessary resources for urban railway operation and maintenance after taking the handover;
- To manage urban railway operation and exploitation;
- To finalize the Charter on organization and operation of the Company and submit it to Ho Chi Minh City People's Committee for approval;
- To elaborate the Financial Regulations of the Company and submit it to Ho Chi Minh City People's Committee for approval;
- To study and draw the regulations, regime, policies and plan of business management, etc. for uniform application in management and operation aimed to gradually gain the stability and development for the Company;
- To work out the short-term, long-term and annual plans on public passenger transport business; on investment, management and operation of passenger transport system and vehicle equipment. To organize the utilization of labour force, wage and assignment. To repair specialized rail car serving for urban railways; to conduct management, operation, maintenance and repair of urban railway infrastructure, vehicles, facilities and equipment;
- To inspect and supervise the utilization of capital and property; the policies, the execution of manufacturing and business activities by operation unit as prescribed by the law, the Charter on organization and operation of the member units (if any);
- To organize the scientific research and apply advanced science and technology; to conduct personnel training and retraining in conformity with the industry demand. To enter into joint venture with domestic and foreign organizations and individuals aimed to develop manufacturing and business activities; simultaneously study and submit the policies on public passenger transport to Ho Chi Minh City People's Committee for approval;
- To preserve and develop the capital source of the Company contributed by the Owner and its self-mobilized capital sources; to take responsibility of paying the debts and the property obligations within the Charter capital under its management;
- To conduct its business in accordance with the registration; to take responsibility for quality of its products and services. To renew and modernize the technology and mode of

management in order to enhance the effectiveness and competitiveness of the Company. To ensure the realization of the rights and interests toward the labourers in accordance with the provisions of the Labour Code, and ensure their participation in the management of the Company.

- To carry out the regulations of the State on national defence and security, social order and safety, natural resources and environmental protection;

- To carry out the regime on accountancy, audit and on reporting its financial and statistical operation as prescribed by the law and at the requirement of the Owner. To submit the control of Owner or the authorized agencies of the Owner, to abide the regulations concerning the inspection by the financial agency and competent state agencies as prescribed by law. To use minimum 70% of the capital to invest in activities in the main area of business of the Company;

- To make effective use of, preserve and develop the State capital; to register, declare and pay tax as prescribed by law; to perform the obligations to the State and fulfil financial others as prescribed by law. To manage and use effectively the various business capital sources of the Company, including the capital contributed to other enterprises (if any); to manage and use effectively natural resources, land and other allocated resources assigned or lent by the Owner. To carry out correctly the regime on the management of capital, property, the various funds, book-keeping, cost accounting, audit regime as prescribed by law; to take responsibility for the accuracy of its financial operations.

3. Scope of business:

- Urban railway passenger transport business. Railway infrastructure business. Cargo loading and unloading at railway stations or storing yards. Goods warehousing, preservation at railway stations. Manufacture, assembly, transformation, rehabilitation of railway traffic means. Provision of railway transport agency services. Cargo forwarding service provision. Repair of railway traffic equipment and means. Repair and maintenance of transport vehicles. Management, operation, maintenance and repair of urban railway infrastructures. Commercial advertising service. Parking lot lease. Lease of premises for installation of telecommunication cables.

- The company shall only be allowed to conduct its business after granting Enterprise registration certificate and fulfilling all the eligible requirements for business as prescribed by law.

Article 3: The organizational and operating structure of Ho Chi Minh City Urban Railways No.1 Company Limited

1. The organizational structure includes:

** Preparation phase for urban railway operation:*

- Director;
- Deputy Directors;
- Inspectors;
- Chief Accountant;

- The specialized divisions belonged to the Company: Planning Division; Technical Operation Division; Administration and Organization Division; Finance and Accounting Divisions.

* *Phase of urban railway operation:*

- Member's Council;
- Director;
- Deputy Directors;
- Inspectors;
- Chief Accountant.
- The specialized divisions belonged to the Company: Planning and Investment Division; Supplies and Equipment and Services Division; Technical Operation Division; Business and Public Relations Division; Safety and Operation Management Division; Administration and Legal Division; Human Resources Division; Finance and Accounting Divisions;

2. The member urban railway operation unit and maintenance unit of the Company:

- They are established in stages in line with the schedule of construction and putting in service for urban railway lines.
- These member units of the Company have their own seals and are dependent-accounting to Ho Chi Minh City Urban Railways No.1 Company Limited.
- The company has power to take decision on the establishment of divisions and member units as prescribed by the law after the approval from the Owner during the period of operation, aimed to expand the scope of business operation and in the basic of practical conditions;
- The appointment and dismissal of members of the managing board of Ho Chi Minh City Urban Railways No.1 Company Limited is decided in accordance with the rights as provided for by the Charter of organization and operation of the Company and the current regulations of the State and Ho Chi Minh City on personnel.

Article 4: Implementation provisions

1. Director of Department of Home Affairs is assigned in coordination with Chairman of Management Authority for Urban Railways and relevant Departments to propose that Ho Chi Minh City People's Committee shall authorize to Management Authority for Urban Railways for the implementation of rights, obligations and responsibility of the Owner to the Company, conduct the hand-over activities of personnel and relevant documents etc., to Ho Chi Minh City Urban Railways No.1 Company Limited for the execution as prescribed by law.

2. Director of Department of Planning and Investment and Chairman of Ho Chi Minh City Enterprise Renovation and Management Board is assigned to provide guidelines to the Company for implementation of enterprise registration procedure, drawing up Charter and finalizing the registration of scope of business.

3. Director of Department of Finance is assigned:

- To coordinate with Directors of Department of Transport, Department of Planning and Investment, Department of Construction, Department of Labour, War Invalids and Social Affairs, Department of Natural Resources and Environment, Chairman of Management Authority for Urban Railways and the Heads of relevant Departments for giving handover: capital, properties and lands, etc., to Ho Chi Minh City Urban Railways No.1 Company Limited which is responsible for the execution as prescribed by law.

- To coordinate with Departments, the Company to organize accounting apparatus as suit operation model in each specific phase.

- To be subject to support Ho Chi Minh City People's Committee with the tasks including supervising financial activities and evaluating efficiency of business operations, conducting the elaboration of the collective reports concerning the results of supervision in financial matters of Ho Chi Minh City Urban Railways No.1 Company Limited;

4. Director of Department of Transport is assigned to coordinate with the Chairman of Management Authority for Urban Railways:

- To work out and submit to Ho Chi Minh City People's Committee for approval, to issue the Regulations on organization, management and exploitation of passenger transport by urban railways in Ho Chi Minh City (including between Department of Transport, Management Authority for Urban Railways and the Company) in advance of the first urban railways line put in service;

- To provide the guidelines and inspection in the execution of measures for realization of transport safety within the scope of its functions;

- To appraise the regulations of State management on urban railways; safety and qualification in operation of urban railway system; policies on pricing applied for urban railway transport;

5. Chairman of Management Authority for Urban Railways is assigned:

- To work out and submit to Ho Chi Minh City People's Committee to issue the regulations on qualification and safety in provision, participation and utilization of urban railway transport service; regulations on maintenance for management and operation of urban railway construction; policies and promotion plans of utilizing the urban railways, of investment in urban railways; policies on pricing applied for urban railway transport; policies on mobilizing income for urban railway operation; policies on the management, utilization and promotion for the development of its human resource, etc.

- To prepare the favourable conditions and plan for handover after finalizing the urban railway construction projects to Ho Chi Minh City Urban Railways No.1 Company Limited for operation and exploitation;

- To manage counsellors and contractors belonged in urban railway construction projects in support of Ho Chi Minh City Urban Railways No.1 Company Limited to perform the task of urban railway operation and maintenance in certain time.

Article 5: This Decision takes effect as from the date of signing.

Article 6: Chief of Office of Ho Chi Minh City People's Committee, Director of the Department of Home Affairs, Director of Department of Finance, Director of Department of

Transport, Director of Department of Planning and Investment, Director of Department of Natural Resources and Environment, Director of Department of Construction, Director of Department of Architecture and Planning, Director of Department of Labor, War invalids and Social Affairs; Chairman of Enterprise Renovation and Management Board; Chairman of Management Authority for Urban Railways; Heads of relevant Departments, Chairman of Member's Council (or Chairman of the Company), Director of Ho Chi Minh City Urban Railways No.1 Company Limited are responsible for implementation of this Decision/.

Recipients:

- As Article 6;
- Prime Minister;
- Office of Government;
- The Central Enterprise Renovation and Development Board;
- MHA, MOF;
- MPI;
- MOT;
- MOLISA;
- Party Standing Board;
- Council Standing Board;
- Committee Standing Board: Chairman, Vice Chairpersons;
- Municipal Union;
- HCMC Police (PC.64);
- Committee Office: Deputy Chiefs of Office;
- Specialized Divisions;
- For record: Record Office, (VX/ Nh) T. 38

CHAIRMAN

(Signed and sealed)

Le Hoang Quan

MINUTES OF MEETING	
Date: 17 th June, 2015 Time: 3:30 PM – 05:00 PM	Location: Meeting Room 1 - Management Authority for Urban Railways (29 Le Quy Don Street, Ward 7, District 3).
Topic: Report on SAPI progress with Chairman	
Major Attendees:	
MAUR	Mr. Bui Xuan Cuong – Chairman of MAUR Mr. Hoang Nhu Cuong – Vice Chairman of MAUR Ms. Vu Minh Huyen – Chief of Training and Organizing Division PUC members (9) <ul style="list-style-type: none"> • Tran Dang Thanh • Nguyen Thi Huong Tra • Nguyen Thi Hoang Hai • Phan Hong Quan • Vu Minh Duc • Bui Dai Thang (Specialist of Project Management Unit 1) • Nguyen Trung Phong (Specialist of Project Management Unit 2) • Dao Nhat Tan (Specialist of Project Management Unit 5) • Bui Anh Huan (Specialist of Office)
SAPI	Mr. Tadashi Nakano – Japanese Expert Ms. Huynh Thi Lan Chi – Japanese Interpreter Ms. Tran Nguyen Kim Ngan – English Interpreter Ms. Anh Hong Ngan – Local consultant – Management and Legal Affair

Content	I. Short report from Mr. Nakano (attachment) II. Comments from Chairman including 5 main points:
O&M Company registration	Chairman informed that MAUR will submit the proposal of O&M Company registration to Ho Chi Minh City People's Committee before 15th July, 2015. Thus, the expectation that this registration will be finished before 2nd JCC Meeting is difficult to gain.
PUC members increase	Chairman advised that the route to (1) increase numbers of PUC staffs to 19 and (2) transform current part-time staffs into full-time ones shall depend on the progress of line No. 1 construction & exploitation, not the progress of Company establishment. It is difficult for advanced staff-increase for whole line opening planned in 2020. If we received the support from JICA to encourage contractors speed up construction for partial opening in 2018 and then above actions will be implemented accordingly. <ul style="list-style-type: none"> • Mr. Cuong – Vice chairman informed there are not many assignments required a lot of PUC staffs in SAPI period; therefore, the number of staffs shall increase once next TC starts with many tasks increased.
Driver license system (Training & Certificate of train drivers)	Chairman commented that the issues including Certificate and Training period (400 hours for each theoretical training & practical training) shall be conducted on the basis of contract with NJPT and Official letter from Vietnam Railway Authority. <ul style="list-style-type: none"> • Mr. Cuong – Vice chairman expressed because of no previous precedence which the training course completion certificate is granted by foreign authority and according to the Official Letter from VNRA on train driver training period and driver certificate issue for Ho Chi Minh City Urban Railway Line 1, the training shall be implemented by contractor and investor and then these trainee with training course completion certificate granted by these contractor and investor will join in examination process regulated by Ministry of Transport to be a train driver. • Mr. Cuong – Vice chairman also explained in details about contract between NJPT and MAUR which includes (1) the implementation of train driver training which is necessary for

	<p>driving urban railway, the authority in charge of training which will be Osaka Metro. However, train driver license is not mentioned in this contract and the issues including Certificate and Training period (400 hours for each theoretical training & practical training) needed to consult with NVRA.</p> <ul style="list-style-type: none"> • Mr. Thanh also shared that GC takes responsibility for train driver training and contractor takes responsibility for maintenance staff training. For train drivers, we will recruit the students from RVC and then they will join in the above practical training.
Application of next TC	<p>Chairman shared that MAUR will coordinate with Department of Planning and Investment to speed up the application of next TC.</p> <ul style="list-style-type: none"> • Mr. Cuong – Vice Chairman further concerns that there is no cost estimate available now from Japan side by cause of non-refundable aid but it puts MAUR in the difficult situation because MAUR have to respond to DPI regarding this cost estimate. He also expressed high appreciation if MAUR could receive the next TC from JICA and in worst case of not, MAUR will try their best to implement O&M preparation. • Mr. Thanh further informed that based on the application form for next TC to Japan side has already conducted, we could fill in most parts of our form except for the cost estimate from Japan side.
On Job Training	<p>Chairman expressed high appreciation of continuous SAPI's support in coordination with JICA and Osaka Metro for realization of OJT.</p>

PEOPLE'S COMMITTEE OF
HO CHI MINH CITY

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

Code:/BB-UBĐPC

Ho Chi Minh City, May 7th, 2015

MINUTES OF MEETING

Time: 8:30 – 9:45, May 7th, 2015

Place: Meeting Room 1 of Management Authority for Urban Railways – 29 Le Quy Don, Ward 7, District 3, Ho Chi Minh City, Vietnam.

Participants:

❖ *Leaders of Management Authority for Urban Railways (MAUR):*

- Mr. Hoang Nhu Cuong, Vice Chairman of Management Authority for Urban Railways (MAUR) – chairing the meeting;
- Ms. Vu Minh Huyen, Head of Training and Organizing Division, MAUR;

❖ *SAPI experts:*

- Mr. Tadashi Nakano;

❖ *Preparation Unit (PUC):*

- Mr. Tran Dang Thanh;
- Ms. Nguyen Thi Huong Tra;
- Mr. Vu Minh Duc;
- Mr. Phan Hong Quan;
- Ms. Nguyen Thi Hoang Hai.

❖ *New part time staffs:*

- Mr. Bui Dai Thang - Specialist of Project Management Unit 1;
- Mr. Nguyen Trung Phong – Specialist of Project Management Unit 2;
- Mr. Dao Nhat Tan – Specialist of Project Management Unit 5;
- Mr. Bui Anh Huan – Specialist of Office;

❖ *Other participants:*

- Ms. Huynh Thi Lan Chi, Translator;
- Ms. Tran Nguyen Kim Ngan, Translator.

Meeting content:

1. Introduction of PUC supplementary members

➤ *Tadashi Nakano:*

Remind that we are as a standby when the O&M document has already sent to Prime Minister for authority to examine and approve the Proposal and asked the sharing of this revised version of scheme.

➤ *Mr. Hoang Nhu Cuong:*

Agreed to share the revised Vietnamese version; then, he explains the purpose of meeting today, as the agreement of First Join Coordination Committee (JCC), regarding increasing the number of PUC members up to at least 9 persons by May 2015, MAUR would like to introduce new four part-time employees including

(Each new member of PUC introduces themselves.)

(1) Mr. Bui Dai Thang - Specialist of Project Management Unit 1, and also Person in Charge of Contractor issues;

(2) Mr. Nguyen Trung Phong – Specialist of Project Management Unit 2; and also Person in charge of Operation and Maintenance;

(3) Dao Nhat Tan – Specialist of Project Management Unit 5;

(4) Mr. Bui Anh Huan – Specialist of Office and had just finished the Master degree

2. Confirmation, dissemination of viewpoint from SAPI study

Team based on JICA HQ's suggestion

➤ *Tadashi Nakano:*

Firstly, acknowledge the new supplementary members of PUC and raise 4 concerns regarding this change of human resources including (1) their background/profiles; (2) the reason why MAUR need this employee increase; (3) when these supplementary PUC members will become the permanent ones in PUC only and (4) the timeline to achieve the target of 19 staffs in PUC. Moreover, the reason of these confirmations especially for employees increase is that pursuant on our aim is to establish the O&M Company during SAPI

implementation period, there are a lot of documents and procedures with related departments needed to be accomplished which requires more experienced & qualified staffs in business and technology aspect. Also in cases of PUC in Ha Noi, there are current 15 staffs and the difficulties still existed for accomplishment of O&M Company. By the way, absolutely SAPI will transmit all the update regarding new PUC employees to JICA headquarter including the profiles as well as part time position.

Secondly, regarding OJT in SAPI period, JICA headquarter suggests that the OJT should prioritize for new PUC staffs because the current members has already been in study trip of Japan in January 2012. However, the effort from the current PUC staffs is also recorded then the decision of schedule and participants for OJT needs to be discussed further between MAUR and JICA headquarter. Moreover, JIC has not yet received the order for OJT despite that the requirement from JICA regarding document translation for OJT has already been proceeded.

3. Other discussion

➤ Mr. Hoang Nhu Cuong:

Concerns about the relationship between Osaka Metro and JIC to the O&M company establishment?

➤ Tadashi Nakano:

Osaka Metro support for HCM railways via JIC until the Metro line 1 will be opened.

Other discussion

➤ Mr. Hoang Nhu Cuong:

Concerns about the difference between the support for O&M company establishment in Ho Chi Minh City and Ha Noi?

➤ Tadashi Nakano:

As it starts, the O&M company establishment in Ha Noi is supported by Tokyo Metro and Osaka Metro will assist this activity in Ho Chi Minh City via JIC.

➤ Mr. Hoang Nhu Cuong:

Recommends that the model for the support of the founding of O&M Company should be same as in Ha Noi which means the JICA is not involved. Then, Osaka Metro will support and invest directly for this O&M Company as well as next TC2. Nevertheless, MAUR will ask JR East support for the founding of O&M Company.

4. The MAUR's comment on JICA HQ's suggestion

➤ Mr. Hoang Nhu Cuong:

Regarding the concerns from SAPI of PUC employee increase; firstly, for the requirement of qualified and full-time staffs for PUC, there are no available employees holding equivalent qualification to railways and they could not be permanent staffs of PUC because according to actual situation, it will be the misuse of human resources once there is no many tasks available, secondly MAUR has already tried to arrange employees who could meet the requirement as young, high English demand, enough professional qualification (Master) aimed to acquire knowledge from JAPAN experts. Thirdly, these additional PUC members are the skeleton staffs in each departments/projects; therefore, if they become the full time employees in PUC, the lack of resources in MAUR will happen. However, once O&M Company is in operation officially, there will be various departments and adequate staffs accordingly. Finally, if all these part-time PUC staffs became full-time ones, the total budget of salaries will be increased, and correspondingly, the wage for each member will be 200\$ that is not equivalent to the basic living standard.

5. Discussion on OJT and others

➤ Mr. Hoang Nhu Cuong:

MAUR also propose the OJT for all 9 PUC staffs and in case JICA does not continue to support for TC2, MAUR will find another sponsor.

➤ Tadashi Nakano:

As SAPI's evaluation, the appropriate number of fellows for OJT should be 6 persons in SAPI period. Moreover, this number should also depend on

many factors such as (1) the time to start of OJT and (2) budget sponsored for this activity...

➤ *Mr. Hoang Nhu Cuong:*

When do we start for OJT?

➤ *Tadashi Nakano:*

JICA proposed that it should start from September, 2015.

➤ *Mr. Hoang Nhu Cuong:*

September and October is suitable for MAUR and it could be one trip at that time or two trips including (1) in Sep & Oct, 2015 and (2) Mar 2016 for all 9 persons. The reason for requirement of 9 staffs in OJT is that the 5 current PUC full-time staffs only took 3 – 4 days in study trip of 2012 which there is no knowledge could be gained.

➤ *Tadashi Nakano:*

Totally understand Mr. Cuong's idea and asks more time for report and discussion of 2 points related to OJT including (1) the budget and (2) the capability of receiving fellows in OJT based on many factors.

➤ *Mr. Hoang Nhu Cuong:*

He suggests that 5 persons per study trip is not much.

➤ *Tadashi Nakano:*

JIC would like to gain the highest effectiveness which 2 persons/ training is the best and also to maintain the daily operation at Osaka Metro is also essential during OJT.

➤ *Mr. Hoang Nhu Cuong:*

Suggests 3 times of OJT (3 persons per OJT) and ask the support from Tokyo Metro as well as Hiroshima.

➤ *Tadashi Nakano:*

Understand and might ask the coordination from MAUR regarding submission of necessary documents related to OJT.

➤ *Mr. Hoang Nhu Cuong:*

Agree and assign Mr. Thank send profiles of new part-time PUC members to SAPI and for the timeline of achieving the target 19 employees in PUC, this number of staffs will be available after establishing of O&M Company and accomplishing TC2 which has already discussed and reached the final decision. Moreover, he also recommends the next JCC meeting should be delayed after the founding of O&M Company.

➤ *Tadashi Nakano:*

Acknowledge this proposal which should be held until July as discussion with Mr. Nagai, but might be prior to July 26th.

➤ *Mr. Hoang Nhu Cuong:*

Also acknowledge and asks the support from SAPI regarding the application form of TC2.

➤ *Tadashi Nakano:*

Currently, this requirement is being proceeded by JIC headquarter in Japan and will revert once it is available.

➤ *Mr. Hoang Nhu Cuong:*

What is the relationship between JR East and JIC?

➤ *Tadashi Nakano:*

JR East is shareholder in JIC, which own 53% stock in proportion. And JIC experts to Ho Chi Minh City are required of dispatch from JR East under sponsor from JICA. And if MAUR would like to change another sponsor, it will be difficult with complicated procedure as well as acceptable reason.

➤ *Mr. Hoang Nhu Cuong:*

Propose that JR East could support for O&M Company without JICA sponsor and accordingly, JR East could continue the commercial activities after the urban railways are available. And regarding of sponsor changing, it is as a joke. However, MAUR request to enhance the training/ education in TC2 which MAUR is lack of.

➤ *Tadashi Nakano:*

Understand and coordinate with MAUR accordingly.

The meeting ended at 09:45 on the same day/.

HITACHI
Inspire the Next



Ho Chi Minh City Urban Railway Line 1 Project Office

Hitachi, Ltd.,

Ref. No. UMRT L1-CP3-GL-PMP-LTR-0485 -A-R0

Our Ref. No. HTC-201410-1185

Date: 15 October, 2014

NJPT Site Office

Group 12, Tan Lap Block – Dong Hoa Ward – Di An District,
Binh Duong Province, Vietnam

ATTN: Mr. Yoshihiko Sato
Project Manager (Rail Systems),



Re: List of Items to be interfaced between CP3 and O&M Company

Dear Sirs,

With regard to the above subject, during PMU1/NJPT/Hitachi Bi-weekly Meeting held on 18 September 2014, Hitachi explained that there are items which HTC needs to discuss with O&M Company for our design work, but unable to discuss at this moment because O&M Company has not established yet.

During the meeting, PMU1 instructed Hitachi to list up the items need to be discussed with O&M Company, so that PMU1/NJPT can discuss with Hitachi on behalf of O&M Company or assign a person in charge, until O&M Company will be established.

In this line, we are pleased to submit the List of Items to be interfaced between CP3 and O&M Company as per attached, and would like to start discussions with PMU1/NJPT on these items, so that we can incorporate necessary ideas of operation and maintenance into our design work. Please also be noted that the list include the discussion items which we need to discuss, and we may add additional items as the design work progress and such additional items become necessary to be discussed.

We highly appreciate your kind cooperation on this issue.





Sincerely yours,

Toru Komaki
Project Manager
Hitachi, Ltd.,
Ho Chi Minh City Urban Railway Line 1 Project Office

Attachments:

List of Items to be interfaced between CP3 and O&M Company

- Cc: Mr. Bui Xuan Cuong
Chairman, Management Authority for Urban Railways
☐ with attachment ☒ without attachment
- Cc: Mr. Hoang Nhu Cuong
Vice Chairman, Management Authority for Urban Railways
Director, Project Management Unit No.1
☐ with attachment ☒ without attachment
- Cc: Mr. Duong Huu Hoa
Vice Director, Project Management Unit No.1
☒ with attachment ☐ without attachment
- Cc: Mr. Phan Nhat Linh
Vice Director, Project Management Unit No.1
☐ with attachment ☒ without attachment
- Cc: Mr. Tatsuya Masuzawa
Project Director, NJPT Head Office
☐ with attachment ☒ without attachment

List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Proposed Meeting Schedule	Completed by	Remarks
Signalling							
1	ATS	O&M	Layout in BCC.	Layout of operation desk and monitor terminal in BCC operation room.	05-11-14	31-12-14	
2	IL, ATS	O&M	Layout in OCC	Layout of operation desk and monitor terminal in OCC operation room.	05-11-14	31-12-14	
3	IL, ATS	O&M	OCC Monitor terminal display design	Monitor terminal in OCC operation room detail design such as object color, shape, location, and size.	01-12-14	31-12-14	
4	Miscellaneous System	O&M	Layout in station office.	Layout of Train Descriptor System Monitor terminal and other CP3 equipments in station office.	19-11-14	31-12-14	
5	Miscellaneous System	O&M	Train Descriptor System Monitor terminal display design	Train Descriptor System Monitor terminal detail design such as object color, shape, location, and size.	01-12-14	31-12-14	
6	Miscellaneous Signalling System	O&M	Signalling Signage	Design and location of Wayside Signboard	01-12-14	31-12-14	
7	Onboard ATP	O&M	Speed meter design	HTC has been discussing specification of speed meter with Chief adviser of NUP, Mr. Tateishi	01-12-14	31-12-14	
8	IL, ATP,ATO,ATS	O&M	Interlocking Table	HTC submitted Technical Report of Interlocking Table (Ref No: UMRT L1-CP3-SG-TDD-REP-10014-A-R0) dated 20 June 2014. HTC would like to discuss this issue.	01-12-14	31-12-14	
Telecommunication							
9	Telephone System CCTV System PA System Radio System DPS	O&M	Layout of operation desk and monitor terminal in OCC operation room.	We will propose layout of operation desk and monitor terminal in OCC operation room. O&M company will confirm our proposal.	05-11-14	16-1-15	
10	Telephone System CCTV System PA System	O&M	Layout of operation desk and monitor terminal in SCR at the station.	We will propose layout of operation desk and monitor terminal in SCR at the station. O&M company will confirm our proposal.	19-11-14	16-1-15	We only obtained the detail drawings of Type-A Thao Dien Station. Other station schedule depends on CP2, CP1a and CP1b.

List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Proposed Meeting Schedule	Completed by	Remarks
11	Telephone System CCTV System PA System Clock System	O&M	Location of Equipment (Telephone, Camera, Speaker, Clock) - CP1a area	We will propose location of equipment (telephone, camera, speaker and clock) to O&M company. O&M company will confirm our proposal.	After receiving Station Layout drawing from CP1a	16-1-13	This schedule depends on CP1a schedule.
12	Telephone System CCTV System PA System Clock System	O&M	Location of Equipment (Telephone, Camera, Speaker, Clock) - CP1b area	We will propose location of equipment (telephone, camera, speaker and clock) to O&M company. O&M company will confirm our proposal.	After receiving Station Layout drawing from CP1b	16-1-13	This schedule depends on CP1b schedule.
13	Telephone System CCTV System PA System Clock System	O&M	Location of Equipment (Telephone, Camera, Speaker, Clock) - CP2 area	We will propose location of equipment (telephone, camera, speaker and clock) to O&M company. O&M company will confirm our proposal.	17-10-14	30-11-14	We only obtained the detail drawings of Type-A Thao Dien Station. Other station schedule depends on CP2, CP1a and CP1b.
14	Telephone System Radio System	O&M	Numbering plan for telephone and radio terminal	We will propose Numbering plan of telephone and radio terminal and discuss it with O&M company.	07-11-14	30-11-14	
15	Telephone System	O&M	The number of PSTN connection	We will propose necessary number of PSTN connection. O&M company will contract phone lines with Telephone company.	30-11-14	16-1-13	
16	PA System	O&M	Specification regarding PA system (PA announcement zone, PA announcement priority)	We will propose specification of PA announcement zone and PA announcement priority and discuss it with O&M company.	07-11-14	30-11-14	We only obtained the detail drawings of Type-A Thao Dien Station. Other station schedule depends on CP2, CP1a and CP1b.
17	Radio System	O&M	Specification regarding Radio system (call priority, talk-group)	We will propose specification of call priority and talk-group for Radio system and discuss it with O&M company.	07-11-14	30-11-14	
18	CCTV System	O&M	Cash transfer route	We will discuss about cash transfer route with O&M company in order to finalize CCTV camera location.	17-10-14	30-11-14	We only obtained the detail drawings of Type-A Thao Dien Station. Other station schedule depends on CP2, CP1a and CP1b.

