

The Socialist Republic of Vietnam
Management Authority for Urban Railways
Ho Chi Minh Urban Railway Company for Line 1



HO CHI MINH CITY
PEOPLE'S COMMITTEE



JAPAN INTERNATIONAL
COOPERATION AGENCY

**THE PROJECT ON
STRENGTHENING MANAGEMENT
ABILITY OF OPERATION AND
MAINTENANCE COMPANY FOR
THE OPENING OF URBAN RAILWAY
LINE 1 IN HO CHI MINH CITY
PROJECT COMPLETION REPORT**

June 2025

Japan International Cooperation Agency (JICA)

**Tokyo Metro Co., Ltd.
Oriental Consultants Global Co., Ltd.
Almec Corporation
Japan International Consultants for Transportation
Co., Ltd.
Creative Research and Planning Co., Ltd.**

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Abbreviations

Abbreviations	Full Forms
AFC	Automatic Fare Collection
ATO	Automatic Train Operation
ATP	Automatic Train Protection
C/P	Counterpart(s)
DOF	Department of Finance
DOT	Department of Transportation
DPI	Department of Planning and Investment
GC	General Consultant (NJPT Association)
HCMPC	Ho Chi Minh City People’s Committee
HMC	Hanoi Metro Company
HURC1	Ho Chi Minh Urban Railway Company for Line 1
ISA	Independent Safety Assessor
JCC	Joint Coordination Committee
JET	JICA Expert Team
JICA	Japan International Cooperation Agency
MAUR	Management Authority for Urban Railways
MCPT	Management Center for Public Transport
MM	Mobility Management
MOU	Minutes of Understanding
MRTJ	MRT Jakarta
O&M	Operations and maintenance
OCC	Operations Control Center
OSMS	Operational Safety Maintenance System
PMU	Project Management Unit
R/D	Record of Discussion
SAPI	Special Assistance for Project Implementation for Ho Chi Min City Metro Line 1
TC1	Project for Support on Setup of Operation and Maintenance Company of Urban Railways in Ho Chi Minh City (TC Phase 1)
TC2	The Project on Strengthening Management Ability of Operation and Management Company for the Opening of Urban Railway Line 1 in Ho Chi Minh City

VMRA	Vietnam Railway Authority
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I. Basic Information of the Project

1. Country

Socialist Republic of Vietnam

2. Title of the Project

The Project on Strengthening Management Ability of Operation and Management Company
for the Opening of Urban Railway Line 1 in Ho Chi Minh City (TC2)

3. Duration of the Project (Planned and Actual)

Planned; December 2017 to December 2022

Actual; December 2017 to June 2025

4. Background

The population of the urban area of Ho Chi Minh City grew from 6.59 million in 1995 to 14,48 million in 2015. In proportion to the population growth, the number of registered motorcycles and cars increased significantly, which caused the massive traffic volume in the city. As a result, plenty of problems arose such as heavy traffic jams, traffic accidents, air pollution, and difficulties with access to urban services. These problems hindered efficient economic/social activities in the city. Since existing public transport networks such as bus systems etc. were not able to be expanded, Ho Chi Minh City planned to develop new urban transportation system centralizing urban railways.

In such circumstances, Japan International Cooperation Agency (JICA) implemented an ODA project, “Ho Chi Minh City Metro Line 1 Project (Benh Thanh to Suoi Tien), targeting to start operation in 2020. JICA provided its loan by 155, 364 million Japanese Yen (JPY), (Phase 1; 20,887 JPY, Phase 2; 44,302 JPY, Phase 3; 90,175JPY) before TC2 project started. As one of the scopes of this project, necessary staff such as train drivers, station staff, OCC staff were supposed to be trained in addition to the construction. However, since urban railway industry in Vietnam had just commenced, Management Authority for Urban Railway, the responsible agency for urban railways in Ho Chi Minh City, had no experience in setting up an urban railway operator or operating an urban railway system.

Therefore, JICA implemented the “Project for Support on Setup of Operation and Maintenance Company of Urban Railways in Ho Chi Minh City (TC Phase 1)” (TC1), in which necessary preparation to set up an urban railway company (O&M Company) including formulating a business plan. After the completion of TC1, in July 2023, the business plan of the urban railway company was approved, however, since it was confirmed during the project period that the commencement date would be delayed, the company did not proceed with its registration and the human resource allocation.

Considering such situation, JICA implemented a project “Special Assistance for Project Implementation for Ho Chi Min City Metro Line 1 (SAPI, August 2014 to April, in which factors/issues/ which had been impeding the registration of the O&M company such as the application procedures for state-owned companies, establishment of a regulatory body and its responsibility, and issues in the policy and the institutional system in Vietnam are studied and analyzed. However, due to delays in the political decision etc., the O&M company remained unregistered.