List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Proposed Meeting Schedule	Completed by	Remarks
19	Training	O&M	Training schedule	Specifications Part 4, there is conflict about requirement. In Clause 9.1.3, it is mentioned that no training course shall be started before the completion of design phase. On the other hand, in Clause 9.3.2 (3), it is mentioned that some training courses shall be performed during the Design stage. We would like to discuss about training schedule.	07-11-14	30-11-14	Particular Specifications PART 4 Telecommunication System Clause 9.1.3 and 9.3.2 (3)
20	Radio System	O&M	Official registered name and representative person	We need the official registered name and representative person for submitting the application forms such ARFM and telephone company and so on.	15-10-14	24-10-14	
21	Telephone System Radio System	O&M	Official Address	We need the official addresses for submitting the application forms such ARFM and telephone company and so on.	15-10-14	24-10-14	
22	PA System	O&M	Pre-recorded message	We will propose Pre-recorded messages for PA announcement and discuss it with O&M company.	30-11-14	16-1-15	
23	Overall	O&M	Operation Policy for Telecommunication System	We will propose operation policy for Telecommunication System and discuss with O&M company regarding to operation, such as communication matrix, role and responsibility of each Dispatcher, etc.	07-11-14	30-11-14	
Rediffy Scada							
24	HMI	O&M	HMI Review	During the latest stage of Design, there will be a HMI Prototype review on the actual operator workstation with the Employer/Operator	03 Jan 15 to 30 Jan 15	02-2-15	

List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Proposed Meeting Schedule	Completed by	Remarks
Rolling Stock							
25	All	O&M	Maintenance staff Training	The maintenance handling of each Equipment; (1) Overview; (2) Car body; (3) Bogies including wheel, axle and suspension; (4) Coupler and draft gear; (5) cab; (6) Car logic control; (7) Propulsion; (8) Brake; (9) Pneumatics; (10) Primary power; (11) Auxiliary power; (12) Door control; (13) Air conditioning; (14) Lighting; (15) Automatic train control and communications; (16) Systems interface; and (17) Maintenance schedules.	Every month From 02/Jan/2015 to 30/Jun/2015	30-6-16	PS3.2.10 Training and knowledge transfer PS11.1 Maintenance Staff Training
26	Cab Layout	O&M	Handling of the driving	Handling of the driving	Every month From 02/Jan/2015 to 30/Jun/2015	30/Apr/2015	PS7.1.13.2 Cab interior and equipment
27	All	O&M	Engineering staff Training	1)Overview of the Train Formation 2)Background Theory 3)System Feature and Functions 4)System Configuration and Operation Principle 5)Description of System Components and Equipment down to Card or Module Level 6)Test and Commissioning Procedure 7)Use of Test and Commissioning Procedure 8)Reading and Interpretation of Alarm Indications ,Message and Print-Outs 9)Preventive Maintenance Procedure 10)Fault Diagnosis ,Trouble shooting and corrective Maintenance Procedure 11)Equipment Settings and Parameter Configuration 12)Use of Equipment manuals,Operation and Maintenance manuals ,Circuit Diagrams and Wiring Schematics 13)Data Software backup and Loading 14)Use of Software such as peripheral Control and Configuration,utility, database Structure,Generation and Modification 15)Planning and Maintenance 16)Procurement Procedure of Parts;and 17)Inventory Control	Every month From 02/Jan/2016 to 30/Jun/2016	30-6-16	PS11.2 Engineering staff Training
Power Supply							

List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Proposed Meeting Schedule	Completed by	Remarks
28	P-SCADA	O&M	Layout	Layout of operation desk and monitor at OCC room	02-2-15	20/Sep/2015. (Before Factory Acceptance Test.)	
29	P-SCADA	O&M	Monitor Design	Monitor configuration and using color at OCC room	02-2-15	20/Sep/2015. (Before Factory Acceptance Test.)	
30	P-SCADA	O&M	Operation Desk	Operation Desk design	02-2-15	20/Sep/2015. (Before Factory Acceptance Test.)	
31	DEG	O&M	Oil supply Method	Confirmation of the method of oil supply at OCC substation and Be Son substation	02-2-15	20/Sep/2015. (Before Factory Acceptance Test.)	
32	P-SCADA	O&M	Operation and maintenance of P-SCADA	Inform item 1. monitoring for power supply 2. substation fault 3. daily report 4. monitoring P-SCADA system 5. layout of display	02-2-15	20/Sep/2015. (Before Factory Acceptance Test.)	
33	DEG	O&M	Operation and maintenance of DEG	Inform item 1. operation start/stop 2. emergency start/stop 3. method of oil supply	02-2-15	20/Sep/2015. (Before Factory Acceptance Test.)	
34	All	O&M	Power supply system equipments of (RTSS) (TSS) (SSS)	Inform item 1. place of each equipment 2. daily check (1 time / 1 or 2 month) 3. usual inspection (1 time / 1Year) 4. Normal inspection (1 time / 3 Years) 5. Precision inspection (1 time / 6 Years)	31-10-15	13/Jul/2016. (Before RTSS Power supply receive.)	PS 8.3 Maintenance Items and Interval
35	All	O&M	O&M from power receive up to taking over	Monitoring and operation of substation equipment after power supply receive up to the taking over (start of commercial operation).	31-10-15	13/Jul/2016. (Before RTSS Power supply receive.)	
36	All	O&M	Spare parts	Information item 1. Maintenance of each equipment 2. Spare parts location 3. maintenance support	31-10-15	31-5-17	

List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Proposed Meeting Schedule	Completed by	Remarks
37	All	O&M	Technical hand over	Schedule for 1. OCC construction 2. Depot 3. RTSS, TSS, SSS	01-8-13	31/Oct/2013. (Before preparation of Partial Acceptance Test plan)	
38	Power Supply	O&M	Operational Diagram	Discussion of Operation Method	13-1-13	28-2-13	
39	Power Supply	O&M	Interlocking Diagram	Discussion of Interlocking Method	13-1-13	28-2-13	
40	Power Supply	O&M	Protection Scheme	Discussion of Protection Scheme Method	13-1-13	28-2-13	
Automatic Fare Collection							
41	Training Machine	O&M	The number of trainee and cycle time of training	Request to inform the number of trainee to determine the number of training machine. We will supply AFC training facilities in accordance with Appendix B of PS. However, The number of Training Equipment changes depending on the number of Trainee.	02-12-14	21-2-13	Particular Specifications PART 8 AUTOMATIC FARE COLLECTION Clause 3.3, 9.3(1)
42	TVM, FAM	O&M	Acceptable types of bill and coin	We would like to coordinate Acceptable types of bill and coin with O&M company. We will propose acceptable types of bill and coin .	13-11-14	21-2-13	Particular Specifications PART 8 AUTOMATIC FARE COLLECTION Clause 5.1.11(1)
43	IC card	O&M	Sample card	We would like to coordinate Sample card with O&M company. We will propose Sample card .	20-1-13	03-4-13	Particular Specifications PART 8 AUTOMATIC FARE COLLECTION Clause 5.2.4(6)
44	TVM	O&M	Man-machine interface of TVM	We would like to coordinate Man-machine interface of TVM with O&M company. We will propose Man-machine interface of TVM.	16-12-14	21-2-13	Particular Specifications PART 8 AUTOMATIC FARE COLLECTION Clause 5.3.4(2)
45	Contactless IC Card Issuing System, Recycle System, Staff-pass System and Central Server	O&M	Layout of Card handing Center	We would like to coordinate layout of Card handing Center with O&M company. We will submit layout plan of Card handing Center again reflected NPT's comments (UMRTL1-CP3-GL-IFM-LTR-00734-A-R1).	16-12-14	31-12-13	Particular Specifications PART 8 AUTOMATIC FARE COLLECTION Appendix E

List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Proposed Meeting Schedule	Completed by	Remarks
46	Central Server	O&M	Data transmission with O&M company	Request to inform following: - List of interfacing system - General description of interfacing system - Requirements for accounting (data and reporting format) - Requirements for transportation data. And we will propose following: - Interface with AFC system; - Accounting data format; - Accounting report format; - Transportation data format.	16-12-14	21-2-15	Particular Specifications PART 8 AUTOMATIC FARE COLLECTION Appendix E
47	AFC equipment installed in Administration Building	O&M	UPS for AFC equipment installed in Administration Building	We would like to consider power supply for AFC equipment installed in Administration Building with O&M company.	16-12-14	31-12-15	
Depot and Workshop Equipment							
48	Standard catalogue Equipment	O&M	Layout of Computer, furniture and chair	Designation of Computer, Furniture and Chair at various location	21-11-14	31-1-15	
49	Various Equipment	O&M	Colour of Equipment	Desired colour of various equipment like shunter, wheel reprofiling facility	21-11-14	31-1-15	
Platform Screen Door							
50	Monitoring Console	O&M	Location of Monitoring Console at Station office	We would like to coordinate Man-machine location of Monitoring Console	01-4-15	28-5-15	
51	Sign board	O&M	Sign board on PSD facade for Instruction to Passenger	We would like to coordinate the letter on Sign board for Passenger Safety Instruction with O&M Company	01-4-15	28-5-15	
OCS							
52	Current capacity	O&M	Current capacity in depot	Discussion about Operation rule of rolling stock inside depot(for considering current capacity)	20-1-15	15-3-15	
53	OCS training line	O&M	Specification of OCS training line	Discussion about system specification for OCS training line in depot.	20-1-15	15-3-15	
54	Disconnecting switch	O&M	Operation method	Operation method for Disconnecting switch	20-1-15	15-3-15	
Trackwork							
55	Rail	O&M	Delivery route	we would like to discuss delivery route of rail.	20-11-14	20-12-14	
56	Sign board	O&M	Sign boards on the line	We would like to discuss location and specification of signboard for train operation.	29-11-14	30-12-14	
57	Track system	O&M	Maintenance	we would like to discuss about time, interval and method of track maintenance.	23-12-14	31-1-15	
Equipment Layout & Civil Interface							
58	Signaling, AFC	O&M	Maintenance Base in Main Workshop (1st floor)	Room allocation for the Maintenance Base and equipment layout	31-10-14	31-12-14	
59	Signaling	O&M	Signaling room in Infrastructure Workshop Building	The purpose and equipment allocation in Signaling Room in Infrastructure Workshop Building	31-10-14	31-12-14	

List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Proposed Meeting Schedule	Completed by	Remarks
60	F-SCADA, Telecom.	O&M	SCADA, Telecom, CCTV Room in Infrastructure Workshop Building	The purpose and equipment allocation in SCADA, Telecom, CCTV Room in Infrastructure Workshop Building	31-10-14	31-12-14	
61	Train Simulator	O&M	Train driver training room in Main workshop building	Layout and access to train simulator in Train driver training room in Main workshop building	31-10-14	31-12-14	
62	AFC Training Equipment	O&M	AFC operation training room in Main Workshop building	Equipment Layout for AFC operation training room in Main Workshop Building	31-10-14	31-12-14	
63	O&M Company Building	O&M	Server Room, AFC Control Center	AFC server layout in server room, AFC equipment (card issuing machines) in AFC Control Center	31-10-14	31-12-14	
64	O&M Company Building	O&M	Electrical power for AFC equipment	Electrical power supply for AFC equipment in O&M building	31-10-14	31-12-14	
Maintenance Work related interface							
65	Maintenance Work	O&M	Organization and number of staff	Organization of Maintenance Division of O&M Company - For Type-A work - For Type-B work	31-10-14	31-3-15	
66	Maintenance Work	O&M	Working time and shift work	Confirmation of working time and time table for shift work based on Hitachi's assumption.	31-10-14	31-3-15	
67	Maintenance Work	O&M	Maintenance cycle of RS	Maintenance cycle assumption; - Daily - Weekly - Monthly - Major equipment inspection; 4 years or 600,000km as specified PS - Overhaul; 8 years as specified PS	31-10-14	31-3-15	
68	Maintenance Work	O&M	Waste material pick-up shelter Hazardous material store	Operation policy for waste material and hazardous material	31-10-14	31-3-15	CP2's RFI; UMRT L1-CP2-DWMP-INT-RFI-00166 UMRT L1-CP2-OHMS-INT-RFI-00167



**General Consultants' Services for
Ho Chi Minh City Urban Railway Construction Project
Ben Thanh – Suoi Tien Section (Line 1)**

NJPT Association

NK – JIC – PBJ – JTC – TEC – TEDI South - TRICC

Our Ref. No. LHTCL/NJPT/CP3/1411E-00169	Your Ref:	Date: 01 st November 2014
Letter <input checked="" type="checkbox"/> Fax <input type="checkbox"/>		Page 1 of 3

Hitachi Ltd., Ho Chi Minh City
Urban Railway Line 1- Project Office
Bao Viet Financial Centre 7th floor, 233 Dong Khoi Street, District 1
Ho Chi Minh City
Attn: Mr. Toru KOMAKI
Project Manager

Dear Sirs,

Sub: Comments on Interface Items with O&M Company

After Meeting on Interface Items with O&M Company held on 30th Oct 2014 at D5 Office between PMU1, PUC, NJPT and HTC, our comments are as followings;

1. HTC has responsibility to design all subsystems specified in the Contract and shall propose suitable design complying with the Employer's Requirements as the experienced contractor for EPC contract;
2. HTC is requested to make design based on the Employer's Requirements in accordance with the design schedule committed in the Tender Proposal and the Contract, i.e., Initial Works Programme. However, it seems very hard to discuss designing condition with O&M Company along the design schedule in consideration of current situation on O&M Company. If HTC will wait O&M Company coming, it will cause serious delay in design which may violate the Contract. To solve the problem, HTC is highly requested to proceed design based on Appendix 14 of GS and their experiences in other projects;
3. Minor changes may be required after O&M Company comes. HTC shall design to minimize risks of design change in future;
4. HTC is also requested to make clear and record their designing conditions for conveniences to discussion or clarification in future;
5. Almost items listed as major interface with O&M Company provided at the Meeting (the List) shall be designed by HTC as above mentioned;
6. HTC is also requested to submit Technical Design Report relating to the List for review by the Employer's Representative and discussion between PMU1, PUC, NJPT and HTC;
7. Regarding item No.1, 2, 9, 28, 30, please design suitable ones based on HTC's experiences, and discuss with CP2 Contractor as part of interfacing. In this case, total space shall be within

NJPT PROJECT OFFICE

ADDRESS: Group 12, Tan Lap Block, Dong Hoa Ward, Di An Dist, Binh Duong Province.
Tel: 0650-377-3400
Fax: 0650-377-3411



**General Consultants' Services for
Ho Chi Minh City Urban Railway Construction Project
Ben Thanh – Suoi Tien Section (Line 1)**

NJPT Association

NK – JIC – PBJ – JTC – TEC – TEDI South - TRICC

Our Ref. No. LHTCL/NJPT/CP3/1411E-00169	Your Ref:	Date: 01 st November 2014
Letter <input checked="" type="checkbox"/> Fax <input type="checkbox"/>		Page 2 of 3

- 1/6 of room space due to 6 lines come in future;
8. Regarding item No.4, 10, 11, 12, 13, 18, 45 and 50, please discuss with CP2 Contractor as part of interfacing;
 9. Regarding item No.3, 5, 14, 15, 16, 17, 23, 24, 29, 38, 39, 40, 42, 43, 44 and 49, please proceed design tentatively as mentioned above 1 – 7 and provide the time line clearly indicating dead line of design, manufacturing and installation for final decision by the Employer;
 10. Regarding item No.6, 7, 8, 26 and 56, our experts will come and discuss on the issues;
 11. Regarding item No.26, 57, 58, 59, 60, 61, 62, 65, 66, 67, 68 and 69, please propose maintenance plan and obtain consent of MAUR at first. Since the Employer's Drawings are reference only, and then HTC shall develop their design by themselves;
 12. Regarding item No.19, 25, 27, 41 and 53, HTC shall submit O&M Manuals and Training Plan as per the Contract. In the context, HTC shall propose suitable facility and plan for training;
 13. Regarding No.22, HTC shall propose suitable requirements for PA messages in consideration of PA system itself;
 14. Regarding 31, 32 and 33, HTC shall propose suitable method and maintenance system after study of Vietnamese regulations;
 15. Regarding No.35 and 37, please study the Contract;
 16. Regarding No.63 and 64, please coordinate with CP2 Contractor who is charged in Administration Building Design;
 17. Regarding 47, HTC shall supply all necessary equipment for Rail Systems. UPS is included in the Contract;
 18. Please delete No.55 due to interfacing with CP2, not O&M Company;
 19. Other items shall be proposed by HTC for earlier settlement of design.

Your comprehension for above and suitable action would be appreciated.



Yoshiniko SATO

Project Manager (Rail Systems)

NJPT Association

NJPT PROJECT OFFICE

ADDRESS: Group 12, Tan Lap Block, Dong Hoa Ward, Di An Dist, Binh Duong Province.
Tel: 0650-377-3400
Fax: 0650-377-3411



**General Consultants' Services for
Ho Chi Minh City Urban Railway Construction Project
Ben Thanh – Suoi Tien Section (Line 1)**

NJPT Association

NK – JIC – PBJ – JTC – TEC – TEDI South - TRICC

Our Ref. No. LHTCL/ NJPT/CP3/1411E-00169	Your Ref:	Date: 01 st November 2014
Letter <input checked="" type="checkbox"/> Fax <input type="checkbox"/>		Page 3 of 3

- Cc:
- Mr. Hoang Nhu Cuong, Vice Chairman/ MAUR, Director/PMU1
 - Mr. Duong Huu Hoa, Deputy Director/PMU1
 - Mr. Phan Nhat Linh, Deputy Director/PMU1
 - Mr. Nguyen Duc Huy, Deputy Director/PMU1
 - NJPT Association, Head Office

NJPT PROJECT OFFICE

ADDRESS: Group 12, Tan Lap Block, Dong Hoa Ward, Di An Dist, Binh Duong Province.
Tel: 0650-377-3400
Fax: 0650-377-3411

HITACHI
Inspire the Next



Hitachi, Ltd.,
Ho Chi Minh City Urban Railway Line 1 Project Office

Ref. No. UMRT L1-CP3-CN-ADM-LTR- 04358 -A-R0

Our Ref. No. HTC-201411- 4358

Date: November 13, 2014

NJPT Site Office

Group 12, Tan Lap Block – Dong Hoa Ward – Di An District,
Binh Duong Province, Vietnam

ATTN: Mr. Yoshihiko Sato
Project Manager (Rail Systems),



Re: Our Reply to Your Comments on Interface Items with O&M Company

Dear Sirs,

Pursuant to your letter referenced LHTCL/NJPT/CP3/1411E-00169 dated November 1, 2014;

We would like to respond to your letters as follows – numbering as per the original:

- 1 & 2 Before 29th October 2014, whenever HTC raised an issue on O&M Company issues, HTC were told that these would be discussed in a separate meeting. Consequently, until the meeting, all issues related to the O&M Company requiring resolution before Technical Design Submission had been placed "on hold".

At the start of the meeting, held on 29th October 2014, NJPT stated that "no one knows" when the O&M Company would be on board but that it certainly would not be within 1 year. Consequently, the main strategy for addressing O&M Company interface issues outlined by NJPT was that HTC should proceed based on assumptions, previous experiences or requirements in the GS or PS. HTC is aware of the Systems Operation Plan provisions in appendix 14 of the GS and will follow up accordingly.

During the meeting, HTC identified that during the design development process some instances where review/revision of the plans in Appendix 14 is required. NJPT replied that there was currently no plan to undertake a review of these nevertheless, HTC notes that such a review would be part of the Obligations of the Employer's Representative under the Railway Operation item in table 36.1 of Clause 36 of GS.

- 3 & 9 HTC understands that minor changes may be required by the O&M Company after its

set up, indeed this is identified in GS Clause 36.1.4 (2) 6). HTC advises that the key date for design freeze to be observed by the O&M Company, or party acting on its behalf is as follows:

- Issues affecting sub-system architecture or functionality (including software function) addressed in Technical Design– to be frozen prior to submission of Technical Design
- Issues affecting equipment selection or equipment physical design or HMI software addressed in Construction and Installation Design – to be frozen during the Construction and Installation Design phase before Factory Acceptance Test (FAT) or prior to submission of Construction and Installation Design
- Issues affecting operation or maintenance addressed in Operation Manual or Maintenance Manual – to be frozen prior to submission of Operation Manual or Maintenance Manual

The above key date shall be applicable not only to the items listed in your No. 9 but also to other items specified in Attachment-1.

- 4 Noted.
- 5, 12 Agreed, the matrix discussed at the meeting has been updated to reflect this, showing at which stage (including key date for design freeze) the issue requires to be finalized.
- 6 HTC does not recognize any requirements in respect of a "Technical Design Report" on O&M interfaces in accordance with the Contract Agreement. It is our understanding that all the issues will be addressed in Technical Design, Construction and Installation Design, Training Manual, Operation Manual and Maintenance Manual which are documents specified in the Contract Agreement.
- 7, 8 Items to be discussed in interface with CP2 are identified in the updated matrix.
- & 16 Should the allocated space be insufficient, HTC will approach NJPT for direction and expect CP2 to do likewise for this and that NJPT are having similar discussions as CP3 for O&M Company interface issues.
- 10 Noted, please advise the schedule for attendance of the experts to close these items noting that items 7 & 8 have been addressed in Technical Design Submissions. Item 26 involves review of the train mock up and items 6 & 56 are for future submissions and hence, less critical at this time.
- 11 Noted with items 57, 65 and 66. Item 26 involves review of the mock up, and items 58, 59, 60, 61, 62 will be interfaced with CP2 and addressed in Construction and Installation Design, and item 68 will be addressed in Operation Manual.
- 13 Noted, however, we are disputing additional cost through the Contractor's Claim letter referenced UMRT L1-CP3-CN-CLM-LTR-00961-A-R0 dated August 13, 2014.
- 14 Agreed, the matrix discussed at the meeting has been updated to reflect this, showing at which stage (key date for design freeze) the issue requires to be finalized.
- 15 Items 35 and 37 are for interface with O&M Company for knowledge transfer to the

O&M Company's operators for operation of substation after energizing and will be addressed in the Training Manual.

- 17 Item 47 to be deleted. HTC will comply with the requirement for AFC in the PS.
- 18 HTC would like to repeat the request made at the meeting for NJPT to act on behalf of the O&M Company and arbitrate on the rail delivery route from an ease of operating/maintenance point of view. Unfortunately we are not able to confirm that we have been able to reach agreement with CP2 on this matter.
- 19 The matrix will be updated and re-issued as appropriate as items are closed or new issues identified. Acting on behalf of the O&M Company and pursuant to their obligations under table 36.1, we would also expect NJPT to raise any issues that they feel should be addressed as part of this task.

HTC would also like to record the following items raised in the meeting (numbering continued for ease of future reference):

- 20 As a minor issue, HTC points out that the meeting was held on Wednesday 29th October, not Thursday 30th October 2014.
- 21 There are indications in the PS that O&M company staff will be available during the Design Period however as stated in the meeting and recorded above, NJPT have now confirmed that this will not be the case. Consequently, HTC notes there has been a change to the process envisaged at the start of the contract.
- 22 In the meeting, NJPT requested CP3 to consider preparation of a TVM mock up as approval is by a "higher authority". However, it is HTC's understanding that there is no such specific requirement for a mock up of TVM in the PS of AFC, that GS Clause 23.1.1 points that the Contractor shall produce mock up as specified in PS..

Moreover, it is also our technical view that mock up of TVM is not required to confirm the layout of touch panel.
- 23 NJPT advise that a further Interfacing Contractor, CP4 is to be awarded and CP3 will be required to interface with them. HTC will advise of the implications as and when the details become clearer.
- 24 Further to items 7, 8 & 16 above, we are not fully aware of what CP2 and CP1b's status is with regard to their O&M Company interfaces and would be grateful if NJPT could provide an update.
- 25 Further to items 20 and 21 in the interface list, HTC's separate letter (ref HTC-201411-1340 dated 4th November 2014) describes the situation with regard to attempts to get the necessary information for ARFM applications.

Your understanding on the situation and your prompt follow up on the appropriate aforementioned items would be greatly appreciated.

Sincerely yours,



Kazuhiko Nagasawa,
Deputy Project Manager
Hitachi, Ltd.,

Ho Chi Minh City Urban Railway Line 1 Project Office

Attachments-1; List of Major Interface Items with O&M Company

- Cc: Mr. Bui Xuan Cuong
Chairman, Management Authority for Urban Railways
☐ with attachment ☒ without attachment
- Cc: Mr. Hoang Nhu Cuong
Vice Chairman, Management Authority for Urban Railways
Director, Project Management Unit No.1
☐ with attachment ☒ without attachment
- Cc: Mr. Duong Huu Hoa
Vice Director, Project Management Unit No.1
☒ with attachment ☐ without attachment
- Cc: Mr. Phan Nhat Linh
Vice Director, Project Management Unit No.1
☒ with attachment ☐ without attachment
- Cc: Mr. Tatsuya Masuzawa
Project Director, NJPT Head Office
☒ with attachment ☐ without attachment

Attachment-1 List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Remarks
Signalling					
1	ATS	O&M	Layout in BCC.	Layout of operation desk and monitor terminal in BCC operation room.	To be addressed in C&I Design (CP2 Interface Issue)
2	IL, ATS	O&M	Layout in OCC	Layout of operation desk and monitor terminal in OCC operation room.	To be addressed in C&I Design (CP2 Interface Issue)
3	IL, ATS	O&M	OCC Monitor terminal display design	Monitor terminal in OCC operation room detail design such as object color, shape, location, and size.	To be addressed in C&I Design
4	Miscellaneous System	O&M	Layout in station office.	Layout of Train Descriptor System Monitor terminal and other CP3 equipments in station office.	To be addressed in C&I Design (CP2 Interface Issue)
5	Miscellaneous System	O&M	Train Descriptor System Monitor terminal display design	Train Descriptor System Monitor terminal detail design such as object color, shape, location, and size.	To be addressed in C&I Design
6	Miscellaneous Signalling System	O&M	Signalling Signage	Design and location of Wayside Signboard	To be addressed in C&I Design
7	Onboard ATP	O&M	Speed meter design	HTC has been discussing specification of speed meter with Chief adviser of NJPT, Mr.Tateishi	Assumption made in TDS
8	IL, ATP,ATO,ATS	O&M	Interlocking Table	HTC submitted Technical Report of Interlocking Table (Ref No: UMRT L1-CP3-SG-TDD-REP-10014-A-R0) dated 20 June 2014. HTC would like to discuss this issue	Assumption made in TDS
Telecommunication					
9	Telephone System CCTV System PA System Radio System DPS	O&M	Layout of operation desk and monitor terminal in OCC operation room.	We will propose layout of operation desk and monitor terminal in OCC operation room. O&M company will confirm our proposal.	To be addressed in C&I Design (CP2 Interface Issue)
10	Telephone System CCTV System PA System	O&M	Layout of operation desk and monitor terminal in SCR at the station.	We will propose layout of operation desk and monitor terminal in SCR at the station. O&M company will confirm our proposal.	To be addressed in C&I Design (CP2 Interface Issue)

Attachment-1 List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Remarks
11	Telephone System CCTV System PA System Clock System	O&M	Location of Equipment (Telephone, Camera, Speaker, Clock) - CP1a area	We will propose location of equipment (telephone, camera, speaker and clock) to O&M company. O&M company will confirm our proposal.	To be addressed in C&I Design (CP2 Interface Issue)
12	Telephone System CCTV System PA System Clock System	O&M	Location of Equipment (Telephone, Camera, Speaker, Clock) - CP1b area	We will propose location of equipment (telephone, camera, speaker and clock) to O&M company. O&M company will confirm our proposal.	To be addressed in C&I Design (CP2 Interface Issue)
13	Telephone System CCTV System PA System Clock System	O&M	Location of Equipment (Telephone, Camera, Speaker, Clock) - CP2 area	We will propose location of equipment (telephone, camera, speaker and clock) to O&M company. O&M company will confirm our proposal.	To be addressed in C&I Design (CP2 Interface Issue)
14	Telephone System Radio System	O&M	Numbering plan for telephone and radio terminal	We will propose Numbering plan of telephone and radio terminal and discuss it with O&M company.	To be addressed in C&I Design Phase before FAT
15	Telephone System	O&M	The number of PSTN connection	We will propose necessary number of PSTN connection. O&M company will contract phone lines with Telephone company.	Assumption made in TDS
16	PA System	O&M	Specification regarding PA system (PA announcement zone, PA announcement priority)	We will propose specification of PA announcement zone and PA announcement priority and discuss it with O&M company.	To be addressed in C&I Design Phase before FAT
17	Radio System	O&M	Specification regarding Radio system (call priority, talk-group)	We will propose specification of call priority and talk-group for Radio system and discuss it with O&M company.	To be addressed in C&I Design Phase before FAT. Note that this is configurable after installation.
18	CCTV System	O&M	Cash transfer route	We will discuss about cash transfer route with O&M company in order to finalize CCTV camera location.	Assumption will be made in C&I Design

Attachment-1 List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Remarks
19	Training	O&M	Training schedule	No training course shall be started before the completion of design phase(PS Clause 9.1.3) however, facilities available for O&M company engineering personnel during Design Phase as per Clause 9.3.2 (3).	Assumption will be made in Training Manuals
20	Radio System	O&M	Official registered name and representative person	We need the official registered name and representative person for submitting the application forms such ARFM and telephone company and so on.	Interface evidence needed for TDS
21	Telephone System Radio System	O&M	Official Address	We need the official addresses for submitting the application forms such ARFM and telephone company and so on.	Interface evidence needed for TDS
22	PA System	O&M	Pre-recorded message	We will propose Pre-recorded messages for PA announcement and discuss it with O&M company.	To be addressed in C&I Design Phase before FAT
23	Overall	O&M	Operation Policy for Telecommunication System	We will propose operation policy for Telecommunication System and discuss with O&M company regarding to operation, such as communication matrix, role and responsibility of each Dispatcher, etc.	Assumption made in TDS (in accordance with Apx 14)
Facility Scada					
24	HMI	O&M	HMI Review	During the latest stage of Design, there will be a HMI Prototype review on the actual operator workstation with the Employer/Operator	To be addressed in C&I Design Phase before FAT

Attachment-1 List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Remarks
Rolling Stock					
25	All	O&M	Maintenance staff Training	<p>The maintenance handling of each Equipment;</p> <p>(1) Overview;</p> <p>(2) Car body;</p> <p>(3) Bogies including wheel, axle and suspension;</p> <p>(4) Coupler and draft gear;</p> <p>(5) cab;</p> <p>(6) Car logic control;</p> <p>(7) Propulsion;</p> <p>(8) Brake;</p> <p>(9) Pneumatics;</p> <p>(10) Primary power;</p> <p>(11) Auxiliary power;</p> <p>(12) Door control;</p> <p>(13) Air conditioning;</p> <p>(14) Lighting;</p> <p>(15) Automatic train control and communications;</p> <p>(16) Systems interface; and</p> <p>(17) Maintenance schedules.</p>	Assumption will be made in Training Manuals (strategy covered in Maintenance Plan)
26	Cab Layout	O&M	Handling of the driving	Handling of the driving	Assumption made in TDS, issues will be closed out in review of mock up
27	All	O&M	Engineering staff Training	<p>1) Overview of the Train Formation</p> <p>2) Background Theory</p> <p>3) System Feature and Functions</p> <p>4) System Configuration and Operation Principle</p> <p>5) Description of System Components and Equipment down to Card or Module Level</p> <p>6) Test and Commissioning Procedure</p> <p>7) Use of Test and Commissioning Procedure</p> <p>8) Reading and Interpretation of Alarm Indications, Message and Print-Outs</p> <p>9) Preventive Maintenance Procedure</p> <p>10) Fault Diagnosis, Trouble shooting and corrective Maintenance Procedure</p> <p>11) Equipment Settings and Parameter Configuration</p> <p>12) Use of Equipment manuals, Operation and Maintenance manuals, Circuit Diagrams and Wiring Schematics</p> <p>13) Data Software backup and Loading</p> <p>14) Use of Software such as peripheral Control and Configuration, utility, database Structure, Generation and Modification</p> <p>15) Planning and Maintenance</p> <p>16) Procurement Procedure of Parts; and</p> <p>17) Inventory Control</p>	Assumption will be made in Training Manuals

Attachment-1 List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Remarks
Power Supply					
28	P-SCADA	O&M	Layout	Layout of operation desk and monitor at OCC room	To be addressed in C&I Design (CP2 Interface Issue)
29	P-SCADA	O&M	Monitor Design	Monitor configuration and using color at OCC room	To be addressed in C&I Design (CP2 Interface Issue)
30	P-SCADA	O&M	Operation Desk	Operation Desk design	To be addressed in C&I Design (CP2 Interface Issue)
31	DEG	O&M	Oil supply Method	Confirmation of the method of oil supply at OCC substation and Ba Son substation	Separate Technical Design Report under preparation
32	P-SCADA	O&M	Operation and maintenance of P-SCADA	Inform item 1. monitoring for power supply 2. substation fault 3. daily report 4. monitoring P-SCADA system 5. layout of display	To be addressed in C&I Design Phase before FAT
33	DEG	O&M	Operation and maintenance of DEG	Inform item 1. operation start/stop 2. emergency start/stop 3. method of oil supply	To be addressed in C&I Design Phase before FAT (strategy covered in Maintenance Plan)
34	All	O&M	Power supply system equipments of (RTSS) (TSS) (SSS)	Inform item 1. place of each equipment 2. daily check (1 time / 1 or 2 month) 3. usual inspection (1 time / 1Year) 4. Normal inspection (1 time / 3 Years) 5. Precision inspection (1 time / 6 Years)	Assumption will be made in Training Manuals (strategy covered in Maintenance Plan)
35	All	O&M	O&M from power receive up to taking over	Monitoring and operation of substation equipment after power supply receive up to the taking over (start of commercial operation).	To be addressed in Training Manual
36	All	O&M	Spare parts	Information item 1. Maintenance of each equipment 2. Spare parts location 3. maintenance support	To be addressed in Maintenance Manual
37	All	O&M	Technical hand over	Schedule for 1. OCC construction 2. Depot 3. RTSS, TSS, SSS	To be addressed in Training Manual
38	Power Supply	O&M	Operational Diagram	Discussion of Operation Method	Assumption will be made in Operation Manuals

Attachment-1 List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Remarks
39	Power Supply	O&M	Interlocking Diagram	Discussion of Interlocking Method	Assumption will be made in Operation Manuals
40	Power Supply	O&M	Protection Scheme	Discussion of Protection Scheme Method	Assumption will be made in Operation Manuals
Automatic Fare Collection					
41	Training Machine	O&M	The number of trainee and cycle time of training	Request to inform the number of trainee to determine the number of training machine. We will supply AFC training facilities in accordance with Appendix B of PS. However, The number of Training Equipment changes depending on the number of Trainee.	Assumption will be made in Training Manuals
42	TVM, FAM	O&M	Acceptable types of bill and coin	We would like to coordinate Acceptable types of bill and coin with O&M company. We will propose acceptable types of bill and coin.	Assumption included in Technical Design
43	IC card	O&M	Sample card	We would like to coordinate Sample card with O&M company. We will propose Sample card.	To be addressed in C&I Design Phase before FAT (strategy covered in Maintenance Plan)
44	TVM	O&M	Man-machine interface of TVM	We would like to coordinate Man-machine interface of TVM with O&M company. We will propose Man-machine interface of TVM.	To be addressed in C&I Design Phase before FAT (strategy covered in Maintenance Plan)
45	Contactless IC Card Issuing System, Recycle System, Staff-pass System and Central Server	O&M	Layout of Card handing Center	We would like to coordinate layout of Card handing Center with O&M company. We will submit layout plan of Card handing Center again reflected NJPT's comments (UMRTL1-CP3-GL-IFM-LTR-00734-A-R1).	To be addressed in C&I Design (CP2 Interface Issue)
46	Central Server	O&M	Data transmission with O&M company	Request to inform following, - List of interfacing system - General description of interfacing system - Requirements for accounting (data and reporting format) - Requirements for transportation data. And we will propose following, - Interface with AFC system; - Accounting data format; - Accounting report format; - Transportation data format.	Assumption will be included in C&I Design Phase before FAT

Attachment-1 List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Remarks
47	Not Used	Not Used	Not Used	Not Used	Not Used
Depot and Workshop Equipment					
48	Standard catalogue Equipment	O&M	Layout of Computer, furniture and chair	Designation of Computer, Furniture and Chair at various location	To be addressed in C&I Design (CP2 Interface Issue)
49	Various Equipment	O&M	Colour of Equipment	Desired colour of various equipment like shunter, wheel reprofiling facility	To be addressed in C&I Design (CP2 Interface Issue)
Platform Screen Door					
50	Monitoring Console	O&M	Location of Monitoring Console at Station office	We would like to coordinate Man-machine location of Monitoring Console	To be addressed in C&I Design Phase before FAT (CP2 Interface Issue)
51	Sign board	O&M	Sign board on PSD facade for instruction to Passenger	We would like to coordinate the letter on Sign board for Passenger Safety Instruction with O&M Company	To be addressed in C&I (Manufacture) Design
OCS					
52	Current capacity	O&M	Current capacity in depot	Discussion about Operation rule of rolling stock inside depot (for considering current capacity)	Assumption will be included in Operation Manual
53	OCS training line	O&M	Specification of OCS training line	Discussion about system specification for OCS training line in depot.	Assumption will be included in Training Manual
54	Disconnecting switch	O&M	Operation method	Operation method for Disconnecting switch	Assumption will be included in Operation Manual
Trackwork					
55	Rail	O&M	Delivery route	we would like to discuss delivery route of rail.	NUPT support required operating issues that CP2 do not consider
56	Sign board	O&M	Sign boards on the line	We would like to discuss location and specification of signboard for train operation.	Assumption will be included in Operation Manual
57	Track system	O&M	Maintenance	we would like to discuss about time, interval and method of track maintenance.	Assumption will be included in Maintenance Manual (strategy covered in Maintenance Plan)
Equipment Layout & Civil Interface					
58	Signaling, AFC	O&M	Maintenance Base in Main Workshop (1st floor)	Room allocation for the Maintenance Base and equipment layout	To be addressed in C&I Design (CP2 Interface Issue)
59	Signaling	O&M	Signaling room in Infrastructure Workshop Building	The purpose and equipment allocation in Signaling Room in Infrastructure Workshop Building	To be addressed in C&I Design (CP2 Interface Issue)
60	F-SCADA, Telecom.	O&M	SCADA, Telecom, CCTV Room in Infrastructure Workshop Building	The purpose and equipment allocation in SCADA, Telecom, CCTV Room in Infrastructure Workshop Building	To be addressed in C&I Design (CP2 Interface Issue)
61	Train Simulator	O&M	Train driver training room in Main workshop building	Layout and access to train simulator in Train driver training room in Main workshop building.	To be addressed in C&I Design (CP2 Interface Issue)
62	AFC Training Equipment	O&M	AFC operation training room in Main Workshop building	Equipment Layout for AFC operation training room in Main Workshop Building	To be addressed in C&I Design (CP2 Interface Issue)
63	O&M Company Building	O&M	Server Room, AFC Control Center	AFC server layout in server room, AFC equipment (card issuing machines) in AFC Control Center	To be addressed in C&I Design (CP2 Interface Issue)
64	O&M Company Building	O&M	Electrical power for AFC equipment	Electrical power supply for AFC equipment in O&M building	To be addressed in C&I Design (CP2 Interface Issue)
Maintenance Work related interface					

Attachment-1 List of Major Interface Items with O&M Company

No.	Equipment	I/F Party	I/F Title	Description	Remarks
65	Maintenance Work	O&M	Organization and number of staff	Organization of Maintenance Division of O&M Company - For Type-A work - For Type-B work	Assumption will be included in Maintenance Manual (strategy covered in Maintenance Plan)
66	Maintenance Work	O&M	Working time and shift work	Confirmation of working time and time table for shift work based on Hitachi's assumption.	Assumption will be included in Maintenance Manual (strategy covered in Maintenance Plan)
67	Maintenance Work	O&M	Maintenance cycle of RS	Maintenance cycle assumption; - Daily - Weekly - Monthly - Major equipment inspection; 4 years or 600,000km as specified PS - Overhaul; 8 years as specified PS	Assumption will be included in Maintenance Manual (strategy covered in Maintenance Plan)
68	Maintenance Work	O&M	Waste material pick-up shelter Hazardous material store	Operation policy for waste material and hazardous material	Assumption will be included in Operation Manual

Fire prevention in Japanese Railways

26 February 2016
Hiraide Toru

1

1 Background

In Japan the railway disaster prevention policy and countermeasures have been evolved over the years through experiences of major accidents and disasters.

Among the major underground railway fire disasters, especially the **two serious fire accidents** accelerated the policy alteration.

One is the **fire accident** that occurred in **JNR Hokuriku Tunnel** in Fukui prefecture, Japan. On 6th November 1972, the night train bound for Aomori from Osaka caught fire while running in the 13,870m long Tunnel. The accident killed 30 and injured 714 persons. The death was caused by carbon monoxide, not by fire. Criticism was made of inadequate fireproofing and fire regulations that instructed operators to stop the train in case of fire in a tunnel.

This accident urged the authorities to **raise the standards of fire resistant materials for rolling stock** and to **revise the train operation rules**. The revised rules treat stopping of trains in tunnels as an exceptional measure, and running to the next station or outside the tunnel as basic one.

2

The other is the **fire accident** that occurred on **Subway in Teagu-city**, Korea. On 18th February, 2003, on Subway 1st line, a train caught fire due to arson by a passenger and stopped at Tyuoji Station. Moreover, the oncoming train came into and stopped at the station and the fire spread to it.

The mistakes by the driver and operation commander and the structural problems of the cars and station made the situation worse. The 2 trains burned completely. The fire, smoke and poisonous gases killed 192 and injured 146 persons.

After the tragic Taegu fire disaster, the MLIT of Japanese Government has established a working group to urgently make recommendations on the **revision of the Ministerial Ordinance** for safety standards of the MRT system.

Subsequently, MLIT revised the "Technical Standards Relating to Fire Prevention in Underground Stations, Ordinance No.29 " to **include arson as a major fire source**.

3

2 Fundamentals for Fire Protection

The fire safety management is a critical issue for the implementation of railway projects.

Especially, the **underground fire safety management** is most important for the project implementation.

Safety of the metro system is largely dependent on the **organization of the operator**. The **functions of the divisions** and **job descriptions of the staffs** should be clearly defined. And the organization needs to be **disciplined and prepared** for any conceivable adverse situation and trained sufficiently **prior to the inauguration of services**.

Basic Requirements

- a) Preparation of the **disaster prevention plan & emergency operation manual**,
- b) Establishment of **emergency communication system**, linking internal divisions and external emergency services,
- c) Planning of **training program for personnel**,
- d) Preparation of **evacuation manual for each station**,
- e) **Promotion of public awareness**

4

Communication and Cooperation with Other Agencies

- a) Establishment of **emergency communication procedures, manual, and contact system with emergency services** such as fire department, police, and hospital
- b) **Information sharing on facilities** for disaster/emergency management
- c) **Joint exercises, training and drills** on site with emergency services.

Preparation of Management Manual and Drilling

The management manual for the disaster/emergency incidents shall be made by the **discussion with** other agencies such as the **fire department**. It shall be prepared in each station. The drilling for evacuation and fire fighting shall be done together with the **train operation controller, driver, station staffs** and **fire brigade**.



Initial Fire Fighting by Staff



Relief of the Passenger

Presentation is made about the outline of the Japanese standards and practices.

5

3 Establishment of Standards for Underground Fire Safety Management in Japan

In 1975, “the Standard of Fire Safety Management for Subway Station, etc.” was issued as **special appendix** to the **provision No.29 of “Ministerial Ordinance** of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) ”.

The fire safety provisions for the subway station are set up based on this standard with reference to **Fire Protection Law** and building codes of **Building Standard Law**.

This standard of fire safety management for the subway station was totally reviewed and altered taking into consideration the fire accident in Dague, South Korea in 2003.

In 2004, the revised “**Standard of Fire Management for Subway Station, etc., Ministerial Ordinance of MLIT**” was issued.

In the revised provision, the **fire by arson** (big fire) was considered in addition to the conventional **normal fire** (ordinary fire).

6

4 Fire Loads and Evaluation Methods of Smoke

The fire loads are classified into **two types**. The characteristics of the fire differ between the types.

One is **normal fire** and the other is **fire by arson** with fuel. In consideration of the difference in characteristics of fire, the evaluation of passenger evacuation is made.

7

Normal Fire

One of the **origins of the normal fire** is motors or other auxiliary **machines** installed under the floor **of cars**. The other origin of the normal fire is **small shops (KIOSK)** in the station.

Usually, the **power** of the normal fire is **small** and its **temperature** is **low** at the beginning and it becomes larger after the flashover occurs.

Smoke Density and Required Visibility for Smooth Evacuation

Under the condition given below, the passengers can evacuate without reducing their walking speed. The procedure for the evacuation evaluation is as follows.

Time (t) required for evacuation is calculated.

Smoke density (C_s) at the time (t) of completion of evacuation is calculated.

If C_s is **0.1 m^{-1} or less**, the condition for smooth evacuation is satisfied.

Load Model of Normal Fire

The time to flashover is relatively long. The smoke of the normal fire diffuses evenly and widely. Therefore inhalation of smoke is not considered, so the main factor for safe evacuation is **visibility of the passengers**.

According to the research and experiment in Japan, the **smoke density (C_s)** shall be **0.1 m^{-1} or less** to secure the **visibility of 15 to 20m** required for smooth evacuation.

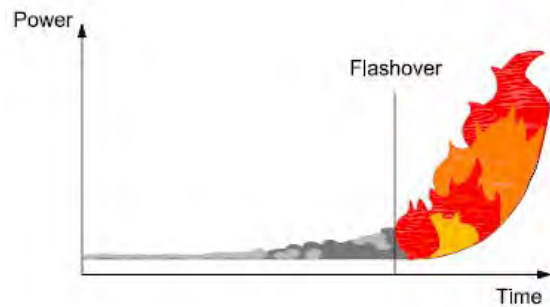


Image of Normal Fire Load Model

9

Fire by Arson with Fuel

Load Model of Fire by Arson with Fuel

The **power** of the arson fire is **strong and constant** from the beginning. The **temperature** of smoke is **high**. Smoke will move in **strata underneath the ceiling** and descend gradually.

Descending speed of the smoke stratification from the ceiling is evaluated.

For safe evacuation, the space for evacuation shall be secured. The **height of the space** below the bottom of the smoke strata above the floor surface shall be **at least 2.0m** (men's largest height).

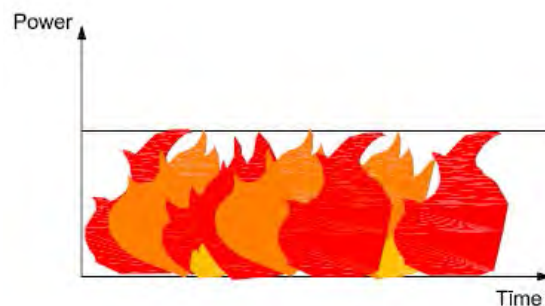


Image of Fire Load Model by Arson

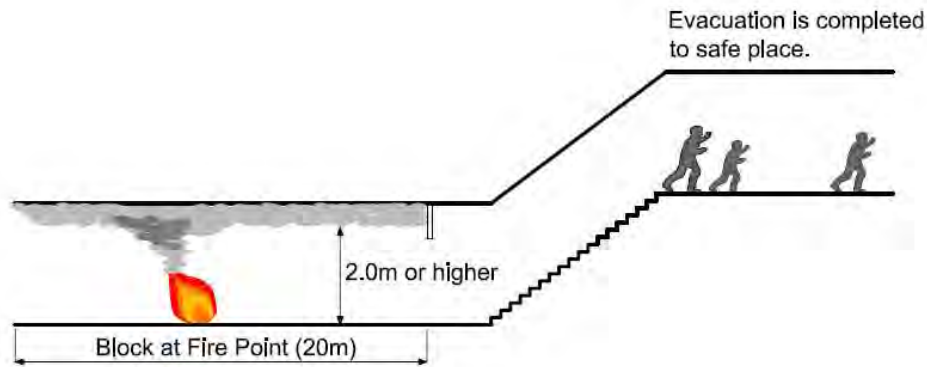
10

Required Space for Evacuation in Case of Fire by Arson

The procedure for the evaluation of evacuation is:

- **Time (t)** required for evacuation is calculated.
- If the **space below** the bottom of the **smoke stratification** above the floor exceeds 2.0m at the time (t) of completion of evacuation, the condition for safe evacuation is satisfied.

(Details of the fire load and calculation procedures set by MLIT are presented later.)



Smoke Density and Required Visibility for Smooth Evacuation

11

5 Fire Location and Target Passengers

5 cases shall be addressed.

12

Case 1 Fire on Train Running to Station

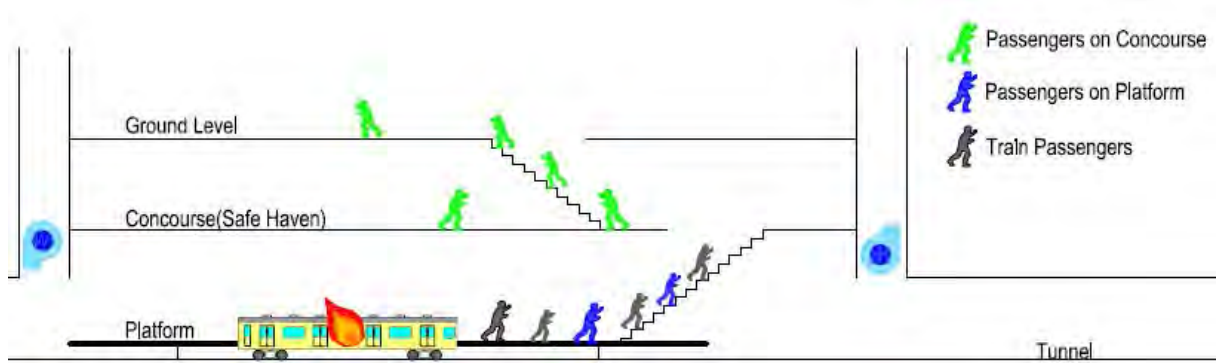


Case 1	Fire Load	Target Passengers	Study of Evacuation
a	Normal Fire	Train Passengers	Required
b	Fire by Arson	Train Passengers	Not required (Covered by Case 2-b)

This shows the case of fire on a train running to the next station in tunnel. The evacuation of passengers on the platform is completed until the train arrives. The target passengers are only train passengers.

13

Case 2 Fire on Train Stopping at Station

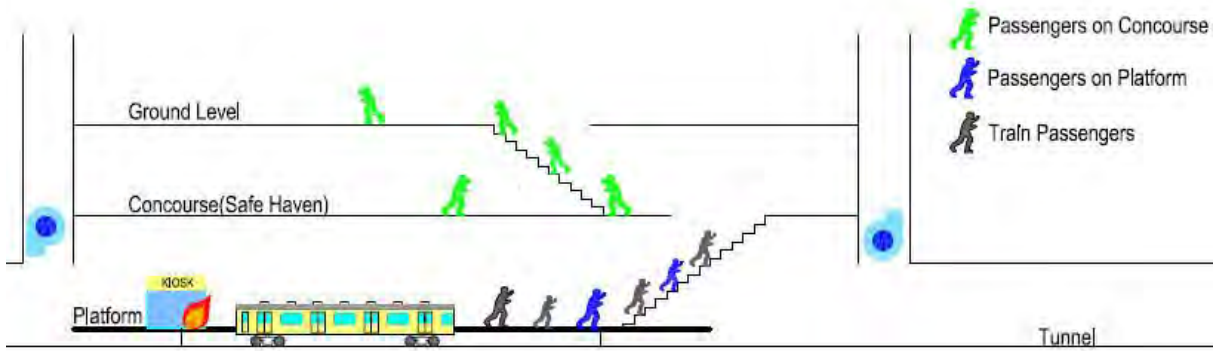


Case 2	Fire Load	Target Passengers	Study of Evacuation
a	Normal Fire	Train Passengers	Not Required (Covered by Case 1-a)
b	Fire by Arson	Train Passengers Passengers on Platform	Required

In case of normal fire, the passengers on the platform can evacuate earlier than train passengers because the normal fire is of small power in the beginning.

14

Case 3 Fire at KIOSK on Platform

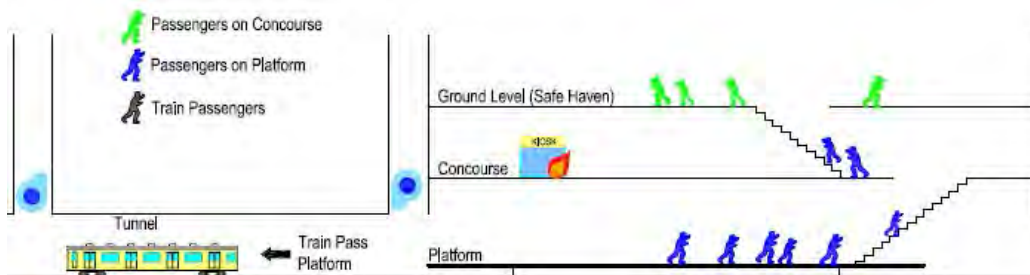


Case 3	Fire Load	Target Passengers	Evacuation Study
a	Normal Fire	Train Passengers Passengers on Platform	Required
b	Fire by Arson	Train Passengers Passengers on Platform	Required

The evacuation time study is required for both normal and by-arson fire cases. The target evacuation passengers are train passengers and passengers on platform.

15

Case 4 Fire at KIOSK in Concourse

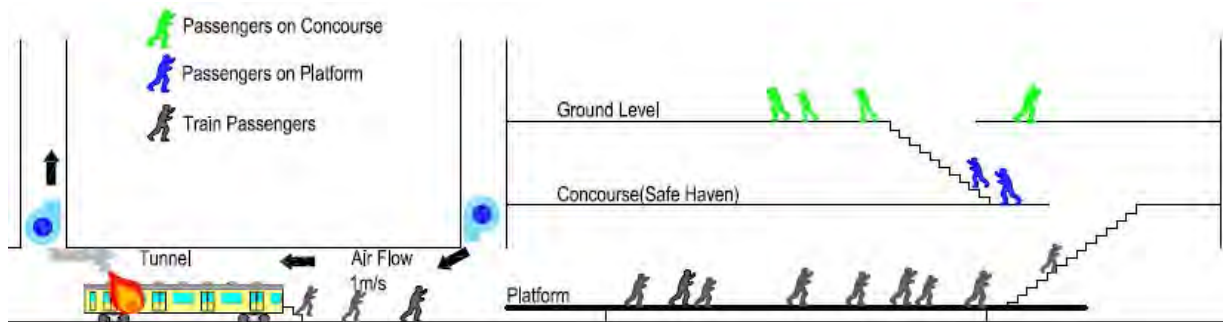


Case 4	Fire Load	Target Passengers	Evacuation Study
a	Normal Fire	Passengers on Platform	Required
b	Fire by Arson	Passengers on Platform	Required

In this case, the fire accident is notified from the train operation controller to the driver and the train will pass the platform. So it is not necessary to address train passengers. The target evacuation passengers are passengers on platform.

16

Case 5 Fire on Train Stalled in Tunnel



Case 5	Fire Load	Target Passengers	Evacuation Study
a	Normal Fire	Train Passengers	Not Required
b	Fire by Arson		
c	Cable Fire		

Smoke stratification is restrained by the tunnel ventilation system above the level under which the space for evacuation is secured.

17

6 Safe Haven (Safety Point) Definition

Safe haven is a place where evacuated passengers are not affected by smoke.

- In case of **fire in concourse**, **grade** (ground level) is safe haven.
- In case of **fire in tunnel or platform**, **concourse** is a safe haven and a fire protection compartment (shutter) is installed at the foot of a stair.

Operation of Smoke/Fire Protection Shutter



Normal Operation



During Evacuation



Fire Protection

18

Normal Time

The shutter type fire protection compartment is **fully open**.

During Evacuation,

The shutter is **lowered** and stopped at a level enabling the passengers to evacuate under it.

Fire Protection

After finish of evacuation is confirmed, the shutter is **closed completely** to create a safe haven. The concourse is protected and kept as a safe haven, and then passengers escape to the grade (ground level).

19

7 Design Fires and Property Models

Ministerial Ordinance of MLIT Provision No.29, Appendix7

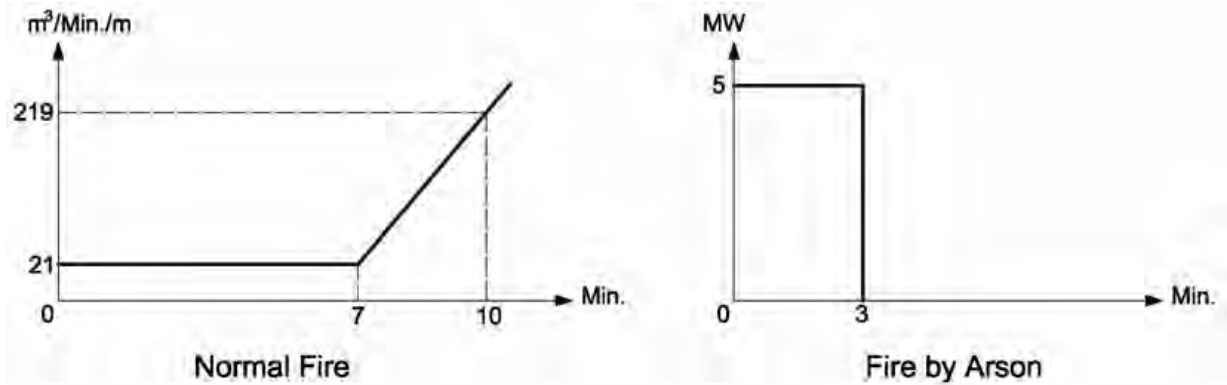
Assumed fire	Type	Origin of fire
Normal fire	Train	Fire from underfloor equipment of car
	KIOSK	Arson by lighter
Fire by arson	Train	Arson with 4 liter gasoline
	KIOSK	Arson with 4 liter gasoline

Based on the provision of ministerial ordinance of MLIT **provision No.29, Appendix7**, fires to be assumed are specified as in the table.