As such, the government of Vietnam requested JICA to formulate this cooperation project to boost the commencement of the O&M company’s operations preparing for the commencement of the Metro Line 1 in 2020.

5. Overall Goal and Project Purpose (from Record of Discussions(R/D))

<Overall Goal>

Urban railway line 1 in Ho Chi Minh City is operated safely and reliably by HURC1.

<Project Purpose>

Management ability to operate and maintain urban railway is developed in HURC1.

6. Implementing Agency

- ✧ Management Authority for Urban Railways (MAUR)
- ✧ The Ho Chi Minh City Urban Railway Company No.1 (HURC1)

II. Results of the Project

1. Results of the Project

1-1. Input by the Japanese side (Planned and Actual)

Planned; 205.82 Person Months (PM)

Actual; 203.50 PM

1-2. Input by the Vietnamese side

70- counterparts

1-3. Activities (Planned and Actual)

[Output 1 The capacity of urban railway regulatory organization is strengthened.

1-1. To establish the task team under MAUR and HURC1 for composing urban railway regulations.

1-2. To compose urban railway regulations and submit to HCMPC.

Originally, it was supposed to establish a task team involving

<Fare Policy>

JICA Expert Team (JET) assisted with the proposal of fare policy based on a financial analysis on O&M of urban railways.

C/P and JET reviewed the proposal of TC1 (Initial fare 8000 VND + 800 VND/Km) by comparing commuting costs of each transport mode in Ho Chi Minh City (fare, operating costs of vehicles, speed, time-value etc.). In addition, they conducted an international benchmarking study, and willingness-to-pay study using existing data.

According to the results from those studies, they concluded that lower fares for shorter distances, higher fares for longer distances could be applied compared with the original proposal. In addition, they studied fare policy considering the fare-box revenue and subsidy by the government, and a discount system for disabled people, the socially vulnerable.

In accordance with those studies, C/P made a proposal about the fare policy to Ho Chi Minh City -People’s Committee (HCMPC). Concerned agencies under HCMC-PC (Department of Finance (DOF), MAUR, HURC1, Department of Transport (DOT), and Management Center for Public Transportation (MCPT) under DOT) held a meeting in October 2022. In response to

the comments made in the meeting, JET provided some tips for smooth discussion between those agencies and decision-making such as 1) Decisive factors of fare level in the initial stage (Cases from overseas, Manila; Low fare strategy, Bangkok; High fare strategy, Jakarta the latest case, Ho Chi Minh City’s unique circumstances; Strategic Development of Public Transportation) 2) Future blue-print of Metro Line 1 (Growth of Ridership, Changes in revenues and subsidy).

HCMPC issued the decision No. 5327/QD-UBND about the fare on November 21, 2024, and the conclusion No.29/2024/NQ-HDND about the discount fare on December 12.

According to the decision, the initial fare is 6000 VND, while the maximum fare is 20,000 VND.

According to the conclusion, the discount fare can be enjoyed by

- a) Contributors to the revolution (Listed by the law)
- b) Disabled People
- c) Senior Citizens
- d) Infants (Younger than 6 years old)
- e) Users of bus systems connected to each station of Metro Line 1, Users of Metro Line 1 (Not permanent)

<O&M Contract>

HCMC-PC regulates urban railways through O&M contracts, which is a similar practice to the public bus system in the city. However, O&M contracts for bus systems cannot be directly applicable to urban railway systems, and C/P and concerned agencies lacked experience in developing such contracts. Therefore, JET assisted C/P to prepare a contract framework and hold workshops to lecture issues related to the contracts.

An O&M contract defines an O&M company’s responsibility, expected performance, remuneration, subsidy to maintain proper operations and maintenance etc. It was supposed that the land and the civil structures would belong to HCMC-PC and be maintained by HURC1, while the other assets would be owned and managed by HURC1. Therefore, the contract package for maintenance of the civil structures would be split from the others. In addition, MAUR and HURC1 were thinking of separating the packages of the operations and the maintenance to mitigate payment risks.

Considering these conditions, JET proposed the O&M contract framework to C/P and

concerned agencies. To enhance their understanding, JET held 4 workshops to explain important items in the contracts such as the basic contract structure, risk-sharing, conditions for handover, monitoring, contract management, performance management, KPI, financial risks, business cases, costs and revenue estimation, subsidy system, capital expenditure for spare parts and facility replacement, escrow service and payment issues etc.)

In the end of 2024, HURC1 concluded the Operation Contract with MCPT and the Master Maintenance Contract with MAUR. The Maintenance Implementation Contract remains unconcluded as of May 2025 as HCMC-PC is reviewing the contract price.

*Refer to Annex 2.1 for the deliverables

[Output 2] Necessary systems, internal rules and plans for management of HURC1 are developed.