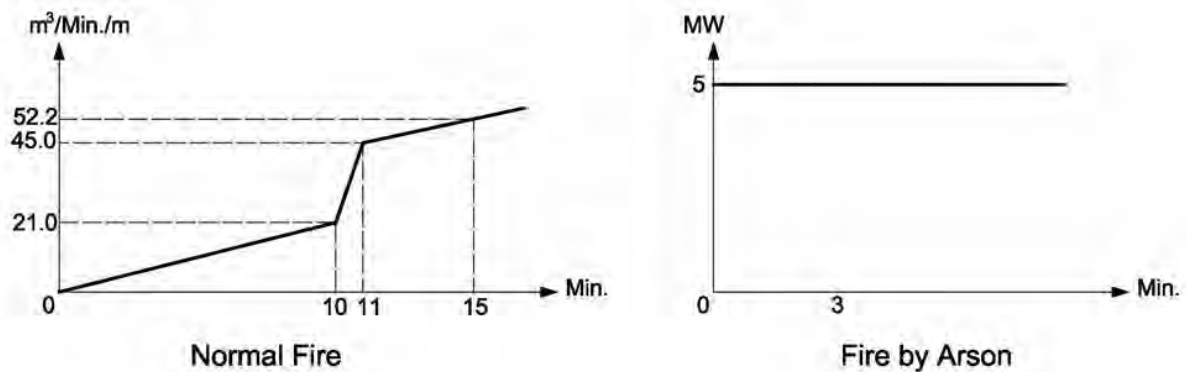
The characteristics of fire and smoke are different between ordinary fire and fire by arson (large fire). The fire property models used for calculating evacuation times were specified based on the actual burning experiments on trains and stores.

20

Fire Load Model of Rolling Stock



Fire Load Model of KIOSK



21

Fire property models for train fire

Normal fire

The figures are those obtained from the burning experiment in 1969 on the car of the Hibiya Subway line, Tokyo. The magnitude of fire is expressed by smoke generation speed C (m³/minute-m).

Fire by Arson

The figures are those obtained from the two-layer zone model analysis. The heat generation rate, Mega Watt/minute is used as parameter. 5 MW correspond to smoke generation rate of 300m³/minute in the simplified evaluation method.

Fire property models for store fire

The models were established on the same basis as train fire. But, as the burning materials are different in quality and quantity, smoke and heat generation patterns are different.

8 Outline of Evacuation Study

Normal Fire on Platform

- Evacuation safety is confirmed by **smoke density** (extinction coefficient C_s).
- Smoke density shall be less than or equal to 0.1 m^{-1} at the time of evacuation completion.
- $C_s \leq 0.1 \text{ m}^{-1}$

Normal Fire in Concourse

- Evacuation safety is confirmed by volume comparison.
- $V \geq V_0$
- The **smoke storage volume** in concourse (V) shall be larger than total smoke volume (V_0) at the time of evacuation completion.

Fire by Arson

- Evacuation safety is confirmed by the time for smoke stratification which hampers evacuation.
- The **evacuation space above floors** of platform/concourse up to the bottom of stratified smoke shall be **more than 2.0m** at the time of evacuation completion.

23

9 Calculation of Number of Passengers Evacuated

Investigations were conducted in Japanese three major metropolitan areas on **passengers in stations and on trains in rush hours**.

Results are shown in the table.

The **load factors** are expressed by **% of fixed train capacity**

24

Load factors in rush hours for island platform stations

Type	Load factor (%)	
	Terminal stations	Ordinary stations
Passengers on a train on fire	200	200
Passengers on oncoming train	-----	-----
Passengers on platform waiting for train on fire	100	50
Passengers on platform waiting for oncoming train	50	25

- Oncoming train runs to the next station without unloading passengers. So, passengers on an oncoming train are ignored.
- A terminal station is one having more than 100,000 passengers getting on and off together a day.
- For areas other than the 3 major metropolitan areas, figures are reduced to 75%.
- For intermediate stations having originating trains, 50% is added to the load factor for passengers waiting for a train on fire.
- For **side platform station**, see the **Appendix 7**

25

10 Evacuation Time Calculation

This is an example of a typical evacuation route of a two-story underground station.

Typical evacuation route of a two-story underground station

Train's doorways	→→→	Bottom of platform stairway	→→→→→		Ticket barrier	→→→	Bottom of exit stairway	→→→	Exit to ground
	Platform		Platform stairway	Concourse		Concourse		Exit stairway	
T_1	t_1	T_2	t_2	t_3	T_3	t_4	T_4	t_5	

26

Waiting and Walking times

Capital T is waiting (queuing) time at bottleneck and **small t** is walking time.

Waiting times are:

- T_1 at Train doorway,
- T_2 at foot of stair,
- T_3 at ticket barrier, and
- T_4 at foot of exit stair.

Walking times are:

- t_1 on platform,
- t_2 on platform stairway,
- t_3 on concourse,
- t_4 on concourse, and
- t_5 on exit stairway.

Waiting time at barrier i (bottleneck) is calculated by this equation.

$$T_i = Q / N_i \times B_i$$

Q = number of evacuator (persons)

N_i = passing coefficient of barrier i (person/m • sec)

B_i = width of barrier i (m)

27

Figures necessary for calculating walking and waiting times

In calculating the evacuation time , **Type B values** stipulated in the **Building Standard Law** are used.

Walking speed :

flat way 1.0 m/sec

stairway 0.5 m/sec

Passing coefficient :

flat way 1.5 person/m • sec

stairway 1.3 person/m • sec

Motion ability of people requiring evacuation

Type	Illustration		Motion ability of crowd			
			Walking speed (m/sec)		Flowout coefficient (person/m/sec)	
			Horizontal	Stairs	Horizontal	Stairs
Type A	People who cannot easily act on their own	Seriously ill person, senile person, babies and infants, feebleminded person, disabled person, etc.	0.8	0.4	1.3	1.1
Type B	General people who are not accustomed to the position, routes, etc. in the building	Hotel visitors, etc., visitors to a store, office, etc., passersby	1.0	0.5	1.5	1.3
Type C	Persons in good health who know the position, routes, etc. in the building	Workers, employees, guards, etc. in the building	1.8	0.8	1.8	1.4

28

In case of the typical evacuation route, **total evacuation time T_e** is calculated by this equation.

$$T_e = \sum_{i=1}^{i=5} T_i + T_{i-\max}$$

T_e is the time from the start of evacuation to the last evacuee's arrival at the grade (ground level).

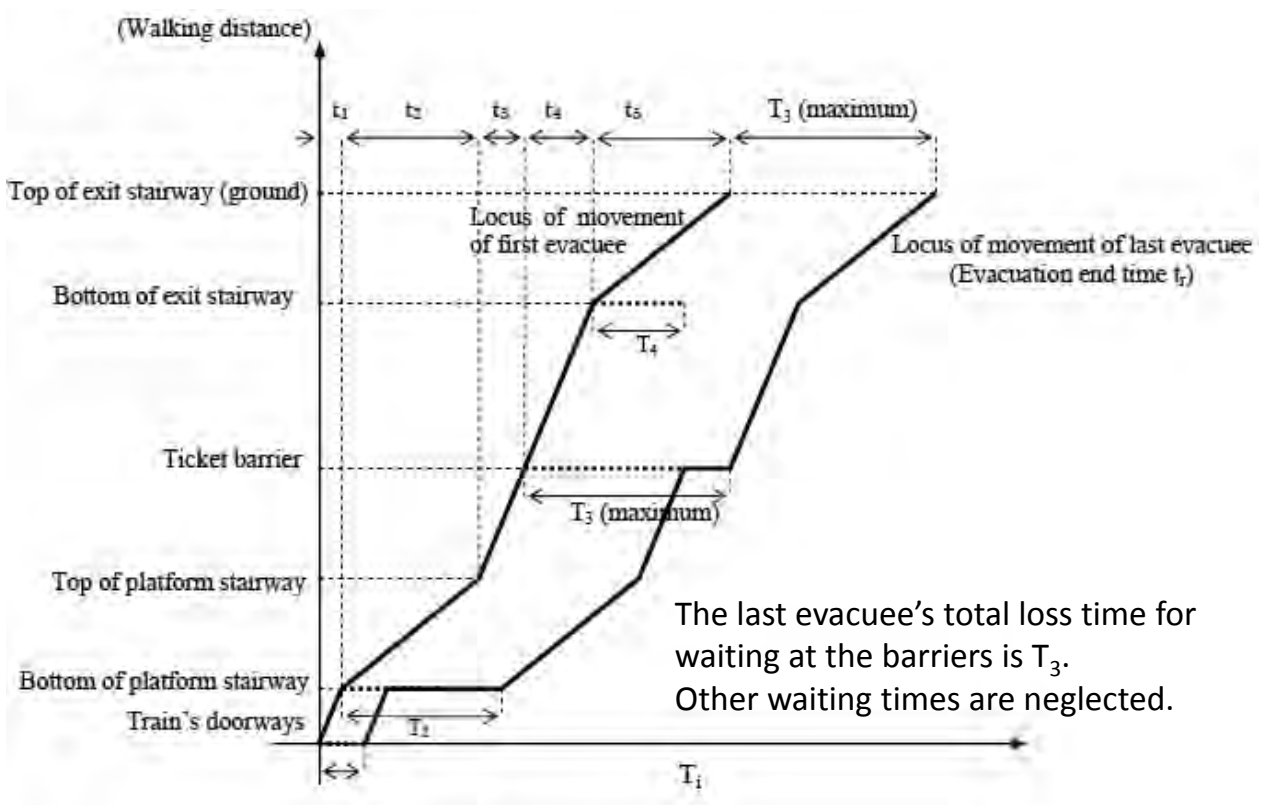
Diagram showing movements of first and last evacuees.

The last evacuee's total loss time for waiting at the barriers is T_3 and other waiting times are neglected.

The calculation example for the case where two **evacuation routes merge** into one **midway** on the evacuation route is given in the **Appendix7**.

29

Movements of the first and last evacuees



30

11 Study for Normal Fire

Smoke density on platform

Smoke density (C_s) on platform at evacuation time (t) is given by a function for train and KIOSK fires respectively. C_s shall be smaller than **0.1** for evacuation safety.

$$C_s = f(t, V, V_e) \leq 0.1$$

Though expressed here in general form, the function is transformed according to evacuation time (t) because of changing characteristics of fires.

(see **Appendix7**) Where:

C_s = smoke density

t = evacuation time

V = fire block volume

V_e = ventilation volume at fire block

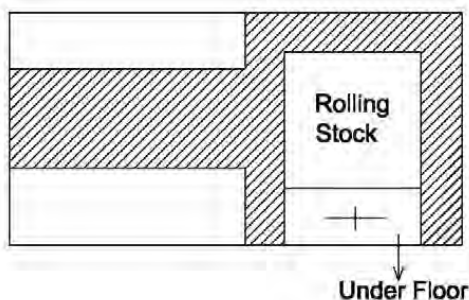
The detailed form of the function is given in the **Appendix7**.

The smoke exhaust facility shall have a minimum capacity of 5,000 m³/h for the block volume at the fire point.

Fire block volumes at the fire point are determined assuming smoke diffusion sections (hatched) . Length of fire block is 20m.

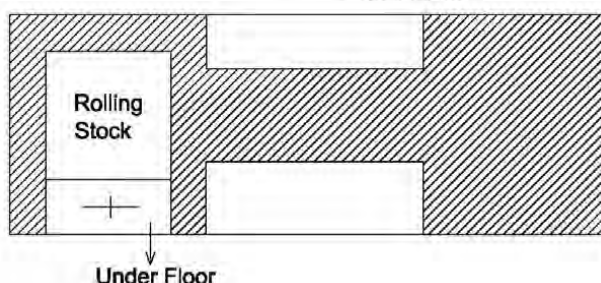
31

Cross section areas for calculating volume of block at fire point



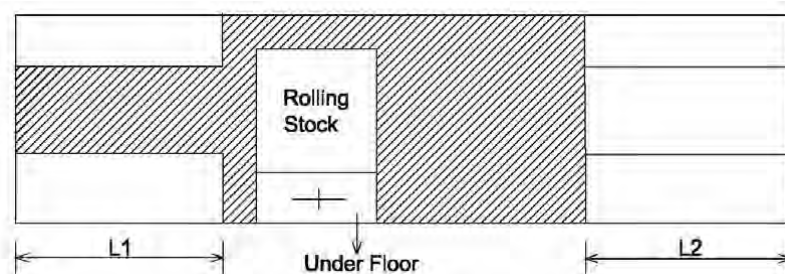
One Side Platform

Smoke diffuses to all section



Island Platform

Smoke diffuses to neighbor platform and track due to upward current of smoke by heat.



Opposite Platform

Height of rolling stock and ceiling of opposite platform is lower than ceiling of track. Therefore, smoke does not diffuse to opposite platform. Smaller platform case is applied. If $L1 < L2$, design cross section area is hatched area.

32

Smoke volume in concourse

Evacuation safety is confirmed by volume comparison.

$V + V_e \geq V_0$ Where:

V = smoke storage volume in concourse

V_e = volume of smoke exhausted by ventilation

V_0 = total smoke volume

Smoke storage volume

			Ceiling
			Smoke storage space
2.0m			Space for evacuation

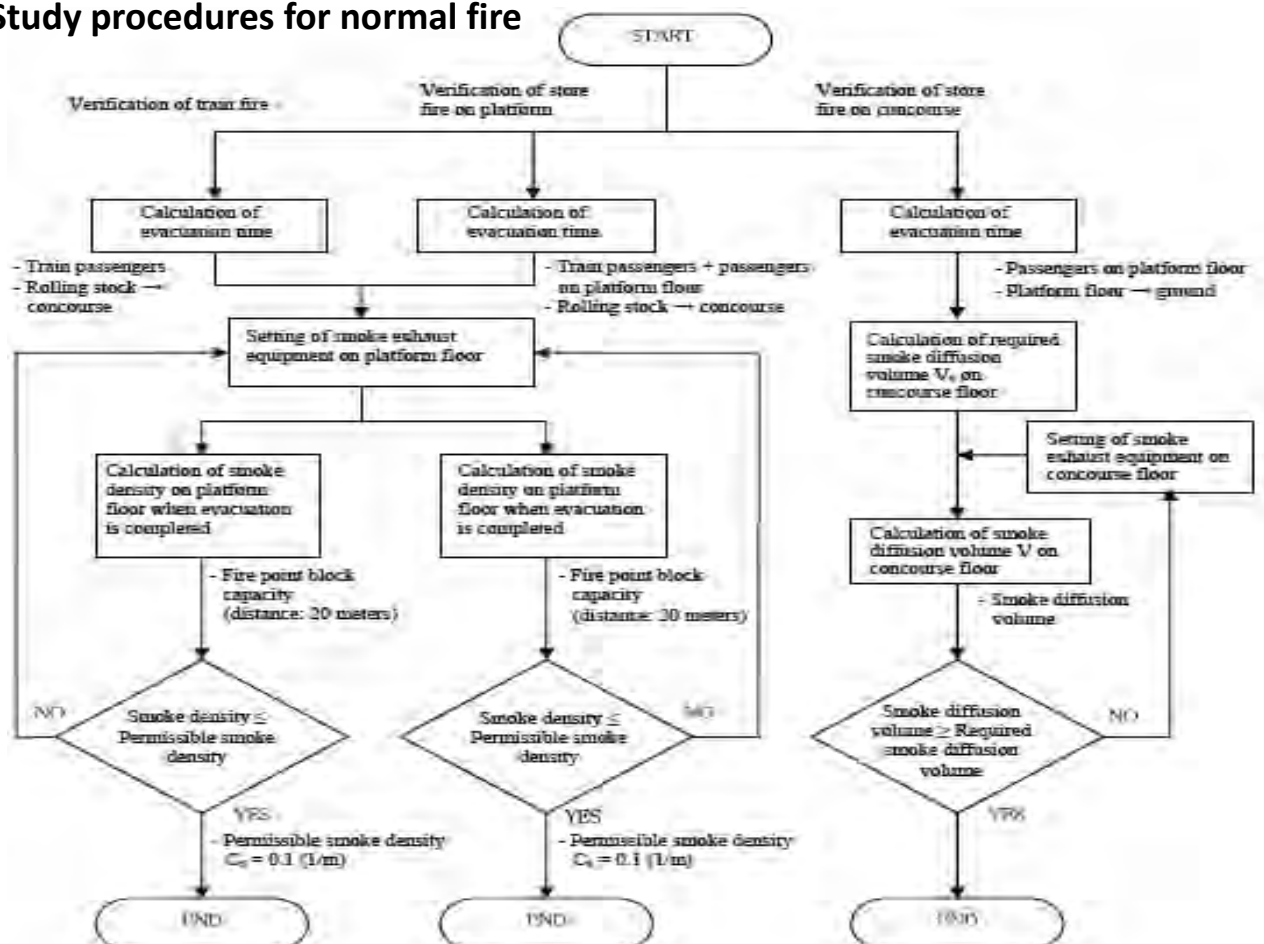
Smoke storage volume is one under the ceiling excluding the 2m-high space and columns above the floor.

$V_0 = f(t)$ is total smoke volume produced by fire until the finish of evacuation.

The detailed forms of the function are given in the **Appendix7**.

33

Study procedures for normal fire



The flowchart shows the **study procedures for normal fire**.

Studies are conducted on
train fire,
KIOSK fire on platform, and
KIOSK fire in concourse.

- Calculation of evacuation time
- Design of smoke extraction facility
- Calculation of smoke storage volume
- Calculation of smoke density or smoke expansion volume
- Comparison of smoke density and allowable value
or
- Comparison of smoke storage volume and total smoke volume

35

12 Study for Fire by Arson

Evacuation safety is confirmed by the formula:

$$t \leq t_0$$

Where:

t_0 = time to smoke stratification down to 2m height above floor

t = time until evacuation finish

$$t_0 = V_E / (V_s - V_{e'})$$

Where:

V_E = effective smoke storage volume above height of 2.0m over the whole floor
(m^3)

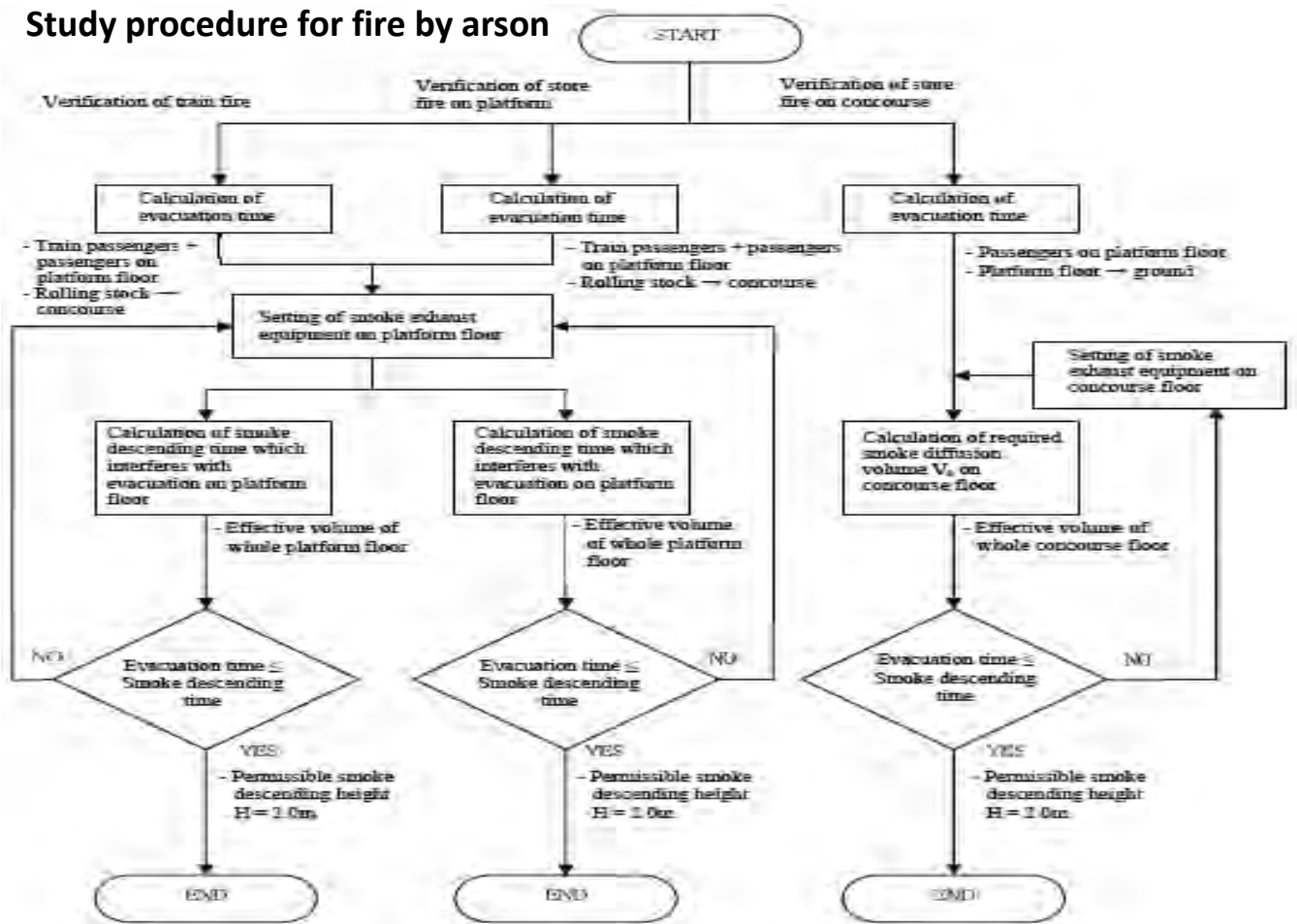
$V_s = t_0 \times 300m^3/min$ = smoke volume produced by fire

$V_{e'}$ = effective smoke exhaust volume for space V_E (m^3/min)

Details on calculation of V_E and $V_{e'}$ are described in the **Appendix7**.

36

Study procedure for fire by arson



37

The flowchart shows the **study procedures for fire by arson**.

Studies are conducted on:

train fire,
KIOSK fire on platform, and
KIOSK fire in concourse.

- Calculation of evacuation time
- Design of smoke extraction facility
- Calculation of smoke strata descending time down to level 2m above floor
- Comparison of evacuation time and smoke strata descending time

38

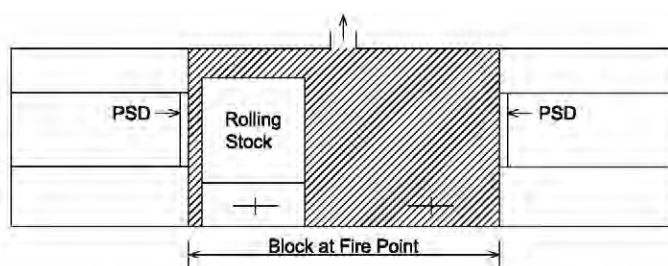
13 Ventilation Facilities for Platform Equipped with Full- Height Platform Screen Doors (PSD)

In the HCM metro project, full height PSDs are installed to separate the trainway and platform for the purpose of increasing passenger safety and efficiency of air conditioning.

In the **Appendix7**, only the case of a side platform station is demonstrated. For other station layouts, similar approaches are applied.

Study on normal fire on train

Fire block for normal fire on train

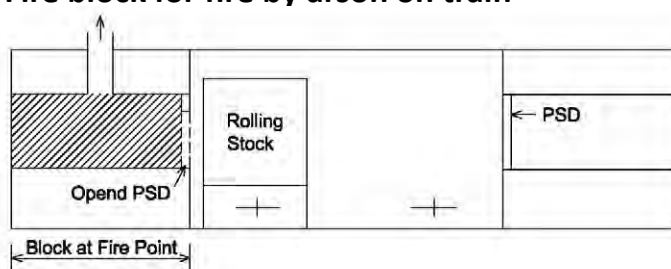


Origin of normal fire is assumed to be motors or facilities under the floor of cars. So, fire block is defined as shown in this diagram. In this case, additional use of tunnel ventilation for smoke exhaust is possible.

39

Study on fire by arson on train

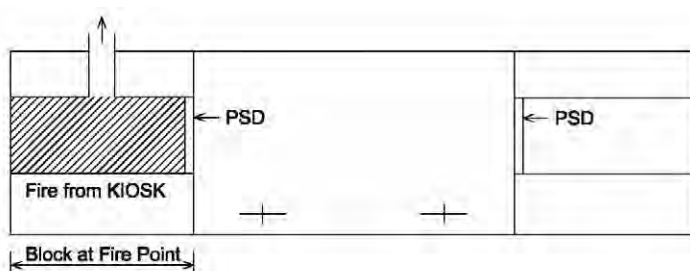
Fire block for fire by arson on train



Origin of fire is assumed to be 4 liter gasoline in a car. Smoke will diffuse to platform when doors of cars and PSDs are opened. So, fire block is defined as shown in this diagram.

Study on fire by arson at KIOSK on platform

Fire block for fire by arson at KIOSK on platform



Platform is filled with smoke due to closure by PSDs. Fire block is defined as shown in this diagram.

40

14 Use of Nonflammable (Noncombustible) Materials

In order to ensure the safety in underground stations, tunnels and trains, nonflammable materials should be used as far as possible.

Structures and interior finishes

Materials shall be nonflammable to prevent fire occurrence and spread. Nonflammable materials are concrete, steel and iron, ceramic tile, aluminum, metal board, glass, mortar, brick, etc. Other materials shall be tested by the Cone Calorimeter.

Fittings

Materials shall be nonflammable or fire-retardant.

Train and electric facility

They shall be made of nonflammable materials as far as possible.

Substation, power distribution and machinery rooms

They shall be compartmented with nonflammable materials.

Connection with underground mall

The safety of underground malls is separately regulated by the Fire Service Law in Japan. The underground station and underground mall shall be separated and segregated by fire protection compartments.

41

Shop in underground station

Example of convenience store

Containing many flammable materials, it shall be protected by a smoke/fire compartment and equipped with sprinklers for initial fire fighting and prevention of spread of fire.



KIOSK in underground station

Example of KIOSK

As small stores are difficult to protect by a smoke/ fire compartment, they shall be made of nonflammable materials except for floor.



42

15 Principle for Train Operation in Case of Fire

In compliance with the Ministerial Ordinance, the fundamental principle for train operation in case of train fire is to run the train on fire to the next station, to unload/evacuate passengers, and to conduct fire fighting activities.

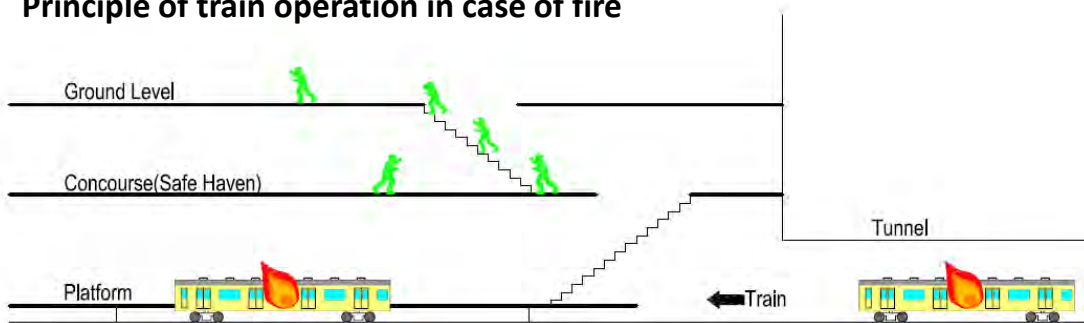
The train operation controller, notified of a train fire, issue directions to the driver of:

front-running train ----- to proceed to the next neighbor station,

rear-running train ----- to stop and not to approach the station,

oncoming train -----not to stop and to run to the next neighbor station.

Principle of train operation in case of fire



43

16 Evacuation from Train Stalled between Stations

Evacuation from end of train

When a fire on a train occurs between stations, in principle, the train runs to the next station. But, if the train stalls in the tunnel due to power failure other causes, passengers are unloaded through the front or rear end door and walk to the neighbor station.



Evacuation from the end of Train

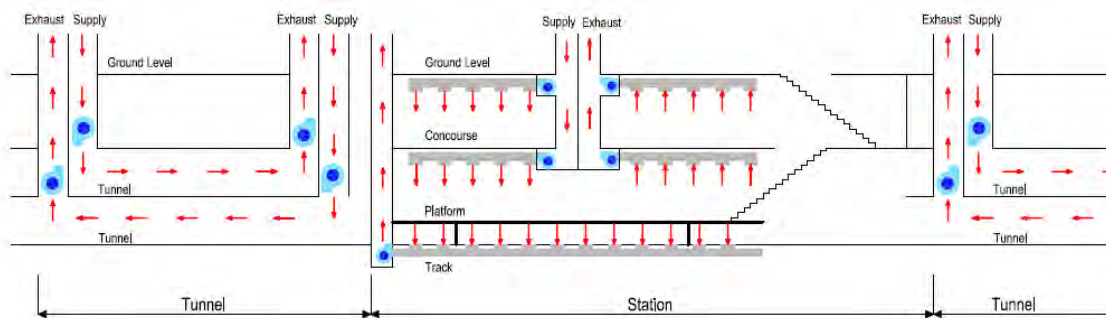
44

17 Ventilation in Case of Fire

Station Ventilation

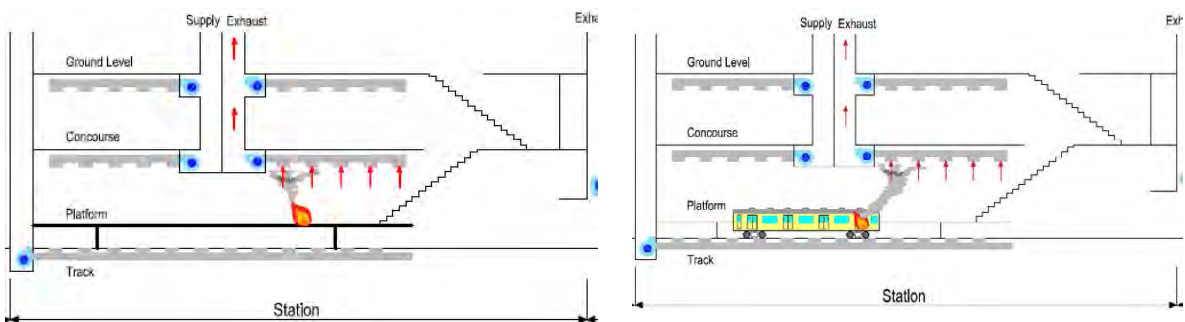
When a fire occurs, ventilation facilities are converted by damper and used for smoke extraction. In HCM metro stations, there are **three independent systems** for the concourse, platform and trainway due to existence of PSDs. Each ventilation system shall meet the capacity requirements for both ventilation and smoke extraction.

Normal Ventilation Operation



45

Smoke Exhaust in Platform



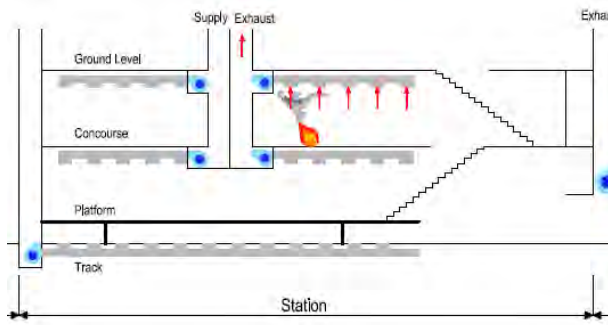
Fire on Platform

Fire by Arson on Train

PSD separates platform and track. In case of fire by arson on train, smoke diffuses to the platform through openings of the PSD and not diffuse to the track. The ventilation system on platform will operate to extract smoke of fire on platform and fire by arson on train.

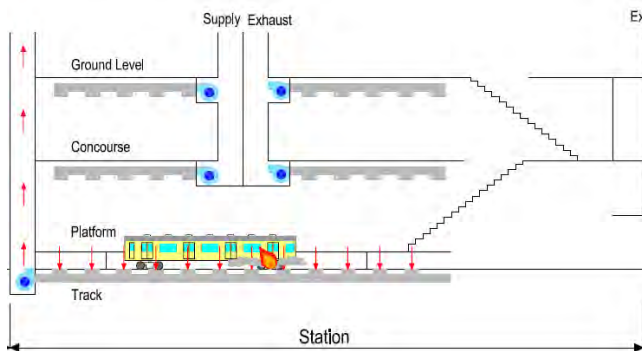
46

Ventilation at Fire in Concourse



Smoke is exhausted by ventilation system in concourse.

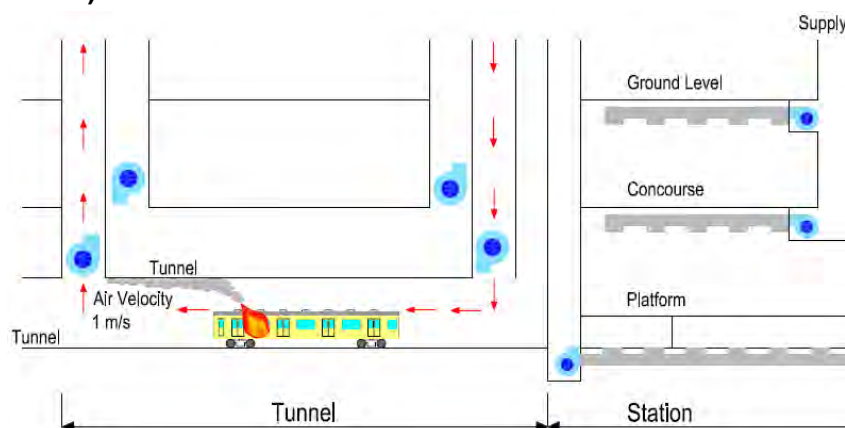
Smoke Exhaust in Station Track (Normal Fire on Rolling Stock)



PSD separates the platform and track. In case of normal fire on train, fire will occur from under-floor motor or other facilities. Due to PSD, smoke diffuse only in track and exhausted by over track ventilation system. It is possible to operate tunnel ventilation system together to help track ventilation.

47

Smoke Exhaust in Tunnel (Fire on Train and Cable Fire etc.)



Ventilation in case of fire in tunnel

Smoke shall be extracted by tunnel ventilation system. In the conventional tunnel ventilation design, air flow of 2.0 m/sec was adopted.

The subway system is basically nonflammable. After review and research, considering the small fire load as compared with the big fire load in road tunnels, many metro operators decided to reduce the design air velocity in tunnel in case of fire .

48

Design air flow velocity in tunnel in case of fire is set at 1.0 m/sec or higher considering the magnitude of train or cable fire .

1.0 m/sec is also a reasonable velocity in terms of saving ventilation cost.



Centrifugal Fan for Tunnel Ventilation

18 Evacuation Guide

Provision of Evacuation Passages (two directions)

At least two independent passageways from platform to the ground level shall be provided. The two evacuation passages shall be separated and not be overlapped

Emergency Lighting on Evacuation Passage

In case of fire accident, there is possibility of power failure. Therefore, emergency power shall be supplied to emergency lighting on evacuation passages. Floor illumination shall be 1 lux or more.

Emergency Lighting in Tunnel

If fire on train or cable fire occurs in tunnel, the basic principle of operation is to drive the train to the next station. However, there is a risk that train stops in tunnel.

Power line for the emergency lighting shall be separated from the power line for train operation. The illumination on the evacuation passage in the tunnel shall be 1 lux or brighter, equal to that for lighting on the evacuation passageways in the station.

Guide Lighting for Exit and Directional Sign in Tunnel

Guide lighting shall indicate the location of exit and direction of evacuation.

In order to identify the location for appropriate evacuation, direction and distance sign board shall be put in tunnel at interval of 100m or less.

Emergency power shall be supplied to evacuation guide system.



Guide Lighting for Exit



Example of Direction and Distance Sign Board

51

19 Smoke/Fire Control

Smoke Exhaust Facilities

Ventilation fans are used as exhaust facilities.

Emergency power shall be supplied to smoke exhaust facilities.

Smoke Curtain

In order to prevent diffusion of smoke, smoke curtains of 50cm or more should be hanged between track and platform and at foot of stair/escalator, depending on structural conditions.

Smoke/Fire Protection Shutter

In order to protect evacuation passage and concourse as safe haven, smoke protection shutter shall be installed between platform and concourse.

Operation of the shutter shall be carried out as mentioned previously.

Emergency power shall be supplied to smoke/fire protection shutters.

.

52



Smoke/Fire Protection Shutter

Fire Protection Compartment



The fire protection compartment (fire protection screen) with a door shall be installed at borders with other lines or underground malls.

The fire protection shutters shall stop automatically on contact with something to prevent an accident. Emergency power shall be supplied to the fire protection compartment.

Fire Protection Compartment (Screen Type) with Door

53

20 Emergency Power Supply

Emergency power is supplied by generator or battery.

In case of emergency, electric power shall be provided to **alarm, illumination, communication, smoke/fire control, fire fighting** and **ventilation** facilities.

There are two types of emergency power generator disposition.

One is to install a generator separately to each station and the other is to install collectively a large power generator in a substation covering some stations.



Emergency Power Generator



Diesel Generator

UPS

In order to supply emergency power to lighting and communication systems until emergency power generator starts up, uninterrupted power supply (UPS) or battery system shall be used.

54

21 Emergency Control Room

The fire protection system is the most important part of the emergency control (disaster prevention) system.

An emergency control room shall be placed in each underground station for:

- **Gathering information,**
- **Giving instructions,**
- **Communication with operation control center, fire department, and other related agencies,**
- **Public address to passengers,**
- **Monitoring and control of fire/smoke protection compartments and other facilities.**

Station staff shall always be placed in the emergency control room during operation hours.

Emergency power shall be supplied to the emergency control room.

55

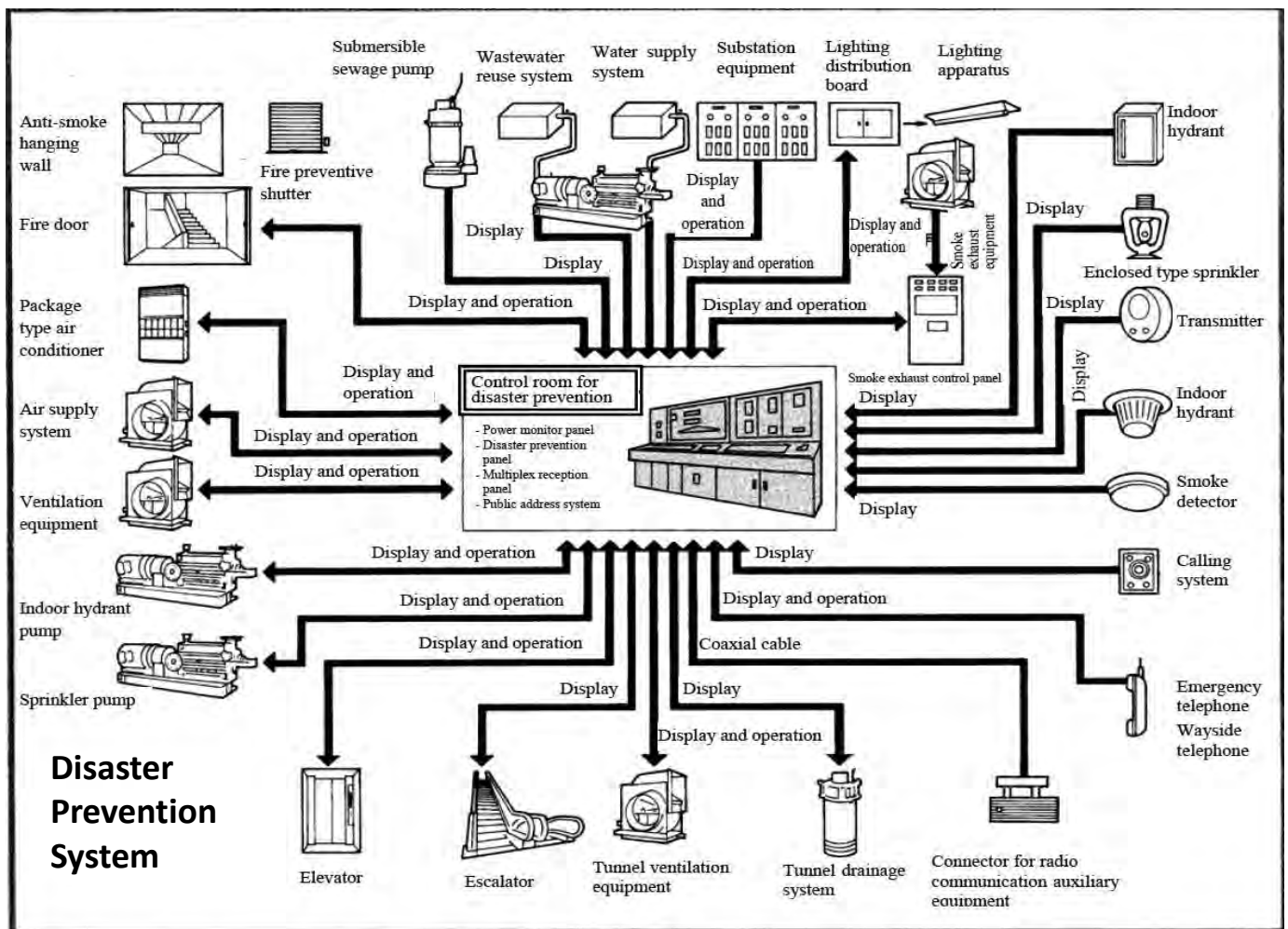
The **main part of the control system** consists of:

- Power monitor panel
- Disaster prevention panel
- Multiple reception panel
- Public address system

The emergency control room is **linked with such facilities for their monitoring and control** as shown in the diagram of the disaster prevention system.

- | | |
|--------------------------------|---------------------------|
| ▪ Water supply system | ▪ Escalator |
| ▪ Lighting system | ▪ Elevator |
| ▪ Smoke exhaust equipment | ▪ Sprinkler pump |
| ▪ Indoor hydrant | ▪ Indoor hydrant pump |
| ▪ Enclosed type sprinkler | ▪ Ventilation equipment |
| ▪ Transmitter | ▪ Air supply system |
| ▪ Smoke detector | ▪ Air conditioner |
| ▪ Emergency telephone | ▪ Fire door |
| ▪ Wayside telephone | ▪ Anti-smoke hanging wall |
| ▪ Radio communication system | ▪ Fire preventive shutter |
| ▪ Tunnel drainage system | ▪ Sewage pump |
| ▪ Tunnel ventilation equipment | ▪ etc. |

56



Emergency Control Room



Disaster Prevention Monitoring Panel



Use of Station Office for Disaster Prevention Control Center

22 Fire Safety Management for Grade/Elevated Station and Depot

Regarding fire protection, underground stations are regulated under the special Law/Regulations “**the Standard of Fire Safety Management for Subway Station of MLIT**”.

But the fire safety management of stations at grade and elevated sections and depots are regulated under the **Fire Service Law** in Japan.

On the other hand, as there are **Vietnamese regulations** for ground level structures, priorities shall be given to them. So that **details of facilities and measures shall be adjusted** in consultation with the Fire Department of Ho Chi Minh City.



59



Depot and Its Buildings

60

Automatic Fire Alarm (Fire Detector)

AFA shall generally be installed to the floor with a total area larger than 500m². For the floors listed below, if the floor area is larger than 300m², AFA shall be installed.

- Basement floor
- Floor without window
- Floors located at higher than or equal to 11th story

Emergency Facilities

Emergency facilities shall be installed under the conditions specified individually in the **Fire Service Law** in terms of place, height, number of persons accommodated, area, etc.

Emergency Alarm System

- Handy loud speaker, Handy siren, etc. (Depot only)
- Emergency bell, Emergency siren or Public Address
- Fire notification system to Fire Department and Telecommunication system

61

Evacuation Guide

- Evacuation facilities (Ladder, etc.)
- Evacuation passageways to ground level
- Emergency lighting
- Emergency guide lighting for exit and Direction sign board

Fire Fighting Facilities

- Fire extinguisher
- Indoor fire hydrant
- Outdoor fire hydrant
- Sprinkler (pumped through water pipe and Siamese connection to fire engine)
- Inert gas, Halon and Chemical extinguisher
- Indoor hydrant, Water pipe and Siamese connection for Fire Department
- Water source and Water tank

Smoke Control

- Smoke exhaust facilities
- Smoke curtain

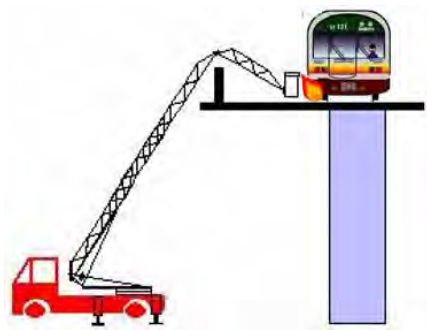
62

Emergency Control Room and Emergency Control Panel

Fire Engine with High Ladder for the Elevated Section

Water for fire fighting will be supplied by a fire engine at grade.

Discussion shall be made with the Fire Department of Ho Chi Minh City about available fire engines and water sources along elevated sections.



Fire Engine with High Ladder for the Elevated Section

63

Thank you for your serious attention

64



HO CHI MINH CITY URBAN RAILWAYS CONSTRUCTION
PROJECT BEN THANH – SUOI TIEN (LINE 1)

TYPE A – THAO DIEN STATION

PCCC STRATEGY REPORT



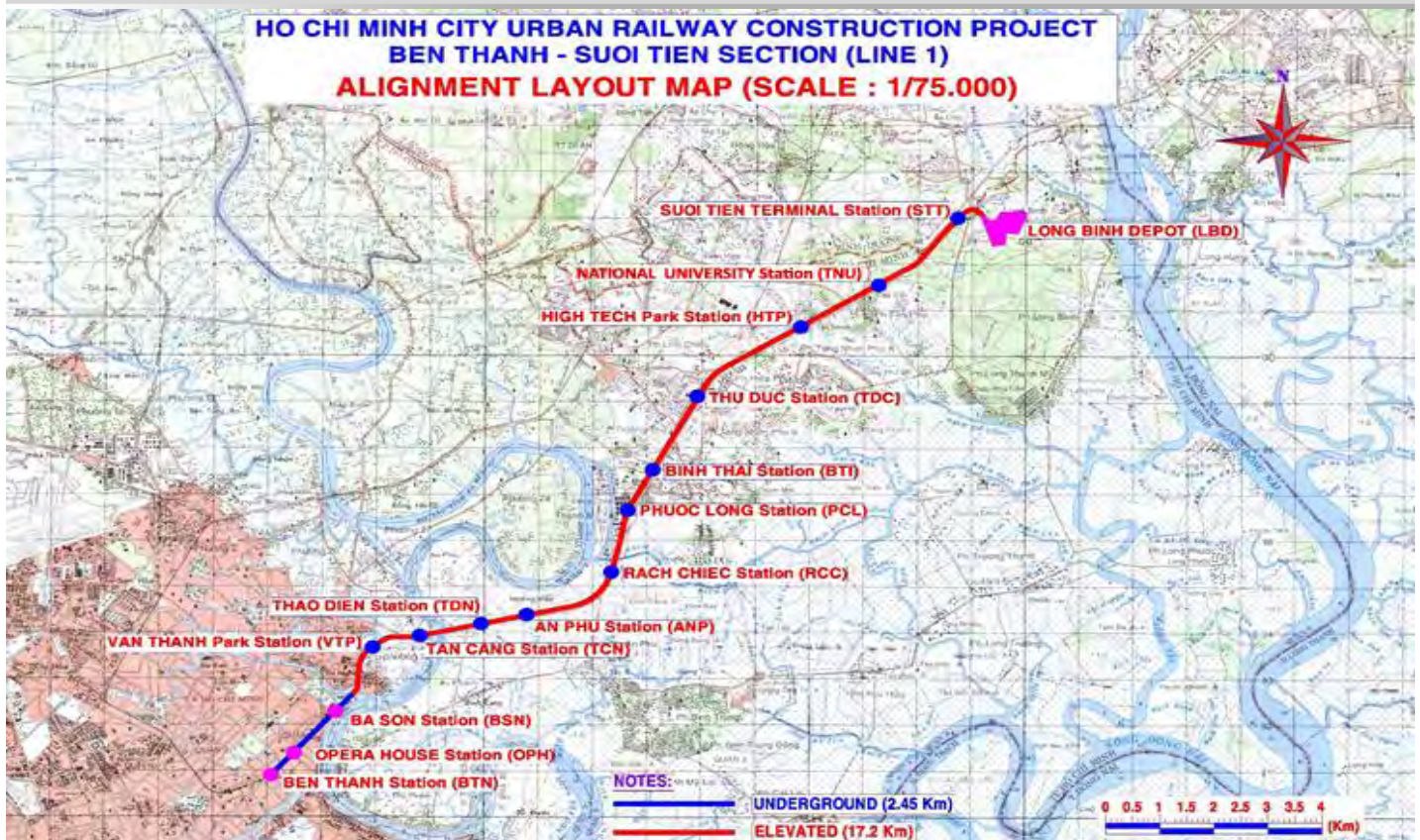
SYSTRA

CONTENT



1. TYPE A STATION INTRODUCTION
2. REGULATORY FRAMEWORK
3. STATION LAYOUTS
4. FIRE SAFETY STRATEGY
5. PCCC APPRAISAL STATUS

TYPE A STATION INTRODUCTION



Page 3

All the elevated stations are located along the Hanoi Highway. They will create an urban rhythm as repeatable buildings (for people driving cars and motorbikes) and as repeatable elements of the building (for pedestrians)

TYPE A STATION INTRODUCTION



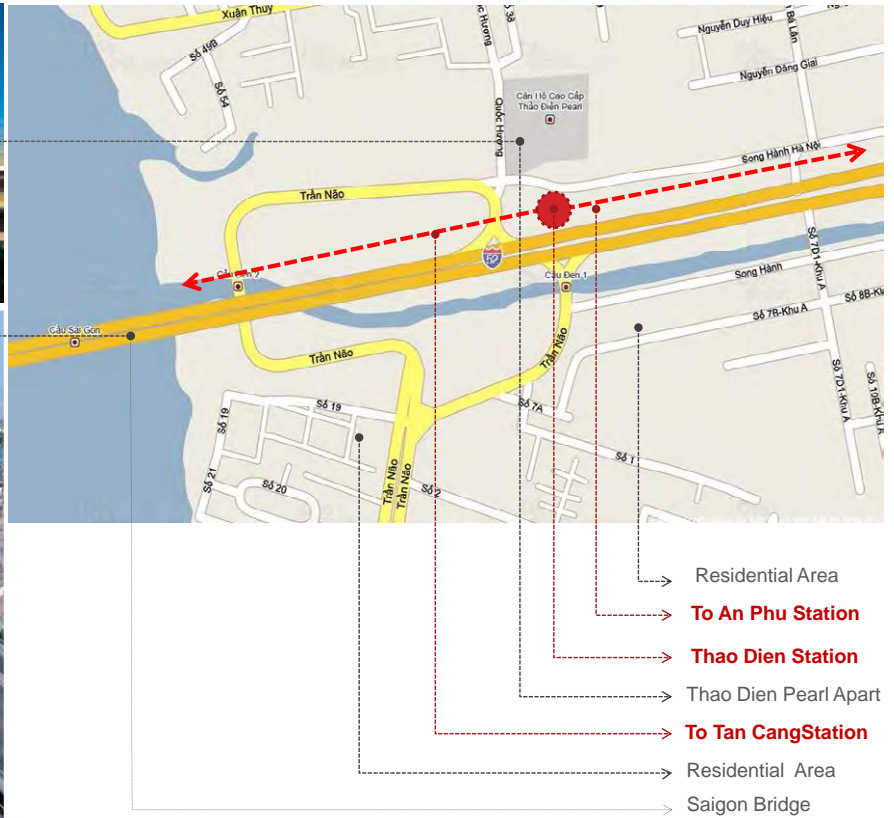
TYPE A STATIONS:

All the elevated stations are located along the Hanoi Highway. There are 4 types: A, B, C, D. Type A contains 8 stations, in which Thao Dien is the pilot and typical station to design the remaining.

1. VAN THANH PARK
- 2. THAO DIEN**
3. RACH CHIEC
4. PHUOC LONG
5. BINH THAI
6. THU DUC
7. HIGH TECH PARK
8. NATIONAL UNIVERSITY