2-1. To formulate the manuals and educational materials on education and training for obtaining urban railway driving license based on Vietnam Railway Act and related laws and regulations.

JET developed some prototypes of training material namely “Technical Standard”, “Train Operation Rules”, “Occupational Safety”, “Train Operation Theory”, “Rolling Stock”, “Signaling system/Power Supply System”, “Track” and manuals for train operation, which were handed over to the General Consultant (GC) for the construction project of the Metro Line 1. Utilizing these materials, GC conducted necessary training to get permission for operation of Metro Line 1.

*Refer to Annex 2.1 for the deliverables

2-2. To cooperate with GC in composing and submitting training system and training plan for obtaining approval from VNRA.

As part of the activities to obtain the safety certificate, JET assisted GC with developing necessary training plans.

- ✧ JET reviewed the train driver training plan made by GC.
- ✧ JET cooperated with GC to create training plans for station staff and OCC staff.
- ✧ In coordination with GC and the contractors, JET refined the training plans.
- ✧ Providing the draft manuals for train drivers and OCC staff developed based on the actual cases of Japanese urban railway operators, JET proposed necessary training for GC and

the contractors. GC created the actual training materials based on the drafts.

- ✧ Reviewing the training plan for station supervisors by GC, JET proposed additional contents based on the actual cases of Japanese urban railway operators.

*Refer to Annex 2.1 for the deliverables

2-3. To prepare Operation Safety Management System along with the organizational and regulatory development to obtain "safety certification"

2-6. To submit relevant documents to VNRA and relevant authorities in order to obtain safety certificate and operating permission after receiving verification of Operation Safety Management by the Certification Body.

In these activities, organizational structures and internal systems necessary for the Operational Safety Management System (OSMS) were developed and composed as the OSMS documents which were mandatory to be submitted to Vietnam Railway Authority (VNRA) based on the Circular No.31 (Ministry of Transport).

Referring to the internal rules and manuals developed by each C/P, JET formulated a framework of documents which was necessary for approval of the OSMS. In addition, C/P and JET modified the OSMS and the related documents in response to the comments by the Independent Safety Assessor (ISA). C/P submitted the finalized OSMS and the related documents to the ISA in September 2024. In the end, based on the Safety Report submitted by the ISA, VNRA verified the safety of Metro Line 1 with some conditions to be resolved after the commencement and Metro Line 1 was put into operation on December 22, 2024.

In April 2025, JET made a proposal to C/P to modify the OSMS according to the comments made by the ISA in December 2024 through the safety with some additional findings by JET itself.

*Refer to Annex 2.1 and 2.3 for the deliverables

2-4. To review and update internal rules of HURC1 formulated in TC1 (Management, Safety, Administration, Human Resource, Finance, Procurement, Information System, Business, etc.)

2-5. To formulate internal rules concerning the whole organization, administration department and business department.

2-7. If necessary, to formulate any other internal rules and plans which should be prepared before commencement of the Line 1, and approve it.

2-8. To formulate the internal rules and plans that should be prepared after commencement of the Line 1, and approve it.

C/P and JET developed necessary internal rules and plans especially for the headquarters of HURC1, including those developed through TC1.

As part of the Activity 2-4, the deliverables of TC1 were reviewed and updated. And as part of the Activity 2-5 and 2-7, all the necessary internal rules and plans were developed.

In those activities, JET proposed the drafts considering the local regulations and circumstances with explanation on the necessity, the background, and some cases of Japanese railway companies. For those items where coordination with GC or the contractors is necessary, JET hold a regular meeting with GC to share information from both sides.

Since the report issued by the ISA in December 2024 pointed out items to be addressed after the commencement of Metro Line 1, JET specified items which should be supported by JET. C/P and JET modified/updated those internal regulations accordingly.

*Refer to Annex 2.1 for the deliverables

[Output 3] Operation and maintenance ability of HURC1 staff is improved.

3-1. To plan and promote company-wide efforts on safety

Safety related rules, which consists of several items such as “Safety Policy” on top, were developed. In addition, the measures to promote safety related activities of HURC1 were implemented.

On July 18,19 and 22, 2024, JET hold an OSMS Workshop to enhance understanding about basic concepts and framework of OSMS, risk management, countermeasure for accidents, organizational structure etc. Successfully, a lot of staff from the headquarters and site offices of HURC1 with enthusiasm attended the workshop.

*Refer to Annex 2.1 and 2.3 for the deliverables

3-2. To develop human resource recruitment plan.

3-3. To employ necessary staff based on the human resource recruitment plan, and to educate and train them (except for the actions included in the contract with GC and each contractor)

3-5. To continue and conduct the necessary staff recruitment and training after opening the Line 1

C/P and JET made a recruitment plan. HURC1 recruited necessary staff in accordance with this plan.

- ✧ HURC1 has been recruiting headquarter staff in a timely manner.
- ✧ The Recruitment Plan was tentatively fixed through the 2nd JCC meeting. After that, the plan (especially for operation staff) was modified and updated in accordance with the circumstances.
- ✧ HURC1 conducted training for the commencement of Metro Line 1. (514 personnel)
 - Drivers; 59
 - OCC staff, Station Masters; 19/9
 - Station staff; 291
 - Maintenance Staff; 137
- ✧ Currently HURC1 has been continuously recruiting additional operation staff due to resignation or unexpected rises in work volume.

3-4. To formulate a plan for improving the operation after opening the Line 1.

In general, after commencement of an urban railway, the railway company needs to promptly make sure of stable operation of the company and safe operations of the railway system by coping with initial failures of the system, issues in quality and quantity of the workforce, bugs of workflows etc.

After the commencement of Metro Line 1, JET made proposals from the viewpoint of the OSMS, reviewing the said items above especially safety, punctuality and efficiency of the operation and maintenance.

For 2 weeks after the commencement, It was reported that Metro Line 1 had 1.7 million passengers and even during the Tet Holidays (Vietnamese Lunar New Year Holidays) in 2025, almost 100 thousand passengers per day took Metro Line 1. As of April 2025, the busiest section between Ben Thanh Station to Ba Son station, the occupancy rate of the train rises up around 150% during peak hours.

Although there were some minor troubles just after the commencement, Metro Line 1 has been

operated without major failures as of April 2025.

Here are some examples of minor troubles,

① Overshooting

Overshooting frequently occurs when train sets stop with Automatic Train Operation (ATO) at stations. It was assumed to be caused by sliding wheels due to rain. HURC1, GC and the contractor jointly attempted to find the causes. JET introduced some similar cases in Tokyo Metro.

GC is conducting training for Automatic Train Protection (ATP) normal mode operation upon rain, while the contractor is fixing the software to adapt to rain.

Shortly, the train sets will be able to run with the ATP mode suitable for raining as the contractor is improving the software to control the train sets.

② Graffiti on trains

Graffiti was found on the stabled trains. It was assumed that someone intruded into the depot during nighttime and did it. JET shared the preventive measure and countermeasure of Tokyo Metro with HURC1. After that, HURC1 drafted a rule to enter the depot with “No ID, No entry” policy. To enter the depot, everyone will need to show the ID issued by HURC1.

*Refer to Annex 2.3 and for the deliverables

[Output 4] Necessary planning, sales, public relations activities of HURC1 are carried out.

4-1. To make a plan and implement non railway business.

Non-rail business is done by railway operators to increase income other than farebox revenue by utilizing vacant spaces in stations, which results in contributing financially to the companies. In addition, for the convenience of passengers, it can provide additional service and new lifestyle by creating opportunities to use in-station commercial facilities.

C/P and JET targeted to obtain income by renting vacant spaces of stations, (Renting out to tenants, installing rental lockers, Automated Teller Machines, Automatic Vending machines etc.) and utilizing walls and columns for advertisement.

✧ JET introduced Japanese cases where railway operators utilize vacant spaces of stations, spaces under viaducts.

- ✧ JET explained tips to plan in-station stores and advertisement such as
 - To define scale of development in proportion to the number of passengers
 - To secure passenger flow (route or width of the pathway)
 - To install commercial facilities/advertising equipment on the routes
- ✧ JET explained some schemes to operate in-station store and advertisement with their Pros and Cons. (Contract structure between HURC1 and tenants, Direct Operation or Outsourcing)
- ✧ JET explained ideal regulations related to in-station stores and advertisement.
- ✧ JET proposed the lay-out plan of in-station stores for 4 stations selected by JET.
- ✧ JET checked the construction sites to verify the feasibility of the lay-out plan of the in-store station and the advertisement. C/P and JET jointly discussed how to increase income in each station.
- ✧ C/P and JET discussed a future plan to expand stores to the spaces under the viaducts.
- ✧ HURC1 submitted the concept plan of non-rail business (In-station stores, Advertisement, Parking lots for motorcycles) to MAUR. Based on the concept plan, HURC1 submitted a proposal of non-rail business to HCMC-PC. HURC1 is waiting for the approval by HCMC-PC.
- ✧ Once the proposal is approved by HCMC-PC, HURC1 will procure the operator of non-rail business.

*Refer to Annex 2.1 for the deliverables

4-2. To promote the usage of urban railway through Mobility Management (MM) activities.

Mobility Management (MM) Activities were conducted to promote modal shift from private cars to public transport for the commencement of Metro Line 1. These activities with multiple approaches contained preparation, planning, toolmaking, collaboration with concerned agencies, awareness-raising campaigns, workshops.