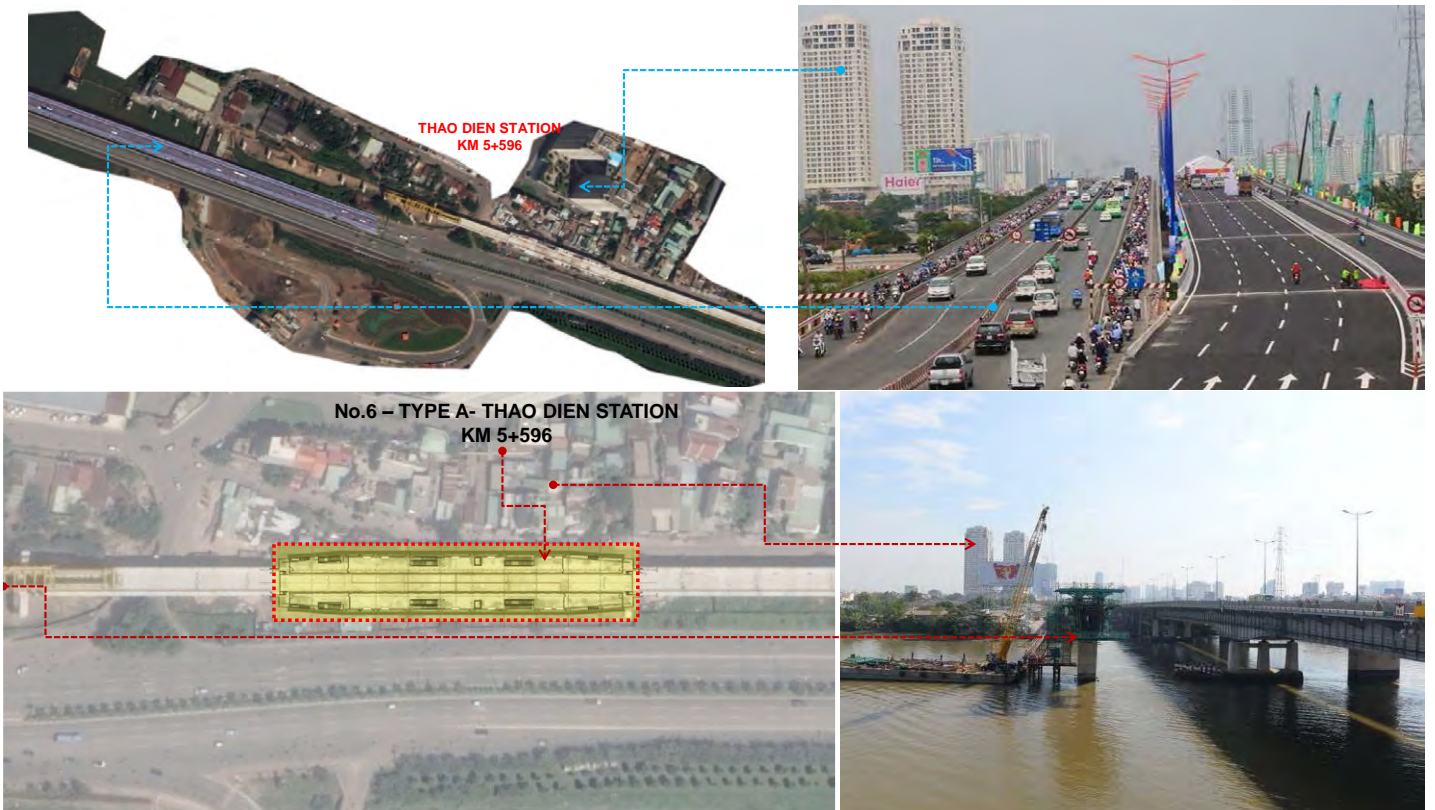
Page 4

SITE OVERVIEW



Page 5

SITE OVERVIEW



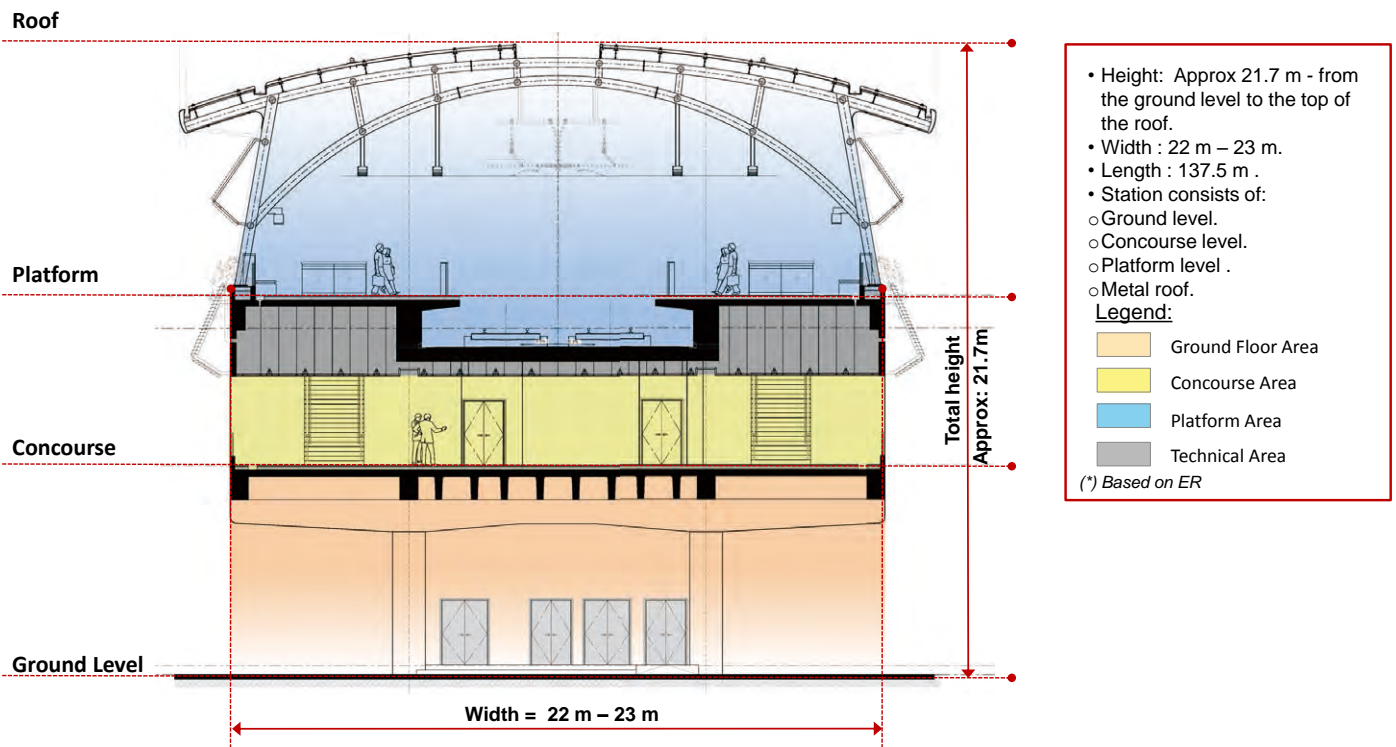
Page 6

URBAN CONTEXT & EXISTING ENVIRONMENT

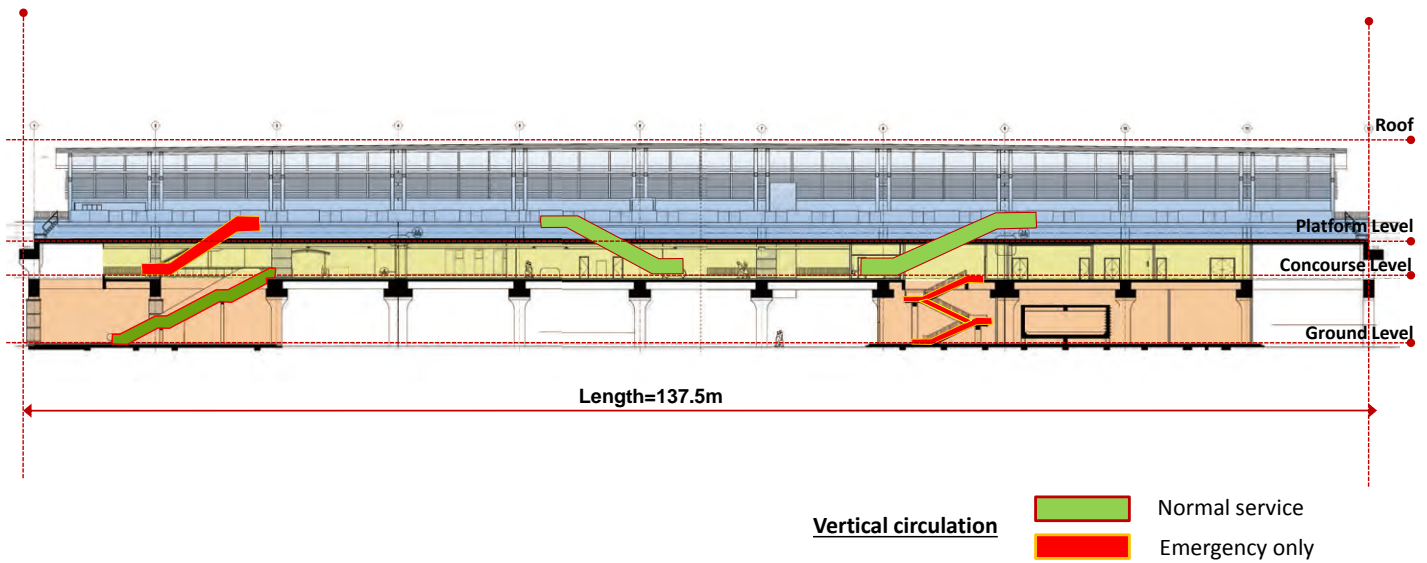


STATION DESIGN INTRODUCTION

STATION DESIGN INTRODUCTION

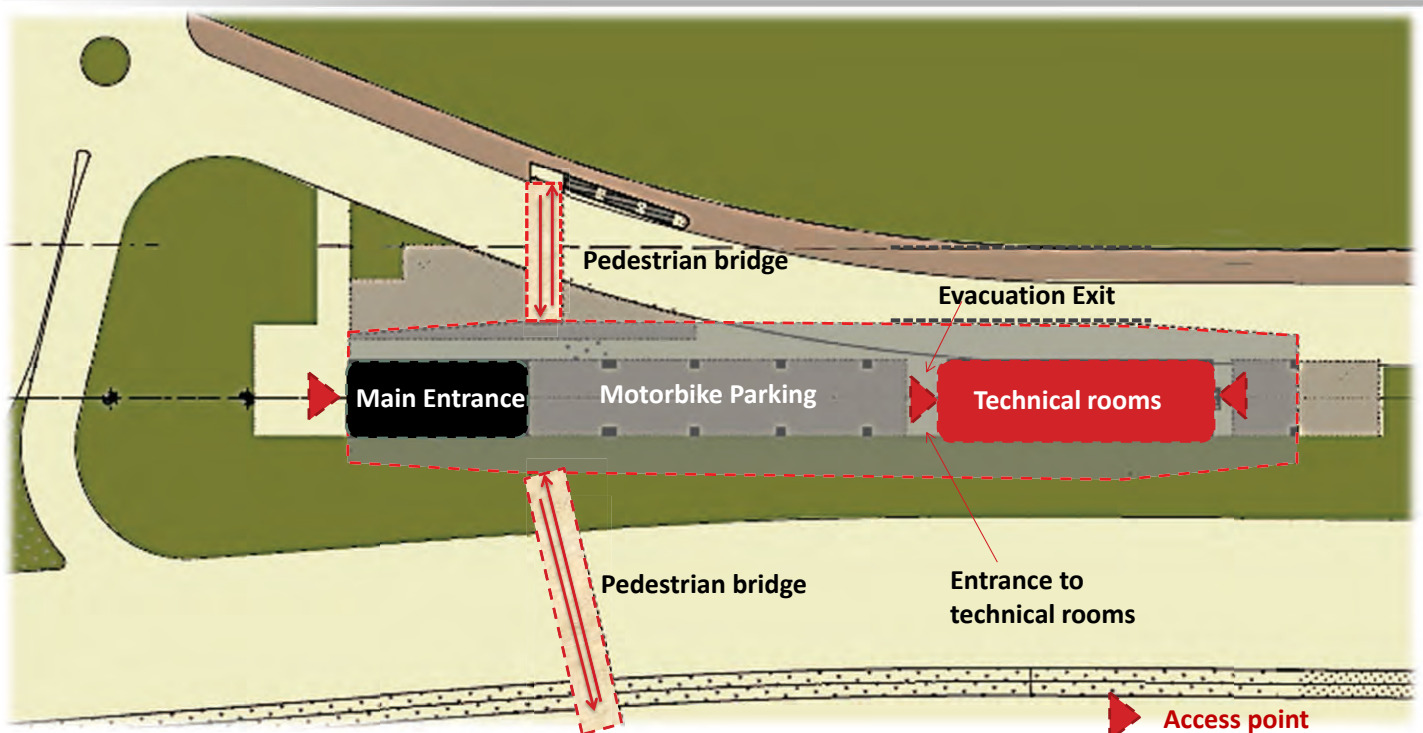


STATION DESIGN INTRODUCTION



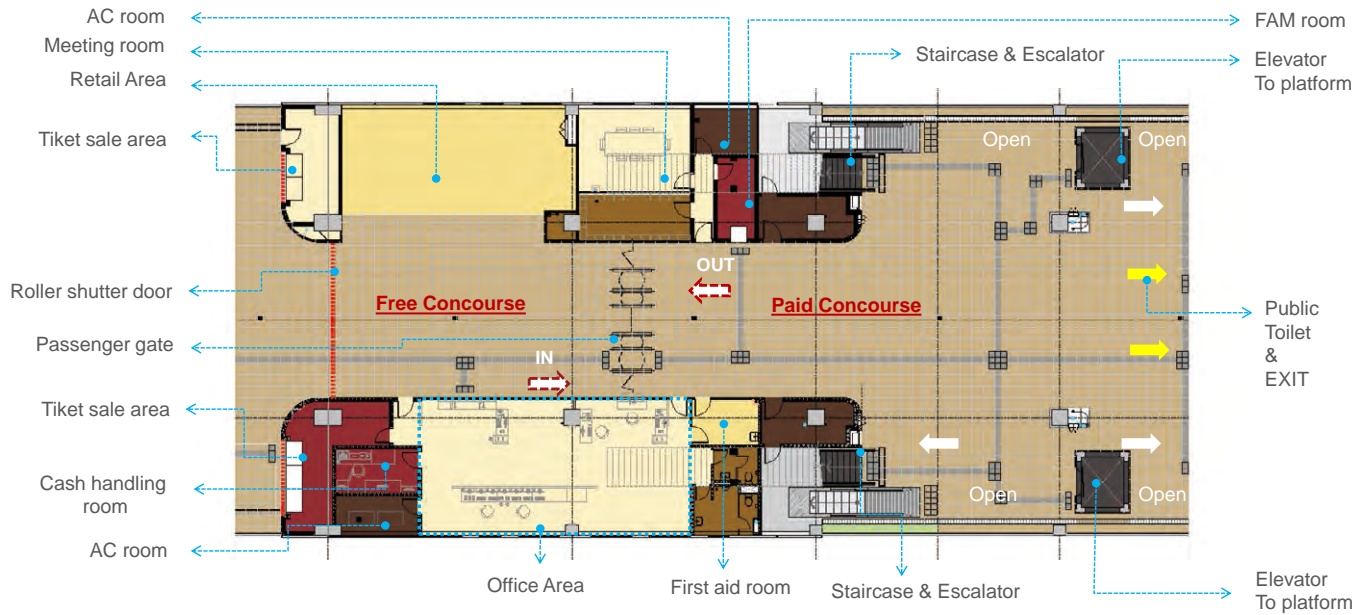
- Station is designed to provide access for pedestrians from the main entrance at the ground level and pedestrian bridges connected from both sides of concourse level.
- Passengers circulate on the ground level, concourse, and platform. They have access from level to level through vertical passages (staircases, escalators, elevators)
- Vertical circulation is guaranteed to meet VN regulation QCVN 06:2010.

STATION DESIGN INTRODUCTION



There is the main entrance equipped with stairs, escalator, elevator, technical areas and parking for motorbikes at the ground floor level .

STATION DESIGN INTRODUCTION

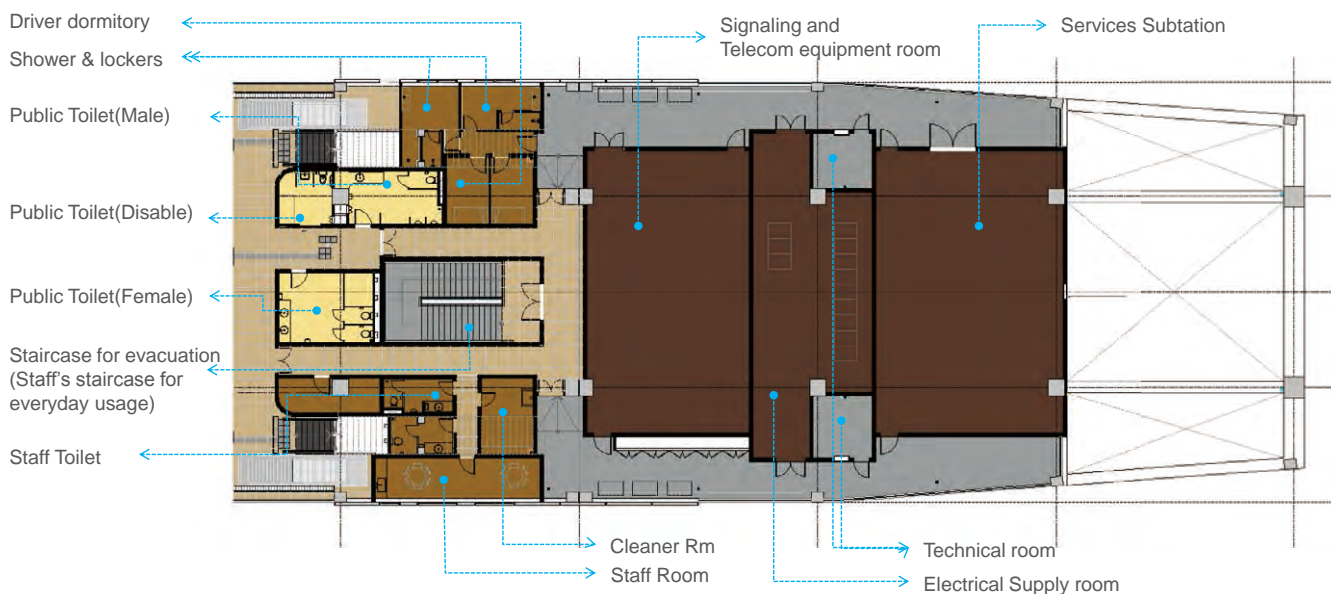


The central part of the station gives space for a wide corridor to access paid concourse area. Ticket controlling gates separate free and paid zones of the concourse. There is the retail area, store area and office area.

- | | |
|--|---|
| Public services | Secured rooms |
| Public circulation area | Technical rooms |
| Vertical circulation | Operation rooms |
| Guiding block | Staff rooms |

CONCOURSE FLOOR – CENTRAL ZONE

STATION DESIGN INTRODUCTION

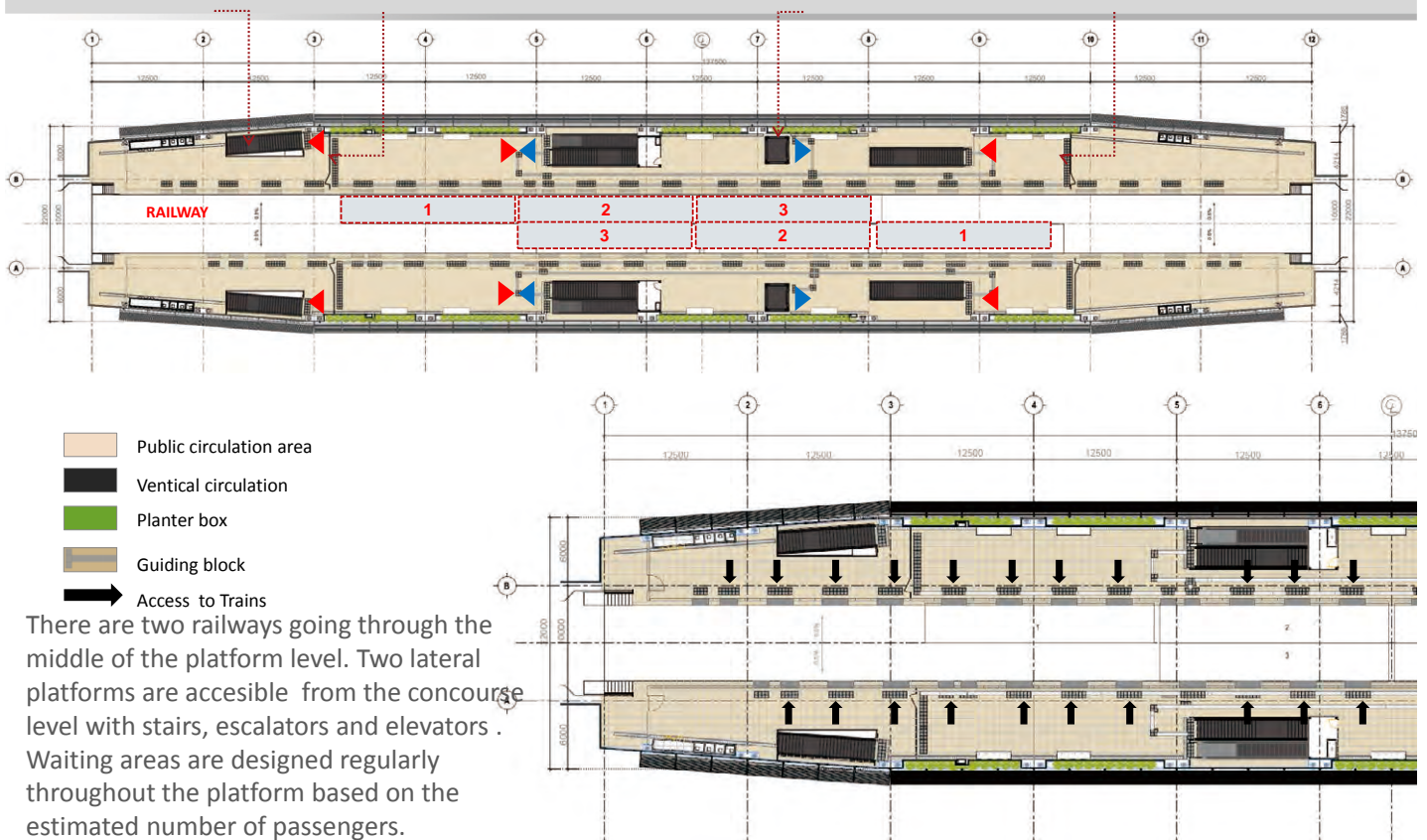


At the Eastern zone there is a technical zone for equipment, substation, toilets and technical areas for the station (substation, signaling and telecom rooms belonging to CP3.)

- | | |
|--|---|
| Public services | Secured rooms |
| Public circulation area | Technical rooms |
| Vertical circulation | Operation rooms |
| Guiding block | Staff rooms |

CONCOURSE FLOOR LEVEL – EASTERN ZONE

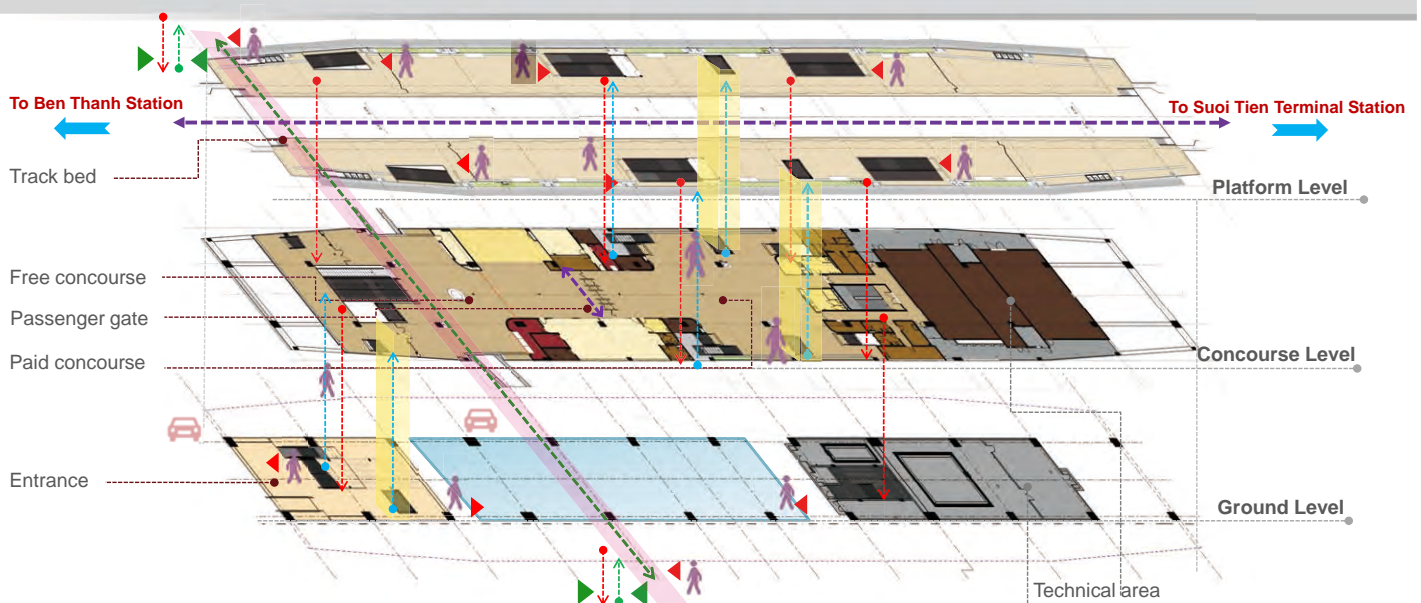
STATION DESIGN INTRODUCTION



Page 15

PLATFORM FLOOR

STATION DESIGN INTRODUCTION



- Service access
- Main entrance
- Access from pedestrian bridge
- Evacuation way
- Normal circulation
- Evacuation circulation

- Station is designed to provide access for pedestrians from the main entrance at the ground level and pedestrian bridges connected from both sides of concourse level.
- Passengers circulate on the ground level, concourse, and platform. They have access from level to level through vertical passages (staircases, escalators, elevators)
- Vertical circulation is guaranteed to meet VN regulation QCVN 06:2010.

Legend:

- | | |
|-------------------------|-----------------|
| Public services | Secured rooms |
| Public circulation area | Technical rooms |
| Vertical circulation | Operation rooms |
| Guiding block | Staff rooms |
| Parking area | Planter boxes |

Page 16

SPACE DIAGRAM, ZONE AND CIRCULATION



REGULATORY FRAMEWORK

Page 17

REGULATORY FRAMEWORK



- **Code in use for PCCC:**

- Mainly QCVN 06-2010: This Code prescribes general requirements for fire safety to rooms, houses and construction projects (hereinafter after called as buildings) and is mandatory in all phases of construction, renovation, repair or change on functions, and technical classifications for the fire to buildings, parts thereof, rooms, building structures and construction materials.
- QCVN 06-2010 is not specific to Metro Railway project and does not specify any particular requirements for Railway stations.
- QCVN 06-2010 is referred in terms of exit traffic flows, dimension of emergency exits, requirements on fire rate/material, distance to safe point, etc....

- **NFPA130 not applicable for this Project.**

Page 18



Station is classified to be designed:

- RC structure design life: 100 years
- Steel roof design life: 50 years
- Project level: 1
- Fire rate: I & II

For emergency evacuation principles, following assumptions were adopted:

- Occupancy load (density of passengers): 1 person / m²
- Capacity of stairs: 165 persons / linear meter width of stair
- Maximum distance from any point to exit: 30m in case of single exits / 110m between two exit points



Items	FLOW	EXIT	APPROVAL	TOTAL REQUIRED WIDTH (*)	STATION DESIGN	TOTAL DESIGNED WIDTH	REMARK
Staircase width	PL to CL	ST03	min 1.5m	9.5m	2m	12m	
		ST04	min 1.5m		2m		
		ST05	min 1.5m		2m		
		ST06	min 1.5m		2m		
		ST07	min 1.5m		2m		
		ST08	min 1.5m		2m		
	CL to GL	ST01	min 1.5m	6.7m	4m	12m	
		ST02	min 1.5m		2m		
		P. Bridge	N/A		3m x 2		
Max distance to safe point	On plan		30m		30m		1 exit
			55m		48.3m		2 exits

(*): Total required width = Area for fire resistance / Linear meters of exit stairs (165 people/m)

Platform: 1,559m² + 2staff (1m²/person) / 165 = 9.5m

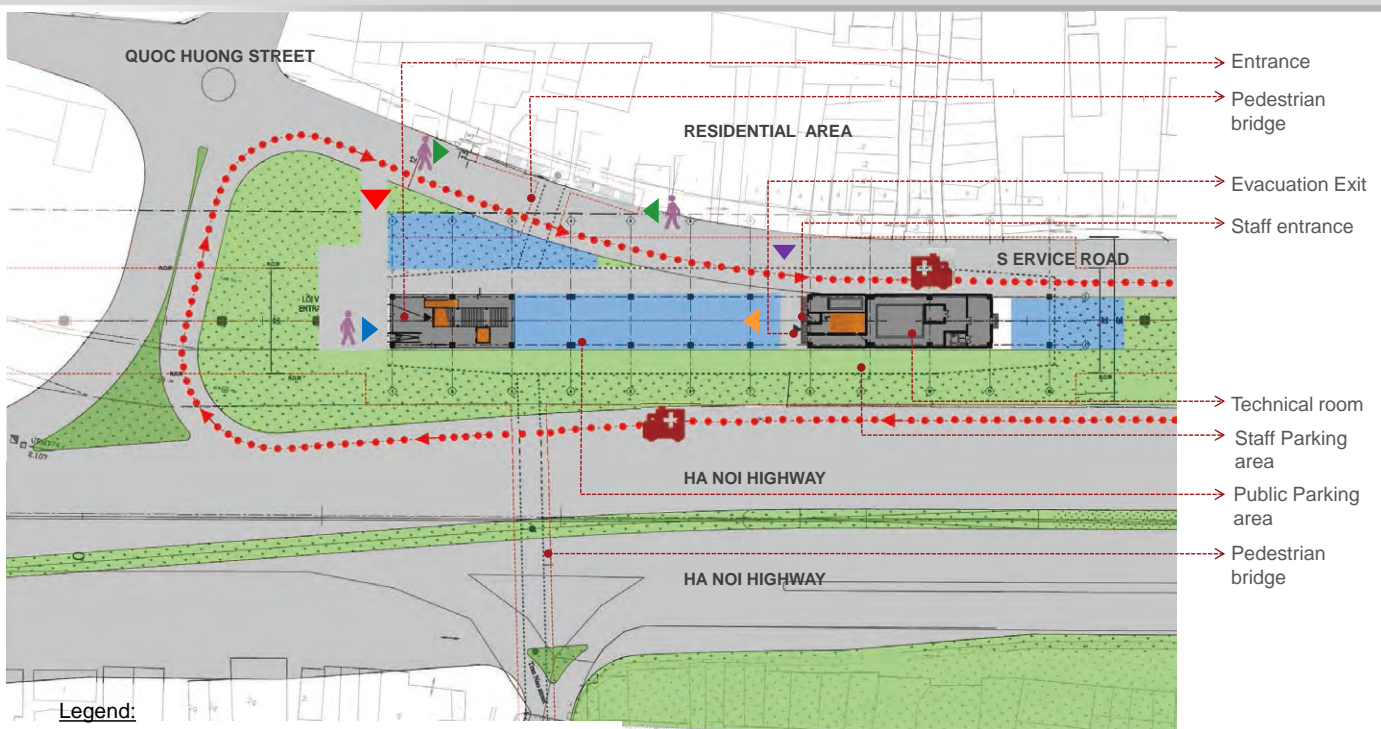
Concourse: 1,097m² + 10staff (1m²/person) / 165 = 6.7m



STATION LAYOUT

Page 21

STATION LAYOUT

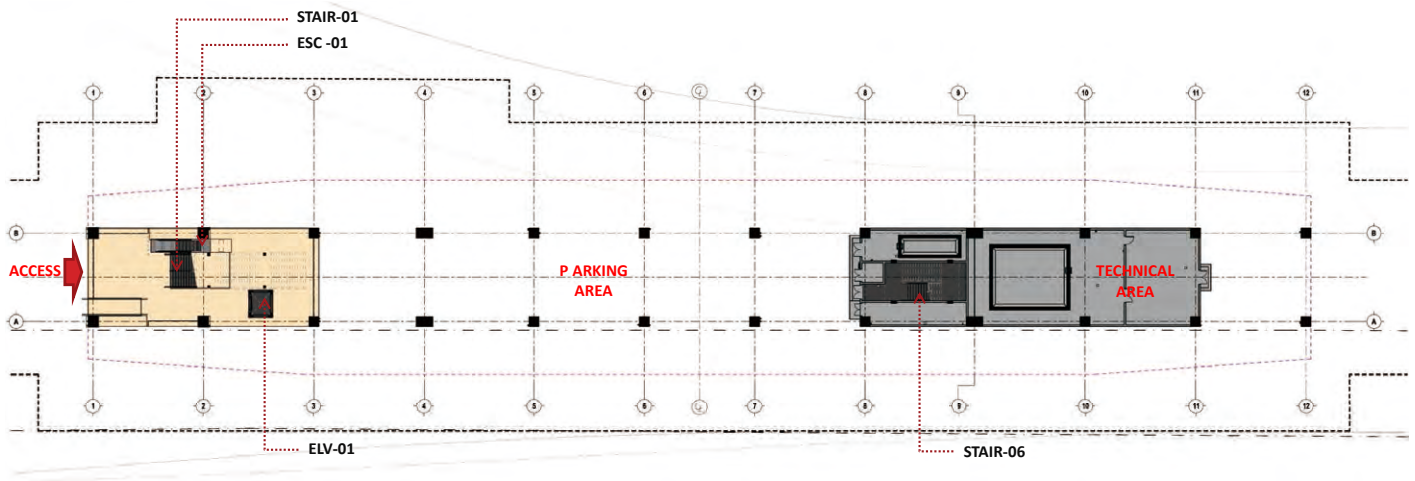


Landscape will be done by others and this is an image for representation only.