Development of MM Activity Plan and Preparation

- ✧ HURC1 made the MM Activity Plan targeting students, companies, and residents. (Selecting Targets, Strategize Measures, Organizing Tools)
- ✧ C/P obtained necessary information (Travel time, entrances, guidance to transfer, Manners) from MAUR, which were reflected to the MM tools.

Awareness campaign and making tools

- ✧ Referring to the case of overseas including Tokyo Metro, C/P and JET promoted modal shift and improvement of the image of railways by using promotion videos, brochures, maps of neighboring areas, travel plans.
- ✧ November 2018; JET held the MM seminar at Ho Chi Minh University of Technology
- ✧ April 2023; JET introduced MM outline in the seminar hosted by HCMC-PC.
- ✧ April 2024; JET introduced MM Activity Plan and MM tools in the workshop held by HCMC-PC and the one by Transport Safety Committee.

Table 1: MM Activity Plan

	No.	Title ▪ Material Name	Contents, How to Use
Chapter	1	Introduction	Definition of MM, Issues for Ho Chi Minh City and necessity
	2	MM Target Selection	Establishments around the stations, Selection of Targets (Students, Companies, Residents)
	3	Tools for MM Activities	Introduction of tools for each target (Information on Incentives, Behavior Survey, Detailed Plans, Maps, Games)
資料	1	List of MM Target	Lists of universities, companies, residences by station
	2	MM Educational Program	Workshop for students, Materials
	3	MM Commuting Program	Information for companies, Assistance for commuting planning
	4	Questionnaire Form	Survey on preference on using motorcycles, commuting costs, awareness on health and environment etc.
	5	Station Map	Maps visualizing walking pass to the stations, connection with bus systems, establishments in neighborhood
	6	Travel Assistance Information	Route guidance by station, Travel time, Station facility information
	7	Format of Personal Travel Plan	Templates to input commuting time, transport modes
	8	Traffic Board Game	Instructions for the game with notes to record

			the choice
	9	HCMC Board Map	A map with the traffic conditions in the city used in the game
	10	MM Flyer Idea	Idea reflected in the flyers to promote Metro

Collaboration with Transport Safety Committee / Implementation after the commencement;

Since HCMPC decided that MM activities should be initiated by Transport Safety Committee, JET collaborated with the committee by explaining the outline of the MM activities and assisting making the MM plan. After the commencement, JET monitored the usage of Metro Line 1, accessibility to/around the stations, effectiveness of the promotion activities, then discussed further promotion measures.

*Refer to Annex 2.2 for the deliverables

4-3. To understand and promote usage of Automated Fare Collection System (AFC) and IC Card.

- ✧ Promotion activities for the users were conducted as part of the MM activities. In addition, JET conducted activities promote understanding about AFC systems for the HURC1 staff.
- ✧ January 2020; With the Joint Coordination Committee (JCC) interim meeting, JET organized an “AFC Seminar” inviting the experts for “PROJECT FOR SUPPORTING DEVELOPMENT OF INTEROPERABLE SMART CARD SYSTEM FOR PUBLIC TRANSPORTATION IN HANOI.”
- ✧ September 2022; JET organized the other “AFC Seminar” with attendance from HURC1, concerned agencies under HCMC-PC, local financial institutions etc. The speakers, the suppliers related to the AFC system for Metro Line 1, introduced general information about AFC system and IC cards such as a comparison between types, usage in Ho Chi Minh City, the case in Jakarta etc.
- ✧ Upon the C/P training in Jakarta, HURC1 observed the actual situation of AFC system in Jakarta.
- ✧ JET shared with C/P Japanese experience etc. about promotion activities.

As of May 2025, the AFC system of Metro Line 1 supposed to be installed as part of CP3, which supplies E&M system including rolling stock, has not yet been put into operation due to

delays in construction of the building where the system is supposed to be installed. The ticket vending machines for this system have been already installed in the stations remaining deactivated. Instead, the fare collection systems installed by HURC1 have been in operation since the commencement. Currently passengers can pay the fare in the 3 ways below,

① Cash

Passengers buy paper QR code tickets. QR code readers installed in front of the automatic fare gates are linked to the gates.

② Mobile phone application

Passengers can buy QR code tickets through the mobile application “HCMC Metro HURC.” The fare is paid through the application with credit cards, MoMo, ShopeePay.). In addition, with a QR code from MoMo or ShopeePay, passengers can directly pass the fare gates. HURC1 provides 1000 VND discounts to promote this cashless payment.

③ Account based ticketing

The card readers are attached to the automatic fare gates of each station, allow passengers to take Metro Line 1 with credit cards or bank cards. Upon the commencement, only Master Cards were accepted, however, as of April 2025, Visa Card, Napas (National Payment Service) are also available. So far, no serious issues have happened, however, since it takes about 3 seconds for QR code ticketing to open the gates, it is concerned that it may cause long queues at the gates when crowded.

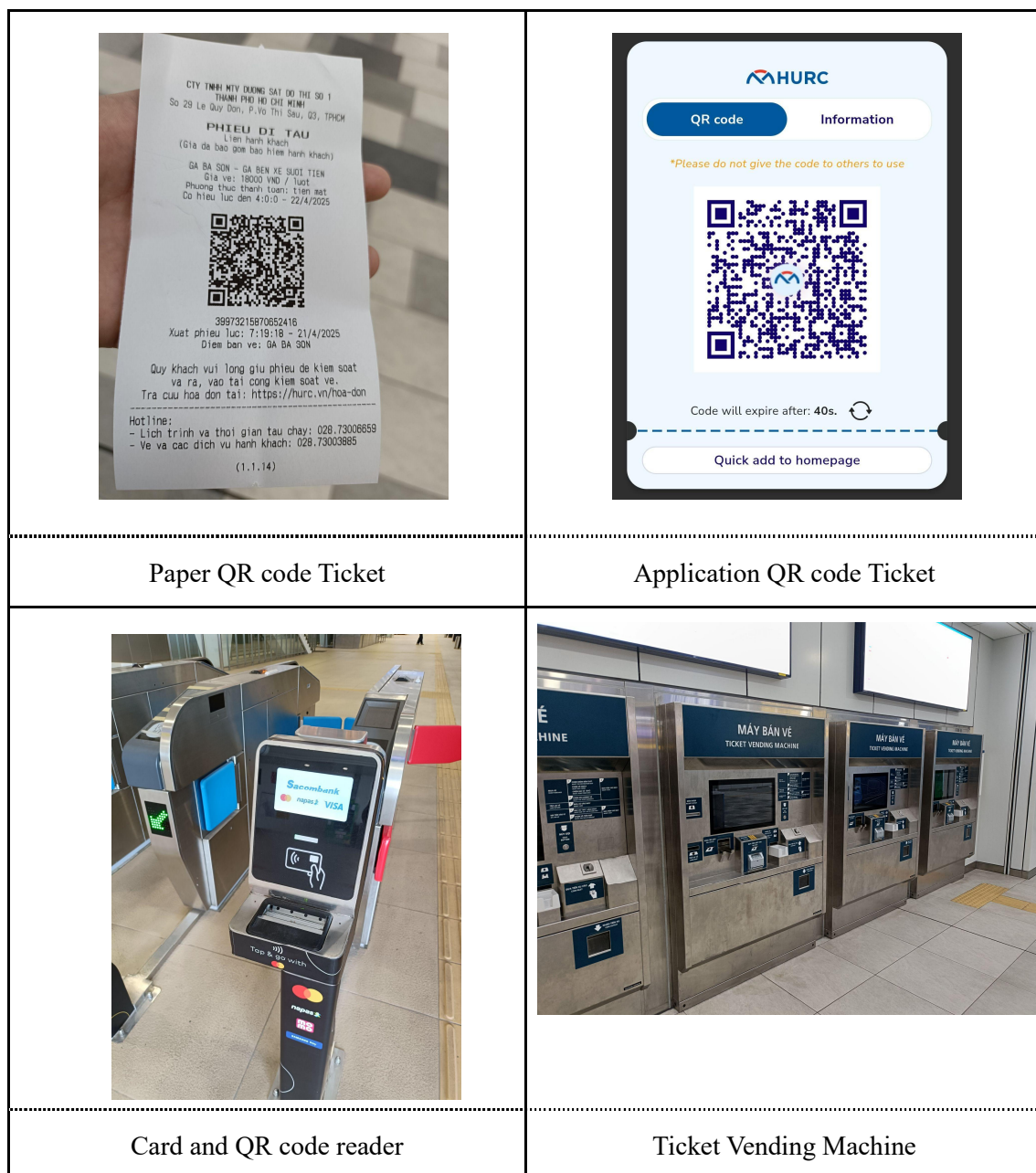


Figure 1: Current Situation of Fare Collection System

*Refer to Annex 2.2 for the deliverables

[Output 5] Necessary software for business management not included in CP4 of HURC1 is established.

5-1. To give advice in design office IT system based on the view point of end user.

5-3. To support for requests and adjustment to CP4 from the HURC1 regarding "IT system" function.

Activity 5-1; Since the CP4 contractor was not procured during the assistance period of TC2, JET was not able to make direct proposals by reviewing the actual design documents. Instead, JET made a check list with check points on the design documents which should be made by the CP4 contractor, so that HURC1 will be able to review the documents once they are created by the contractor.