Page 22

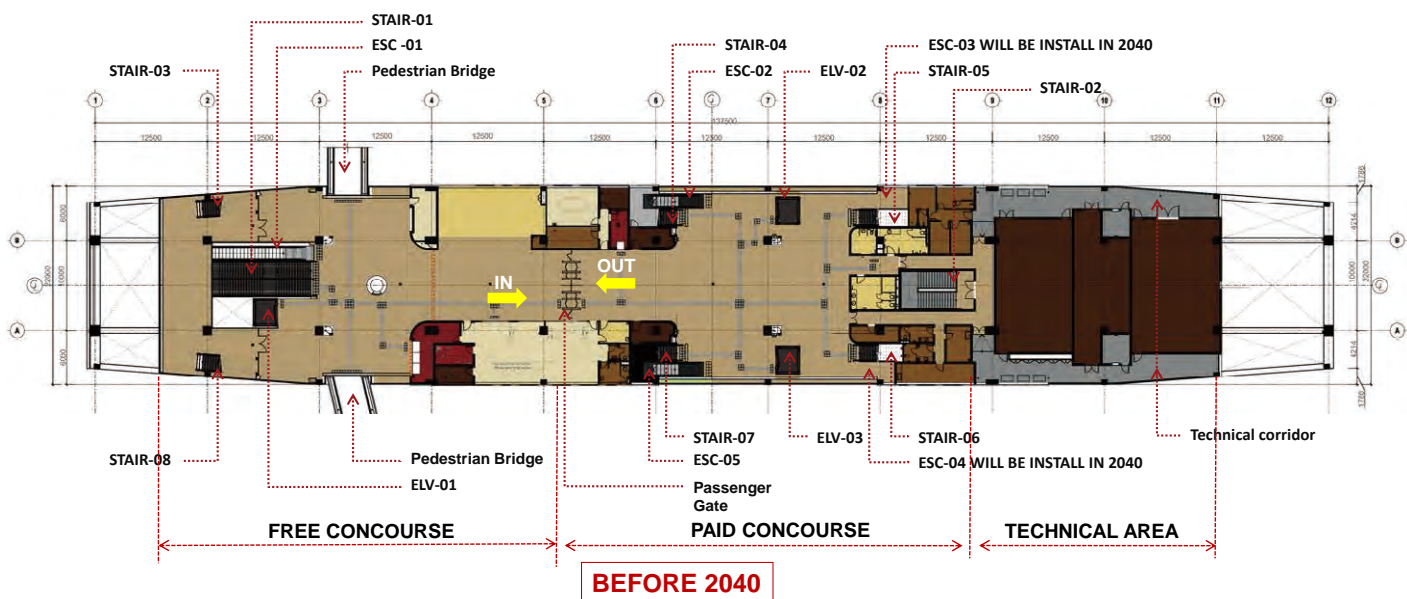
MASTER PLAN

STATION LAYOUT



- Entrance
- Vertical circulation
- Technical Area

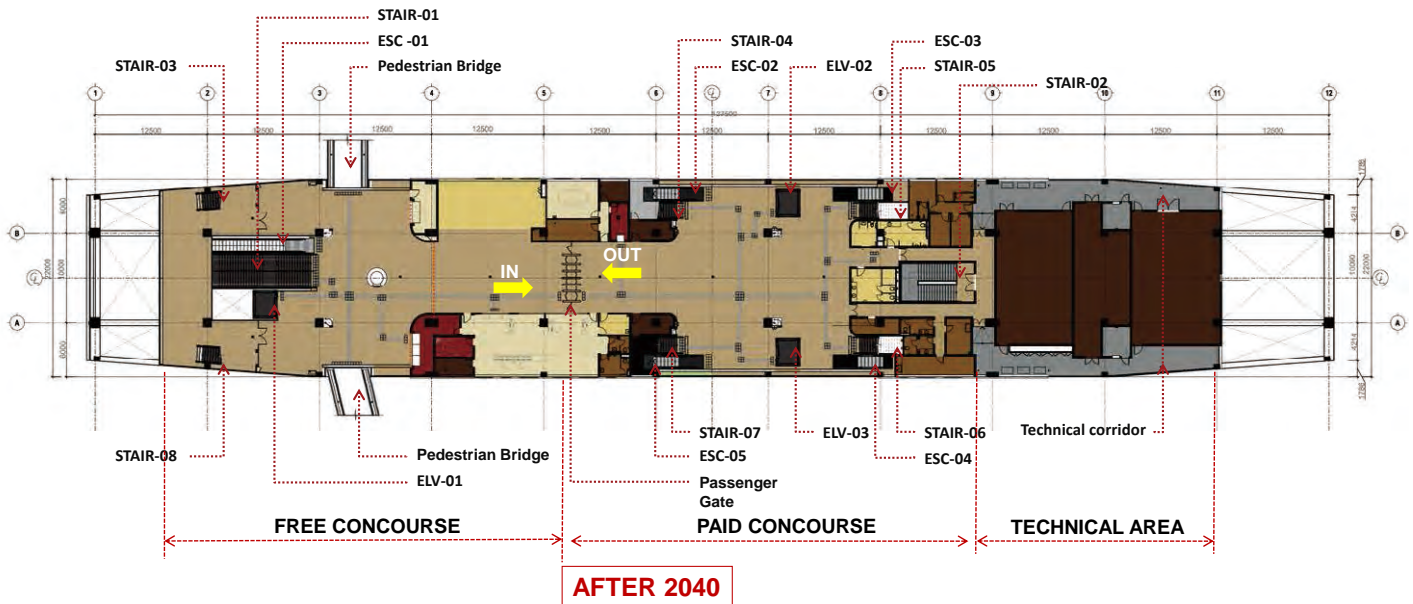
STATION LAYOUT



- Area for fire resistance: **1,097m²**
- Station staff: (2040): **10**
- Necessary total width of emergency staircase: **6.7m**
- Emergency exits width (CL to GL): ST1 – 4m, ST2 – 2m, Pedestrian bridges – 3m each. Total width of emergency exits width: **12m**
- ST03, ST08 not used at this stage

- Public services
- Public circulation area
- Vertical circulation
- Guiding block
- Secured rooms
- Technical rooms
- Operation rooms
- Staff rooms

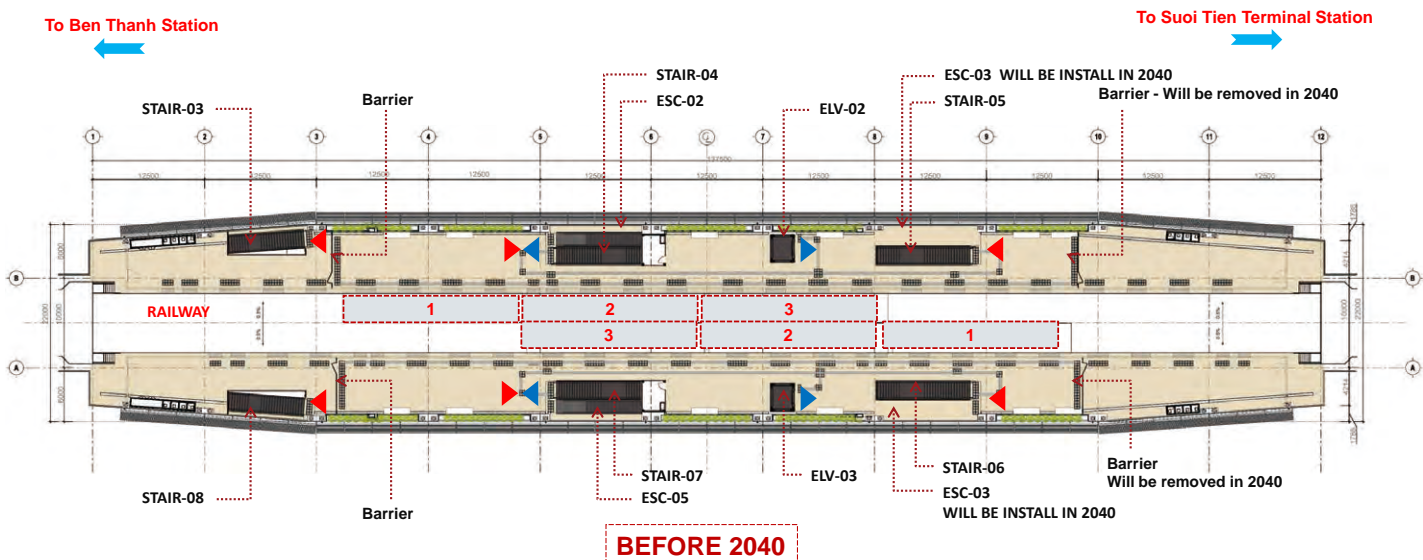
STATION LAYOUT



- Additional escalators ESC03, 04.
- ST03, ST08 only used at emergency case.

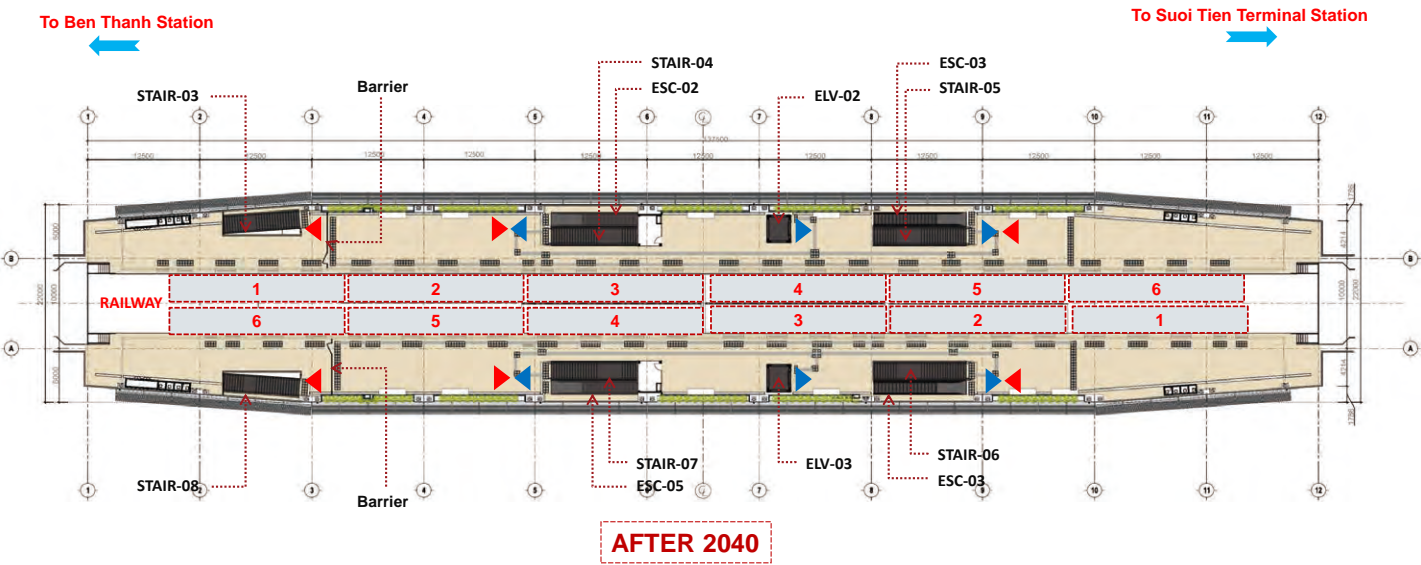
	Public services		Secured rooms
	Public circulation area		Technical rooms
	Vertical circulation		Operation rooms
	Guiding block		Staff rooms

STATION LAYOUT



- Area for fire resistance: 1,559m²
- Number of staff: (2040): 2
- Necessary total width of emergency staircase: 9.5m
- 06 staircases to be used in this stage: ST3, 4, 5, 6, 7, 8 (PL to CL): total width is 12m.

	Public circulation area
	Vertical circulation
	Planter box
	Guiding block
	Access to Trains



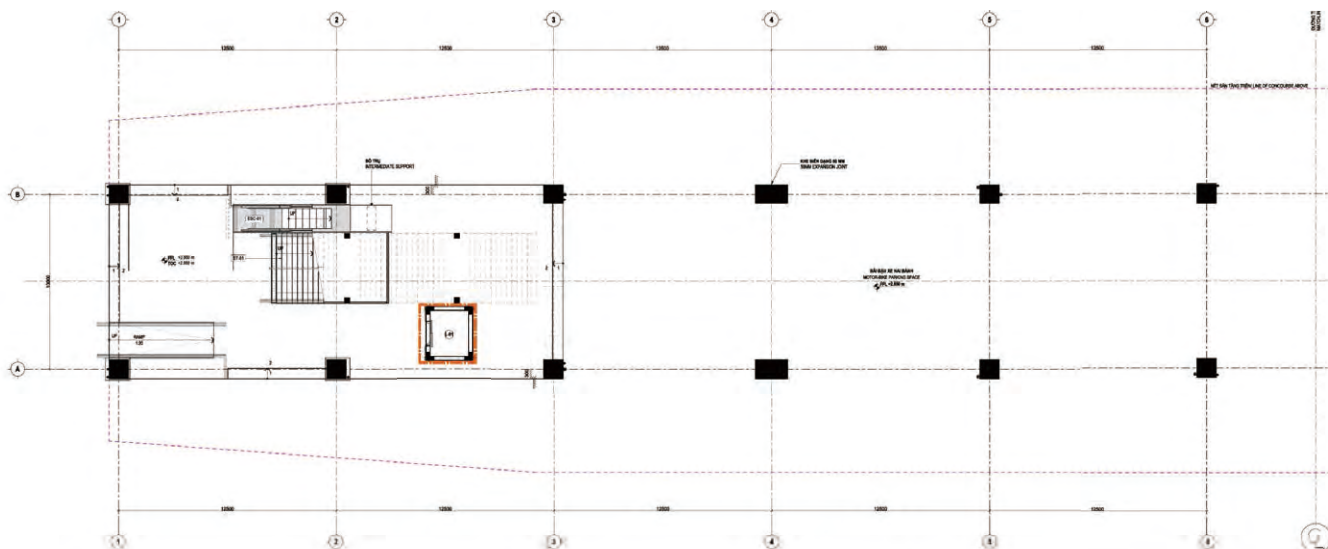
- The barriers at Eastern zone will be unblocked in 2040.
- The barriers at Western zone shall only be opened in case of emergency.

	Public circulation area
	Vertical circulation
	Planter box
	Guiding block
	Access to Trains



EVACUATION AND FIRE SAFETY

FIRE SAFETY STRATEGY – GL EVACUATION



GHI CHÚ/ NOTE:

CÁC BẢN VẼ KẾT HỢP CÙNG VỚI CÁC BẢN VẼ THƯỜNG CHẤY CHỮA CHÁY

DRAWINGS TO BE READ IN CONJUNCTION WITH FIRE PROTECTION & FIRE DETECTION PACKAGES.

CỬA BI & CỬA BỎ GẮN TRONG TƯỜNG CHU LỬA CÓ ĐỘ CHỐNG CHÁY BẰNG 1/2 TƯỜNG CHỐNG CHÁY

DOORS & WINDOWS IN FIRE WALLS TO EQUAL HALF OF THE WALLS FIRE RATING.

TẮT CẢ CÁC TƯỜNG & BÀN XUYÊN QUA CÁC KHOẢNG CHÁY ĐƯỢC BỊ KÍN BẰNG VẬT LIỆU CHU LỬA

ALL WALL & FLOOR PENETRATIONS THROUGH FIRE COMPARTMENTS TO BE SEALED WITH FIRE RETARDANT MATERIAL.

KHOẢNG THANG BỎ & THANG THOÁT HIỂM ĐƯỢC

APPLIED THEO QCVN 06:2019

STAIR WIDTHS AND EMERGENCY ESCAPE DISTANCES ARE IN ACCORDANCE WITH QCVN 06:2019.

CÔNG TÁC SÁT CỦA BÊ ĐÓ ĐƯỢC BƠM, BĂNG SƠN CHỤNH NHỆT & CÓ

ĐỘ CHU LỬA LA 15 PHÚT

STEEL WORK ON PLATFORM TO HAVE 15 MINS FIRE RATING WITH INTUMESCENT PAINT.

TƯỜNG GẠCH BÊ TÔNG ĐƯỢC ĐÁY NHANH CỎ LỘP HOÀN THIỆN

100MM BLOCK WALLS TO HAVE 20MM HARD WALL RENDER BOTH SIDES.

TƯỜNG GẠCH BÊ TÔNG ĐƯỢC ĐÁY NHANH CỎ LỘP HOÀN THIỆN

20MM ĐÁY 20MM Ở 2 BÊN

20MM BLOCK WALLS TO HAVE 20MM HARD WALL RENDER BOTH SIDES.

CỬA BI PHẢI THOÁT HIỂM TỰ ĐỘNG MỞ KHI CÓ CHỖNG BẢO CHÁY

DOOR TO REAR EMERGENCY EXIT TO AUTOMATICALLY OPEN IN EVENT OF ALARM.

KHOẢNG VÙNG NGUY CHÁY ĐƯỢC DỰA THEO QCVN 06:2019

FIRE STRATEGY TO COMPLY WITH QCVN 06:2019.

QUẠCH BẢNG DƯỠNG CHO NGƯỜI THỰC LỰC KÈM ĐƯỢC CHỈ ĐỊNH

TRONG BẢN VẼ HOÀN THIỆN BÀN

VISUALLY IMPAIRED WAYFINDING TILES SHOWN ON FLOOR FINISHES DRAWING.

VẬT LIỆU CHỐNG CHÁY BÊ ĐƯỢC SỬ DỤNG XUYẾN BUỐT KH BẬY ĐƯỢC

MỨC CHỐNG CHÁY CAO NHẤT CỦA CẤP ĐỘ 1

NON COMBUSTIBLE MATERIALS WILL BE USED THROUGHOUT TO ACHIEVE MAXIMUM CLASS 1 GRADE FIRE RATING.

CHỈ SỐ BẢNG KHẨM CẤP CHỈ LA TƯƠNG ĐỐI THÔNG SỐ CHỈNH XÁC BÊ ĐƯỢC

XÁC ĐỊNH KHI ĐÓ BẢNG TÍNH TOÁN ĐƯỢC CHỈ ĐỊNH (MÀ NHẤT LA 2 LUX)

EMERGENCY LIGHTING INDICATIVELY APPLIED. ACTUAL NUMBER TO BE DETERMINED ONCE CALCULATION IS UNDERTAKEN TO CONFIRM 2 LUX IS ACHIEVED

BẢN VẼ ĐƯỢC ĐỌC KẾT HỢP VỚI BẢNG THÔNG KẾT TÊN PHÒNG, BẢN VẼ SỐ

CPD-CSA-PT-5TH-43988

DRAWING TO BE READ IN CONJUNCTION WITH ROOM SCHEDULE DWG NO. CPD-CSA-PT-5TH-43988

CHÚ THÍCH/ LEGEND:

(CHỈ M)

→

→

→

→

→

→

→

→

→

→

→

KHOẢNG CÁCH & HƯỚNG THOÁT HIỂM (MÉT)

ESCAPE DIRECTION & DISTANCE (M)

CHỐNG CHÁY 60 PHÚT

60 MINS. FIRE RATING

CHỐNG CHÁY 150 PHÚT

150 MINS. FIRE RATING

CỬA BI CHỐNG CHÁY 45 PHÚT

45 MINS. FIRE DOOR

CỬA BI CHỐNG CHÁY 75 PHÚT

75 MINS. FIRE DOOR

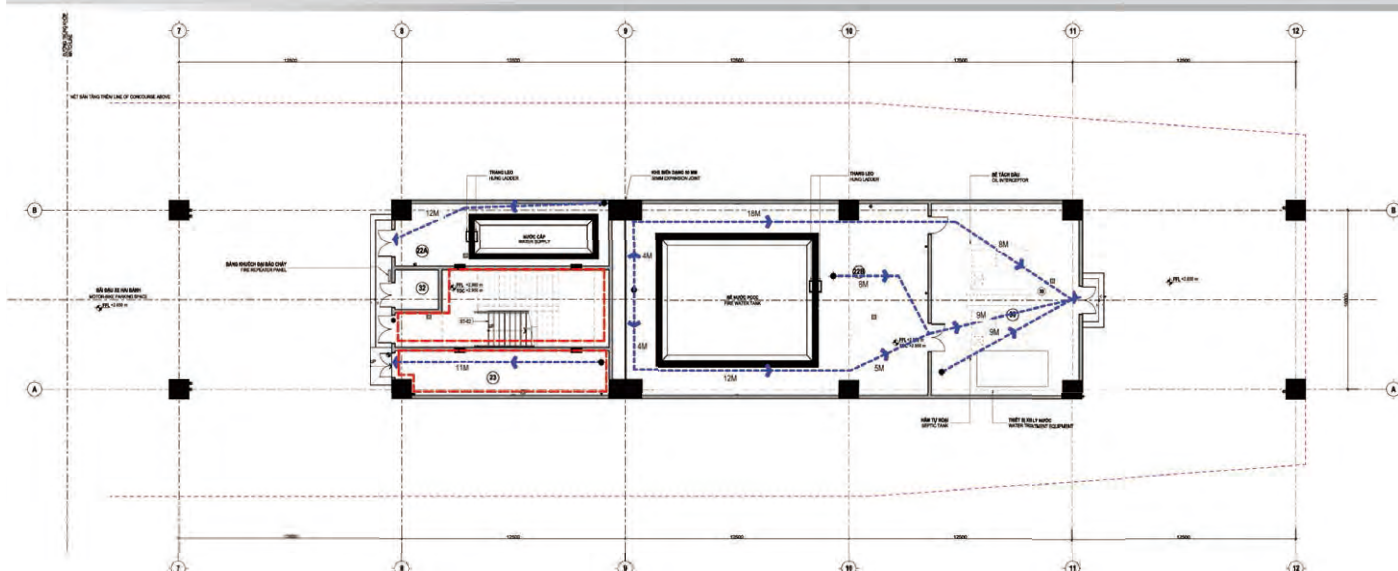
CỬA BI CHỐNG CHÁY 120 PHÚT

120 MINS. FIRE DOOR

OPENABLE IN EMERGENCY

MỞ KHI KHẨM CẤP

FIRE SAFETY STRATEGY – GL EVACUATION



GHI CHÚ/ NOTE:

CÁC BẢN VẼ KẾT HỢP CÙNG VỚI CÁC BẢN VẼ THƯỜNG CHẤY CHỮA CHÁY

DRAWINGS TO BE READ IN CONJUNCTION WITH FIRE PROTECTION & FIRE DETECTION PACKAGES.

CỬA BI & CỬA BỎ GẮN TRONG TƯỜNG CHU LỬA CÓ ĐỘ CHỐNG CHÁY BẰNG 1/2 TƯỜNG CHỐNG CHÁY

DOORS & WINDOWS IN FIRE WALLS TO EQUAL HALF OF THE WALLS FIRE RATING.

TẮT CẢ CÁC TƯỜNG & BÀN XUYÊN QUA CÁC KHOẢNG CHÁY ĐƯỢC BỊ KÍN BẰNG VẬT LIỆU CHU LỬA

ALL WALL & FLOOR PENETRATIONS THROUGH FIRE COMPARTMENTS TO BE SEALED WITH FIRE RETARDANT MATERIAL.

KHOẢNG THANG BỎ & THANG THOÁT HIỂM ĐƯỢC

APPLIED THEO QCVN 06:2019

STAIR WIDTHS AND EMERGENCY ESCAPE DISTANCES ARE IN ACCORDANCE WITH QCVN 06:2019.

CÔNG TÁC SÁT CỦA BÊ ĐÓ ĐƯỢC BƠM, BĂNG SƠN CHỤNH NHỆT & CÓ

ĐỘ CHU LỬA LA 15 PHÚT

STEEL WORK ON PLATFORM TO HAVE 15 MINS FIRE RATING WITH INTUMESCENT PAINT.

TƯỜNG GẠCH BÊ TÔNG ĐƯỢC ĐÁY NHANH CỎ LỘP HOÀN THIỆN

100MM BLOCK WALLS TO HAVE 20MM HARD WALL RENDER BOTH SIDES.

TƯỜNG GẠCH BÊ TÔNG ĐƯỢC ĐÁY NHANH CỎ LỘP HOÀN THIỆN

20MM ĐÁY 20MM Ở 2 BÊN

20MM BLOCK WALLS TO HAVE 20MM HARD WALL RENDER BOTH SIDES.

CỬA BI PHẢI THOÁT HIỂM TỰ ĐỘNG MỞ KHI CÓ CHỖNG BẢO CHÁY

DOOR TO REAR EMERGENCY EXIT TO AUTOMATICALLY OPEN IN EVENT OF ALARM.

KHOẢNG VÙNG NGUY CHÁY ĐƯỢC DỰA THEO QCVN 06:2019

FIRE STRATEGY TO COMPLY WITH QCVN 06:2019.

QUẠCH BẢNG DƯỠNG CHO NGƯỜI THỰC LỰC KÈM ĐƯỢC CHỈ ĐỊNH

TRONG BẢN VẼ HOÀN THIỆN BÀN

VISUALLY IMPAIRED WAYFINDING TILES SHOWN ON FLOOR FINISHES DRAWING.

VẬT LIỆU CHỐNG CHÁY BÊ ĐƯỢC SỬ DỤNG XUYẾN BUỐT KH BẬY ĐƯỢC

MỨC CHỐNG CHÁY CAO NHẤT CỦA CẤP ĐỘ 1

NON COMBUSTIBLE MATERIALS WILL BE USED THROUGHOUT TO ACHIEVE MAXIMUM CLASS 1 GRADE FIRE RATING.

CHỈ SỐ BẢNG KHẨM CẤP CHỈ LA TƯƠNG ĐỐI THÔNG SỐ CHỈNH XÁC BÊ ĐƯỢC

XÁC ĐỊNH KHI ĐÓ BẢNG TÍNH TOÁN ĐƯỢC CHỈ ĐỊNH (MÀ NHẤT LA 2 LUX)

EMERGENCY LIGHTING INDICATIVELY APPLIED. ACTUAL NUMBER TO BE DETERMINED ONCE CALCULATION IS UNDERTAKEN TO CONFIRM 2 LUX IS ACHIEVED

BẢN VẼ ĐƯỢC ĐỌC KẾT HỢP VỚI BẢNG THÔNG KẾT TÊN PHÒNG, BẢN VẼ SỐ

CPD-CSA-PT-5TH-43988

DRAWING TO BE READ IN CONJUNCTION WITH ROOM SCHEDULE DWG NO. CPD-CSA-PT-5TH-43988

CHÚ THÍCH/ LEGEND:

(CHỈ M)

→

→

→

→

→

→

→

→

→

→

KHOẢNG CÁCH & HƯỚNG THOÁT HIỂM (MÉT)

ESCAPE DIRECTION & DISTANCE (M)

CHỐNG CHÁY 60 PHÚT

60 MINS. FIRE RATING

CHỐNG CHÁY 150 PHÚT

150 MINS. FIRE RATING

CỬA BI CHỐNG CHÁY 45 PHÚT

45 MINS. FIRE DOOR

CỬA BI CHỐNG CHÁY 75 PHÚT

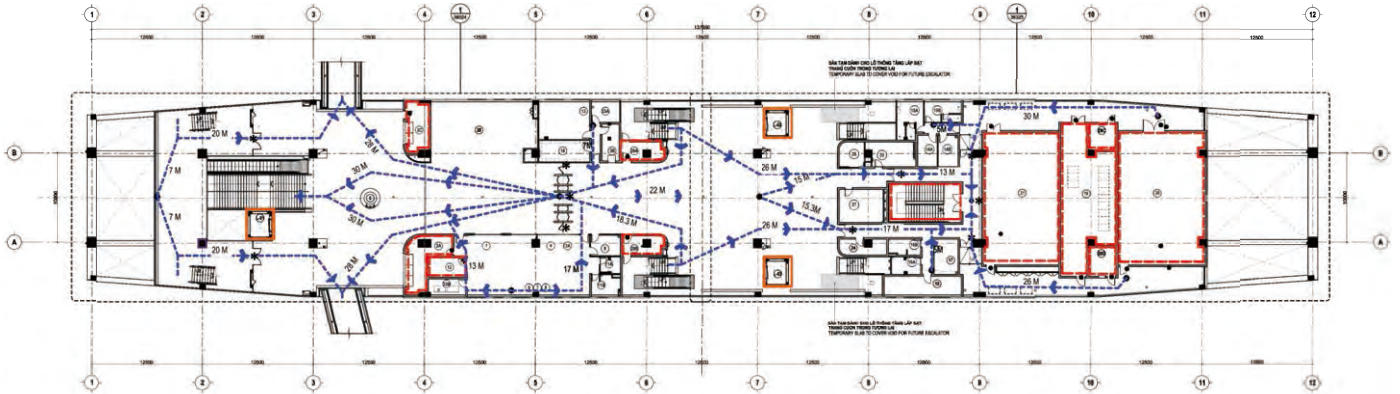
75 MINS. FIRE DOOR

CỬA BI CHỐNG CHÁY 120 PHÚT

120 MINS. FIRE DOOR

OPENABLE IN EMERGENCY

MỞ KHI KHẨM CẤP



GHI CHÚ/NOTE:

CÁC BẢN VẼ KẾT HỢP CÙNG VỚI CÁC BẢN VẼ THÔNG CHÁY CHỮA CHÁY DRAWINGS TO BE READ IN CONJUNCTION WITH FIRE PROTECTION & FIRE DETECTION PACKAGES.

CỬA ĐI VÀ CỬA BỎ GÁM TRONG TƯỜNG CHU LỬA CÓ ĐỘ CHỐNG CHÁY BẰNG 1/2 TƯỜNG CHỐNG CHÁY DOORS & WINDOWS IN FIRE WALLS TO EQUAL HALF OF THE WALLS FIRE RATING.

TẤT CẢ CÁC TƯỜNG & BÀN XUYÊN QUA CÁC KHOẢNG CHÁY ĐƯỢC Bịt KÍN BẰNG VẬT LIỆU CHU LỬA ALL WALL & FLOOR PENETRATIONS THROUGH FIRE COMPARTMENTS TO BE SEALED WITH FIRE RETARDANT MATERIAL.