Activity 5-3; Since the bidding process for CP4 had not started yet, JET was not able to access the bidding documents themselves. Instead, JET reviewed the hard copies of the draft RFP (Request for proposal) and confirmed that the IT system would be equipped with sufficient function.

*Refer to Annex 2.1 for the deliverables

5-2. To support for requests and adjustment to CP4 from the HURC1 regarding "IT system" function.

5-4. To check system for hand-over of the related facilities and take-over documents after completion of construction not included in the specification of CP4.

5-5. To make plan and budget measures related to system development related to the above-mentioned work.

Activity 5-2;

- ✧ C/P and JET developed “IT System Security Regulation” based on the Vietnamese regulations
- ✧ To apply the IT System Security Regulation above, workflows, list of items to manage, template of forms etc. are necessary. C/P and JET made such documents from the viewpoint of IT system operations.
- ✧ C/P and JET decided to target work record system, shift planning system, certification management system, training management system as the other IT systems than CP4. Then based on the related rules, C/P and JET developed the workflows for those systems.

- ✧ C/P and JET developed the workflow of IT system operations.

Activity 5-4;

- ✧ C/P and JET developed the check lists for taking over of the target systems.

Activity 5-5;

- ✧ Although C/P and JET were supposed to implement the introduction of the target IT systems after the commencement of Metro Line 1, however, since it was unclear when the commencement would be, C/P requested JET to prepare preparatory documents which enable HURC1 to procure those systems smoothly in the future. JET developed such documents based on Japanese experience due to absence of experience in HURC1.
- ✧ After that, since C/P and JET modified the workflows for system planning and system operation, those modifications were reflected in the preparatory documents.
- ✧ C/P requested local vendors to provide rough quotations for budgeting. C/P and JET drafted the specification.

*Refer to Annex 2.1 for the deliverables

[Output 6] Necessary infrastructure for business management of HURC1 will be developed.

6-1. To check as the position of end user (HURC1) and take over the railway tracks and civil works from contractors and GC (except for the actions included in the contract with GC and each contractor)

6-2. To check as the position of end user (HURC1) and take over the facilities from contractors and GC (except for the actions included in the contract with GC and each contractor)

6-3. To check as the position of end user (HURC1) and take over the E&M from contractors and GC (except for the actions included in the contract with GC and each contractor)

6-4. To check as the position of end user (HURC1) and take over the signals and telecommunication system from contractors and GC (except for the actions included in the

contract with GC and each contractor)

6-5. To check as the position of end user (HURC1) and take over the rolling stock from contractors and GC (except for the actions included in the contract with GC and each contractor)

6-6. To check as the position of end user (HURC1) and take over the station and depot facilities from contractors and GC (except for the actions included in the contract with GC and each contractor)

6-7. To check as the position of end user (HURC1) and take over the headquarter office IT system from contractors and GC (except for the actions included in the contract with GC and each contractor)

Since handover of Track and Civil Structures (Activity 6-1), Architectural & Electrical Facilities (Activity 6-2), E&M (Activity 6-3), Signaling & Communication System (Activity 6-4), Rolling Stock (Activity 6-5), Stations and Depot (Activity 6-6) shall be done under the responsibility of the contractors and GC, in this project, and Metro Line 1 had not been put into operation within the original TC2 project period (the extension period was for the OSMS), JET explained to C/P the general items to be checked upon handover, based on the cases of Japanese urban railway operator such as Tokyo Metro, Osaka Metro.

The Activity 6-7 (IT System) was covered in the Activity 5-4.

*The deliverables are merged with the rules etc. developed through Activity 2.5, 2.7

[Output 7] Cooperation with urban railway management is established with other lines in Ho Chi Minh, Vietnam domestic and neighboring countries.

7-1. To cooperate with PMU of other urban railway lines in HCMC.

The Project Management Unit for Line 2 and the Preparatory Committee for Line 5 have been established, as the plans for those lines are on-going. Since HCMC-PC assigned HURC1 to operate and maintain those lines, HURC1 has been participating in the meetings related to those lines and the meetings with MAUR.

7-2. To cooperate with relevant organizations of Hanoi urban railway.

Hanoi Line 2A experienced remaining unopened for a while after the completion of the construction due to delays of the safety assessment. Hanoi Metro Company (HMC), the operator of Hanoi Line 2A, is the first O&M company for urban railways in Vietnam. C/P and JET contacted HMC to study this precedent in necessary procedures for the commencement such as the safety assessment including a site survey.

7-3. To cooperate with relevant organizations on Vietnamese urban railway.

To solve a number of issues (Project budget, O&M contract, Fare Policy, Non-rail business), HURC1 coordinated with concerned agencies under HCMPC such as Department of Transportation, DOF, DPI, MCPT etc. In addition, HURC1 coordinated with VNRA in the driver training, the safety assessment etc.