KHOẢNG THANG BỎ & THANG THOÁT HIỂM ĐƯỢC ÁP DỤNG THEO QCVN 06:2019 STAIR WIDTHS AND EMERGENCY ESCAPE DISTANCES ARE IN ACCORDANCE WITH QCVN 06:2019.

CÔNG TÁC SẮT CỦA BẾ ĐƯỢC BÔI BĂNG BƠI CHU NHỆT & CÓ ĐỘ CHU LỬA LA 15 PHÚT STEEL WORK ON PLATFORM TO HAVE 15 MINS FIRE RATING WITH INTUFLUENT PAINT.

TƯỜNG GẠCH BÊ TÔNG GÓC DÂY 20MM CÓ LỚP HOÀN THIỆN DÂY 20MM Ở 2 BÊN 10MM BLOCK WALLS TO HAVE 20MM HARD WALL RENDER BOTH SIDES.

TƯỜNG GẠCH BÊ TÔNG GÓC DÂY 20MM CÓ LỚP HOÀN THIỆN DÂY 20MM Ở 2 BÊN 20MM BLOCK WALLS TO HAVE 20MM HARD WALL RENDER BOTH SIDES.

CỬA ĐI PHẢI THOÁT HIỂM TỰ ĐỘNG MỞ KHI CÓ CHỖNG BÁO CHÁY DOOR TO REAR EMERGENCY EXIT TO AUTOMATICALLY OPEN IN EVENT OF ALARM.

KHOẢNG VÒNG NHẢY CHÁY ĐƯỢC DỰA THEO QCVN 06:2019 FIRE STRATEGY TO COMPLY WITH QCVN 06:2019.

GẠCH DẪN ĐƯỜNG CHO NGƯỜI THỊ LỰC KÉM ĐƯỢC CHỈ ĐỊNH TRONG BẢN VẼ HOÀN THIỆN BẢN VISUALLY IMPAIRED WAYFINDING TILES SHOWN ON FLOOR FINISHES DRAWING.

VẬT LIỆU CHỐNG CHÁY BÊ ĐƯỢC SỬ DỤNG XUYÊN BUỐT KHI BẮT ĐƯỢC MỨC CHỐNG CHÁY CAO NHẤT CỦA CẤP ĐỘ A NON COMBUSTIBLE MATERIALS WILL BE USED THROUGHOUT TO ACHIEVE MAXIMUM CLASS A GRADE FIRE RATING.

CHỈ SỐ BẢNG KHẨM CẤP CHỈ LA TƯƠNG ĐỐI THÔNG SỐ CHÍNH XÁC BÊ ĐƯỢC XÁC ĐỊNH KHI ĐÓ SÁNG THỊN TỎAN ĐƯỢC CHỈ ĐỊNH (MÀ NHẤT LA 2 LUX) EMERGENCY LIGHTING INDICATIVELY APPLIED. ACTUAL NUMBER TO BE DETERMINED ONCE CALCULATION IS UNDERTAKEN TO CONFIRM 2 LUX IS ACHIEVED.

BẢN VẼ ĐƯỢC ĐỌC KẾT HỢP VỚI BẢNG THÔNG KẾ TÊN PHÒNG, BẢN VẼ SỐ QP-CSA-PT-SHT-4006 DRAWING TO BE READ IN CONJUNCTION WITH ROOM SCHEDULE. DWG NO. QP-CSA-PT-SHT-4006.

CHÚ THÍCH/LEGEND:

(20 M) ➤

➤

➤

➤

➤

KHOẢNG CÁCH & HƯỚNG THOÁT HIỂM (MÉT) ESCAPE DIRECTION & DISTANCE (M)

CHỐNG CHÁY 60 PHÚT 60 MINS. FIRE RATING

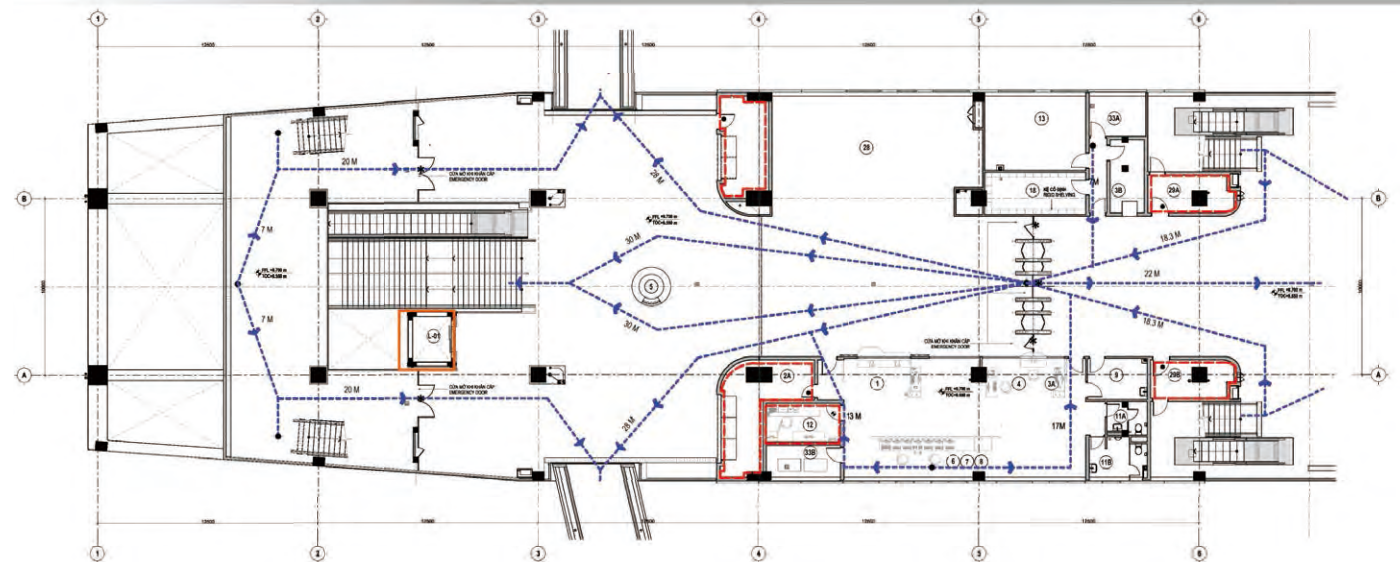
CHỐNG CHÁY 120 PHÚT 120 MINS. FIRE RATING

CỬA ĐI CHỐNG CHÁY 45 PHÚT 45 MINS. FIRE DOOR

CỬA ĐI CHỐNG CHÁY 75 PHÚT 75 MINS. FIRE DOOR

CỬA ĐI CHỐNG CHÁY 120 PHÚT 120 MINS. FIRE DOOR

➤



GHI CHÚ/NOTE:

CÁC BẢN VẼ KẾT HỢP CÙNG VỚI CÁC BẢN VẼ THÔNG CHÁY CHỮA CHÁY DRAWINGS TO BE READ IN CONJUNCTION WITH FIRE PROTECTION & FIRE DETECTION PACKAGES.

CỬA ĐI VÀ CỬA BỎ GÁM TRONG TƯỜNG CHU LỬA CÓ ĐỘ CHỐNG CHÁY BẰNG 1/2 TƯỜNG CHỐNG CHÁY DOORS & WINDOWS IN FIRE WALLS TO EQUAL HALF OF THE WALLS FIRE RATING.

TẤT CẢ CÁC TƯỜNG & BÀN XUYÊN QUA CÁC KHOẢNG CHÁY ĐƯỢC Bịt KÍN BẰNG VẬT LIỆU CHU LỬA ALL WALL & FLOOR PENETRATIONS THROUGH FIRE COMPARTMENTS TO BE SEALED WITH FIRE RETARDANT MATERIAL.

KHOẢNG THANG BỎ & THANG THOÁT HIỂM ĐƯỢC ÁP DỤNG THEO QCVN 06:2019 STAIR WIDTHS AND EMERGENCY ESCAPE DISTANCES ARE IN ACCORDANCE WITH QCVN 06:2019.

CÔNG TÁC SẮT CỦA BẾ ĐƯỢC BÔI BĂNG BƠI CHU NHỆT & CÓ ĐỘ CHU LỬA LA 15 PHÚT STEEL WORK ON PLATFORM TO HAVE 15 MINS FIRE RATING WITH INTUFLUENT PAINT.

TƯỜNG GẠCH BÊ TÔNG GÓC DÂY 20MM CÓ LỚP HOÀN THIỆN DÂY 20MM Ở 2 BÊN 10MM BLOCK WALLS TO HAVE 20MM HARD WALL RENDER BOTH SIDES.

TƯỜNG GẠCH BÊ TÔNG GÓC DÂY 20MM CÓ LỚP HOÀN THIỆN DÂY 20MM Ở 2 BÊN 20MM BLOCK WALLS TO HAVE 20MM HARD WALL RENDER BOTH SIDES.

CỬA ĐI PHẢI THOÁT HIỂM TỰ ĐỘNG MỞ KHI CÓ CHỖNG BÁO CHÁY DOOR TO REAR EMERGENCY EXIT TO AUTOMATICALLY OPEN IN EVENT OF ALARM.

KHOẢNG VÒNG NHẢY CHÁY ĐƯỢC DỰA THEO QCVN 06:2019 FIRE STRATEGY TO COMPLY WITH QCVN 06:2019.

GẠCH DẪN ĐƯỜNG CHO NGƯỜI THỊ LỰC KÉM ĐƯỢC CHỈ ĐỊNH TRONG BẢN VẼ HOÀN THIỆN BẢN VISUALLY IMPAIRED WAYFINDING TILES SHOWN ON FLOOR FINISHES DRAWING.

VẬT LIỆU CHỐNG CHÁY BÊ ĐƯỢC SỬ DỤNG XUYÊN BUỐT KHI BẮT ĐƯỢC MỨC CHỐNG CHÁY CAO NHẤT CỦA CẤP ĐỘ A NON COMBUSTIBLE MATERIALS WILL BE USED THROUGHOUT TO ACHIEVE MAXIMUM CLASS A GRADE FIRE RATING.

CHỈ SỐ BẢNG KHẨM CẤP CHỈ LA TƯƠNG ĐỐI THÔNG SỐ CHÍNH XÁC BÊ ĐƯỢC XÁC ĐỊNH KHI ĐÓ SÁNG THỊN TỎAN ĐƯỢC CHỈ ĐỊNH (MÀ NHẤT LA 2 LUX) EMERGENCY LIGHTING INDICATIVELY APPLIED. ACTUAL NUMBER TO BE DETERMINED ONCE CALCULATION IS UNDERTAKEN TO CONFIRM 2 LUX IS ACHIEVED.

BẢN VẼ ĐƯỢC ĐỌC KẾT HỢP VỚI BẢNG THÔNG KẾ TÊN PHÒNG, BẢN VẼ SỐ QP-CSA-PT-SHT-4006 DRAWING TO BE READ IN CONJUNCTION WITH ROOM SCHEDULE. DWG NO. QP-CSA-PT-SHT-4006.

CHÚ THÍCH/LEGEND:

(20 M) ➤

➤

➤

➤

➤

KHOẢNG CÁCH & HƯỚNG THOÁT HIỂM (MÉT) ESCAPE DIRECTION & DISTANCE (M)

CHỐNG CHÁY 60 PHÚT 60 MINS. FIRE RATING

CHỐNG CHÁY 120 PHÚT 120 MINS. FIRE RATING

CỬA ĐI CHỐNG CHÁY 45 PHÚT 45 MINS. FIRE DOOR

CỬA ĐI CHỐNG CHÁY 75 PHÚT 75 MINS. FIRE DOOR

CỬA ĐI CHỐNG CHÁY 120 PHÚT 120 MINS. FIRE DOOR

➤

KEY PLAN



KÍCH THƯỚC THANG BỘ & THANG THOÁT HIỂM DUYỆT
ÁP DỤNG THEO QCVN 08:2018
STAIR WIDTHS AND EMERGENCY ESCAPE DISTANCES
ARE IN ACCORDANCE WITH QCVN 08:2013.

JOHANH VŨNG NGÂN CHẤY ĐƯỢC DỰA TRÊN QCVN 06:2016
FIRE STRATEGY TO COMPLY WITH QCVN 06:2016.

- BẢN VẼ ĐƯỢC ĐỌC KẾT HỢP VỚI BẢNG THÔNG KÊ TÊN PHÒNG. B.
CP2-CSA/FT-STHT-4306
DRAWING TO BE READ IN CONJUNCTION WITH ROOM SCHEDULE. D.
CP2-CSA/FT-STHT-4306

CEM

100

CỬA BỊ CHỐNG CHÁY 120 PHÚT



KÍCH THƯỚC THANG BỘ & THANG THOÁT HIỂM DỌNG
ÁP DỤNG THEO QCVN 06:2019
STAIR WIDTHS AND EMERGENCY ESCAPE DISTANCES
ARE IN ACCORDANCE WITH QCVN 06:2019.

4-**HOẠCH ĐỊNH NGÂN SÁCH BƯỚC DỰA TRÊN QCVN 06:2018**
 FIRE STRATEGY TO COMPLY WITH QCVN 06:2018.

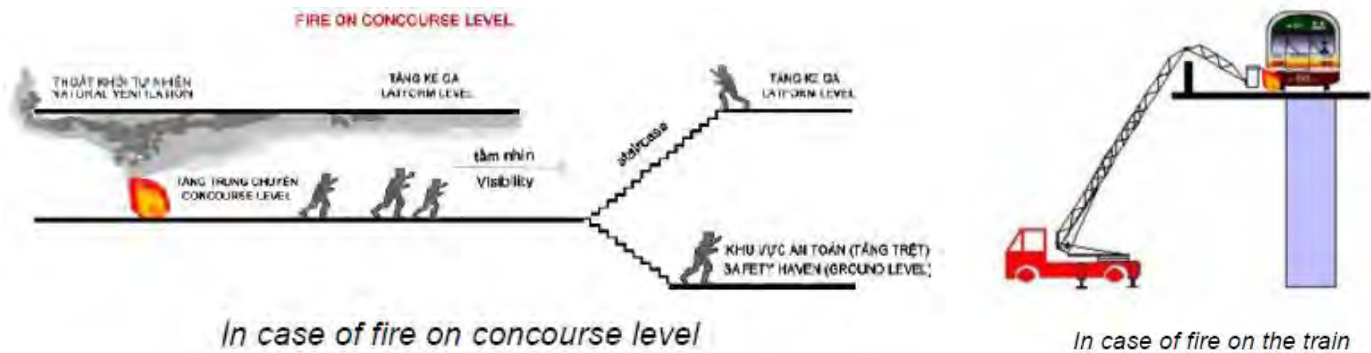
• BẢN VẼ ĐƯỢC ĐỌC KẾT HỢP VỚI BẢNG THÔNG KÊ TÊN PHÒNG. BA
CP2-CISA-FT-STHT-43006
DRAWING TO BE READ IN CONJUNCTION WITH ROOM SCHEDULE. D
CP2-CISA-FT-STHT-43006

QAM

1

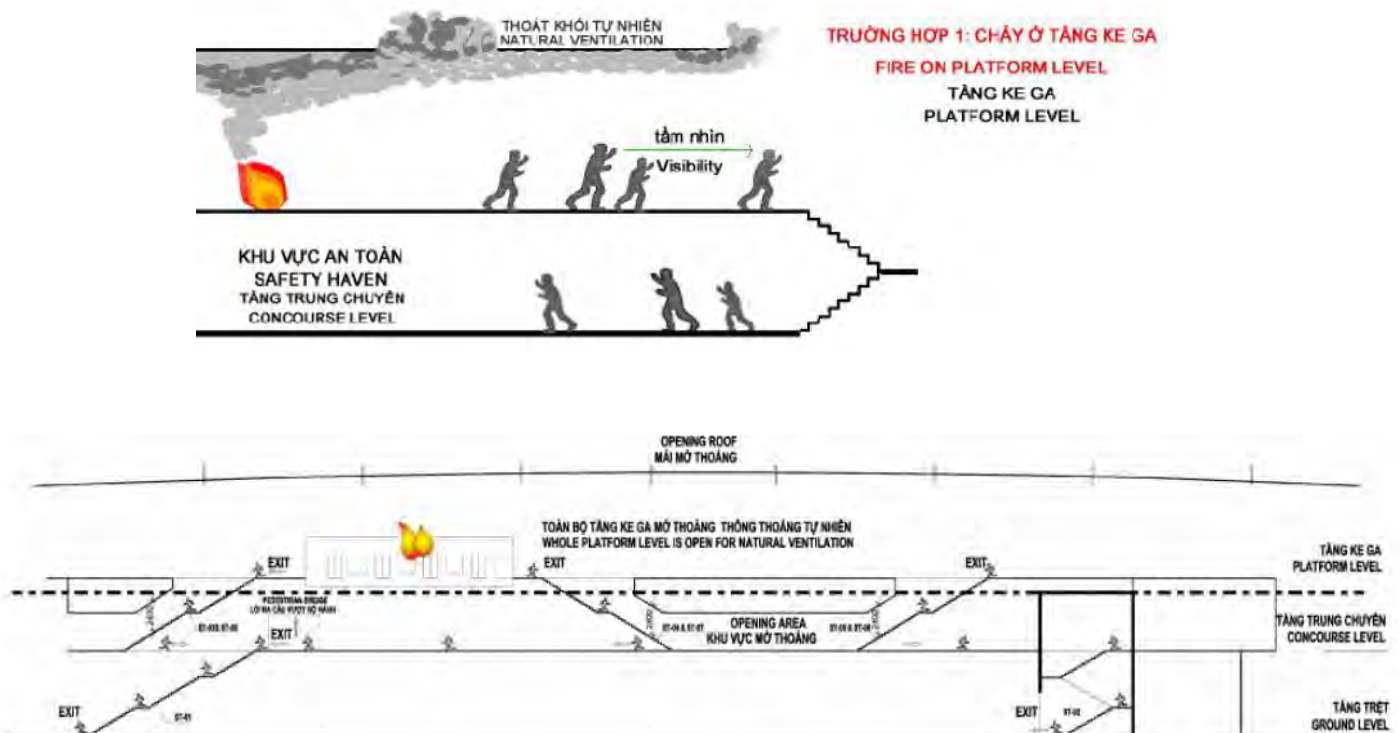
CỬA BỊ CHÔNG CHẤY 120 PHÚT

EMERGENCY EXIT PRINCIPLE – CL TO GL



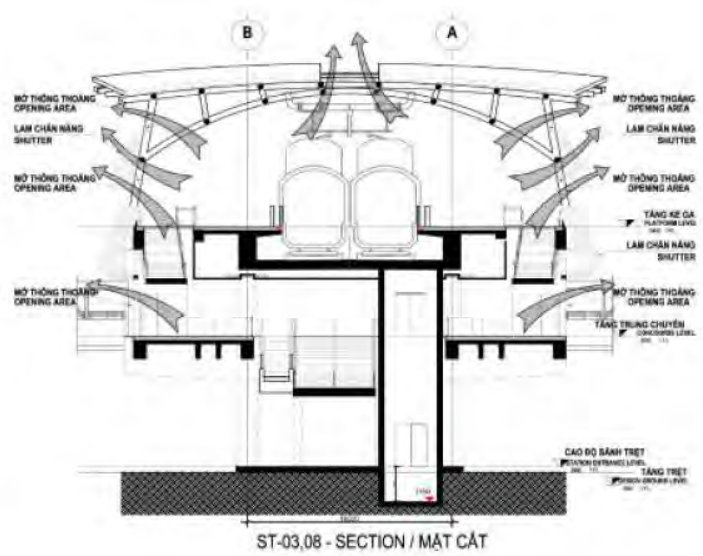
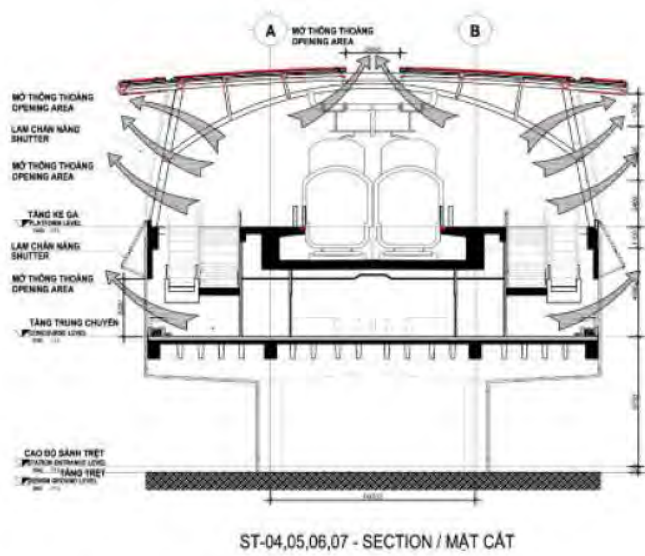
Page 39

EMERGENCY EXIT PRINCIPLE – PL TO CL



Page 40

SMOKE VENTILATION PRINCIPLE



SIGNAGES INDICATION



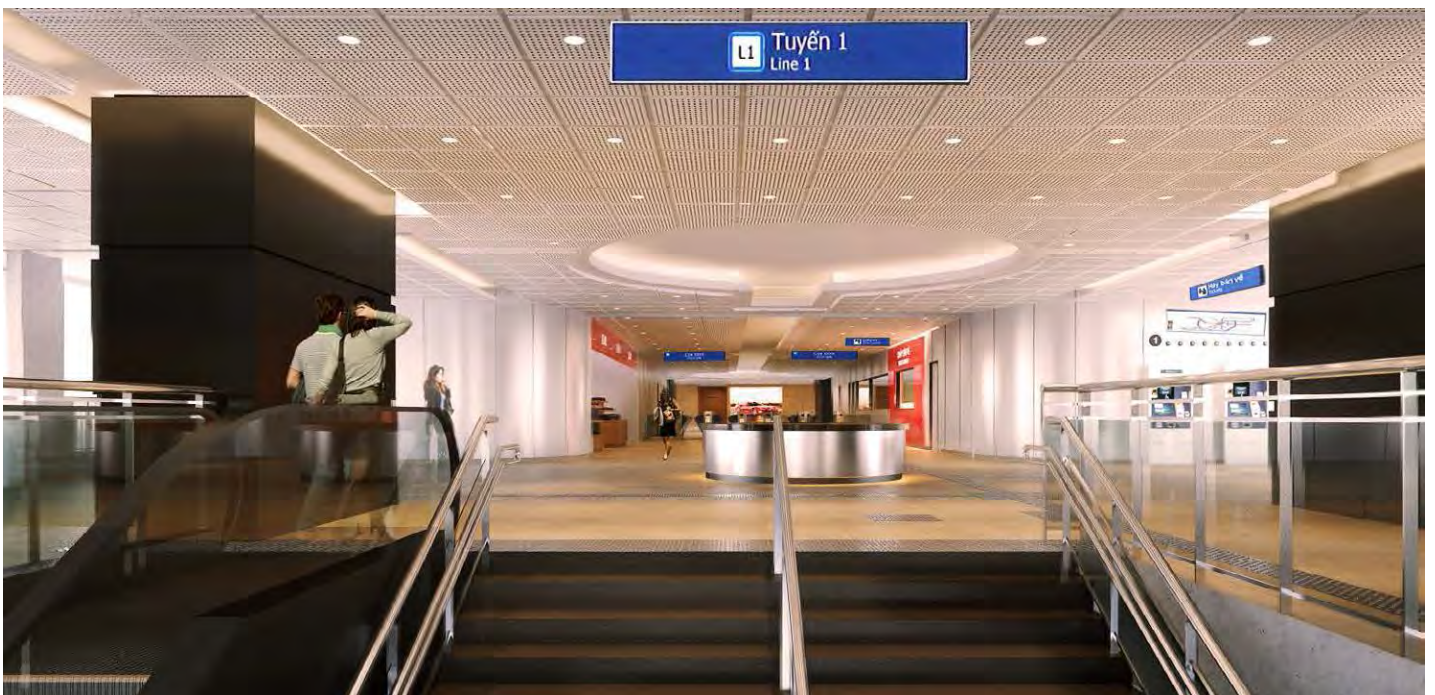
Signage and landscaping will be done by others and this is an image for representation only. Images are for references only and can be changed during construction.

SIGNAGES INDICATION



Signage and landscaping will be done by others and this is an image for representation only. Images are for references only and can be changed during construction.

SIGNAGES INDICATION



Signage will be done by others and this is an image for representation only. Images are for references only and can be changed during construction.

SIGNAGES INDICATION



Signage will be done by others and this is an image for representation only.
Images are for references only and can be changed during construction.

SIGNAGES INDICATION



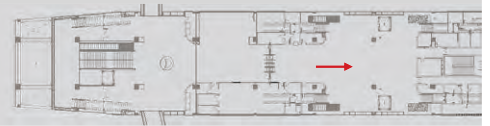
Signage will be done by others and this is an image for representation only.
Images are for references only and can be changed during construction.

SIGNAGES INDICATION



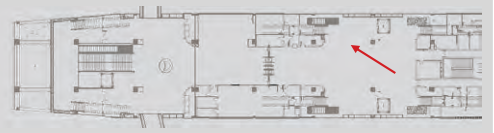
Signage will be done by others and this is an image for representation only.
Images are for references only and can be changed during construction.

SIGNAGES INDICATION



Signage will be done by others and this is an image for representation only.
Images are for references only and can be changed during construction.

SIGNAGES INDICATION



Signage will be done by others and this is an image for representation only. Images are for references only and can be changed during construction.

3D VIEWS



Signage and landscaping will be done by others and this is an image for representation only. Images are for references only and can be changed during construction.



PCCC APPRAISAL STATUS

Page 51

PCCC CERTIFICATE



BỘ CÔNG AN **CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM**
CỤC CẢNH SÁT PCCC&CNCH **Độc lập - Tự do - Hạnh phúc**
Số: 425/TĐ-PCCC-P3

GIẤY CHỨNG NHẬN
THẨM DUYỆT VỀ PHÒNG CHÁY VÀ CHỮA CHÁY

- Căn cứ Luật Phòng cháy và chữa cháy ngày 29 tháng 6 năm 2001;
- Căn cứ Nghị định số 35/2003/NĐ-CP ngày 04/4/2003 của Chính phủ quy định chi tiết thi hành một số điều của Luật Phòng cháy và chữa cháy;
- Căn cứ Nghị định số 46/2012/NĐ-CP ngày 22 tháng 5 năm 2012 của Chính phủ Sửa đổi, bổ sung một số điều của Nghị định số 35/2003/NĐ-CP ngày 04 tháng 4 năm 2003;
- Căn cứ Thông tư số 04/2004/TT-BCA ngày 31 tháng 3 năm 2004 của Bộ Công an;
- Xét văn bản đề nghị thẩm duyệt về PCCC số 188/BQLĐSDT-QT.DA.1 ngày 27/01/2014 của Ban Quản lý Đường sắt đô thị Tp. Hồ Chí Minh.

Người đại diện là Ông: Hoàng Như Cường Chức danh: Phó Trưởng Ban
CỤC CẢNH SÁT PHÒNG CHÁY, CHỮA CHÁY VÀ CỨU NẠN, CỨU HỘ
CHỨNG NHẬN:

Công trình: Nhà ga Thảo Điền thuộc Dự án tuyến đường sắt đô thị
Tp Hồ Chí Minh, tuyến số 1, Tuyến Bến Thành – Suối Tiên.
Địa điểm xây dựng: Phường Thảo Điền, Quận 2, Tp. Hồ Chí Minh.
Chủ đầu tư: Ban Quản lý đường sắt đô thị Tp. Hồ Chí Minh.
Đơn vị lập dự án/thiết kế: Công ty TNHH Systra.

Đã được thẩm duyệt về PCCC các nội dung sau:

1. Khoảng cách an toàn PCCC; Giao thông phục vụ cho xe chữa cháy;
2. Giải pháp ngăn cháy, chống cháy lan;
3. Hệ thống thoát nạn; Hệ thống đèn chiếu sáng sự cố và chỉ dẫn thoát nạn;
4. Hệ thống báo cháy tự động;
5. Hệ thống chữa cháy bằng nước;
6. Hệ thống chữa cháy tự động bằng khí FM200;
7. Trang bị phương tiện chữa cháy ban đầu.

theo các tài liệu, bản vẽ ghi ở trang 2.

Các yêu cầu kèm theo:

1. Vách ngăn của cầu thang nổi tầng trung chuyển và tầng ke ga với khu vực xung quanh phải có giới hạn chịu lửa không nhỏ hơn 45 phút theo quy định tại Điều 4.27 của Quy chuẩn QCVN 06:2010/BXD.
2. Cục Cảnh sát PCCC&CNCH kiểm định phương tiện, thiết bị PCCC và kiểm tra nghiệm thu về PCCC trước khi đưa công trình vào sử dụng.

Nơi nhận:
- Ban Quản lý đường sắt đô thị Tp. Hồ Chí Minh;
- Sở Cảnh sát PCCC thành phố Hồ Chí Minh;
- Lưu: VT, P3.

Hà Nội, ngày 27 tháng 02 năm 2014

CỤC TRƯỞNG

Đại tá Đoàn Việt Mạnh

PCCC certificate obtained for type A station, which was issued by Ministry of Police.

Based on which the design is developed into detail in compliance with Fire Safety requirements.

Page 52

THANK YOU