7-4. To cooperate with urban railway management companies in neighboring countries including Japan.

Since upon the commencement of this project, there was no urban railway lines operated in Vietnam, it was necessary to learn from the overseas countries with rich experience. Therefore, HURC1 supported by JET, tried to build relationship with urban railway operators in Japan or other Southeast Asian countries.

- ✧ HURC1 learnt from the experience of Tokyo Metro, Osaka Metro, Keihan Railway, who are involved in TC2 through the project activities.
- ✧ HURC1 established cooperation with Tokyo Metro by concluding the Minutes of Understanding.
- ✧ HURC1 obtained information about MRT Jakarta through JET
- ✧ During the 1st training in Japan, (January to February 2019), the participants visited Railway Technical Research Institute.
- ✧ Instead of the 3rd training in Japan, JET organized the training in Jakarta in October 2022. HURC1 members majorly visited MRT Jakarta.

2. Achievements of the Project

2-1. Outputs and indicators

Table 2 shows the achievement rates of the activities.

Table 2; The Achievement Rates of the Activities

Outputs	Contents	Achievement Rate
1	The capacity of urban railway regulatory organization is strengthened.	Mostly Achieved
2	Necessary systems, internal rules and plans for management of HURC1 are developed.	Achieved
3	Operation and maintenance ability of HURC1 staff is improved.	Achieved
4	Necessary planning, sales, public relations activities of HURC1 are carried out.	Achieved
5	Necessary software for business management not included in CP4 of HURC1 is established.	Mostly Achieved
6	Necessary infrastructure for business management of HURC1 will be developed.	Mostly Achieved
7	Cooperation with urban railway management is established with other lines in Ho Chi Minh, Vietnam domestic and neighboring countries.	Achieved

2-2. Project Purpose and indicators

Table 3 shows the results of “Overall Goal” and “Project Purpose.” It shows that the short-term goals were achieved, however, still it will take time after the commencement to fully evaluate the overall goal.

Table 3; The Evaluation of the Project Goals

Items	Contents	Means of Verification	Results
Overall Goal	Urban railway line 1 in Ho Chi Minh City is operated safely and reliably by HURC1.	Annual Report	<After the commencement up to present, there are no major issues. This shall be evaluated 3 years after the commencement > The annual report has not been published yet as the commencement

Project Purpose (Outcome)	Management ability to operate and maintain urban railway is developed in HURC1.	Draft document of tariff and level of service for urban railway. Number of trained & skillful staffs Safety certificate and operating permission Company regulations, working instructions and other necessary documents	<Achieved> - Fare policy was decided by HCMPC - Service Level was defined by the Operation Contract between HURC1 and MCPT - Number of trained staff for commencement (514) - Safety Certificate has been issued - Necessary documents for HURC1 have been developed
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3. History of PDM Modification

The PDM of this project was changed 4 times as the Record of Discussion (R/D) was amended. (Refer to Annex 3 for the details)

Table 4; History of PDM Modification

Month/Year	Outline of Modification
September 2020	It was found that the OSMS required significant work load and high level of expertise, OSMS experts were added to JET.
October 2022	Project period extension due to delays of the commencement or Metro Lien 1 (until December 2023)
November 2023	Project period extension due to delays of the commencement or Metro Lien 1 (until December 2024)
December 2024	Project period extension due to delays of the commencement or Metro Lien 1 (until June 2025)

III. Results of Joint Review

1. Results of Review based on DAC Evaluation Criteria

The project was rated as “B” by the DAC Evaluation. The details of the evaluation are shown below,

<Relevance; High>

Vietnamese Government, in the “The 9th Socio Economic Development (2011-15), pointed out that since the transport infrastructure in the large cities was insufficient and countermeasures to traffic congestions were continuously crucial, Hanoi and Ho Chi Minh City should develop urban railway systems. In Ho Chi Minh City, the transportation masterplan and its modified version indicated that Metro Line 1, the target project of TC2, had the first priority among the 8 lines (Currently it is 12 lines) as it would meet the future transportation demands. Therefore, strengthening the capacity of the O&M company to operate and maintain the line is indispensable. In recent years, “The 14th Socio economic Development (2021-25) and “The development strategy in the transportation sector (2021-25), Vietnamese Government stated that it would concentrate on the construction of high-speed railways and urban railways. In addition, Vietnamese Congress concluded the resolution No.188 to define the legal framework to boost the construction of urban railways both in Hanoi and Ho Chi Minh City. Since this project meets such demands, the relevance is evaluated as High.

<Coherence; High>

The direction to assist Socialist Republic of Vietnam (December 2012) by Japanese Government set “Economic Growth and Competitiveness” as one of the important goals. As such, Japanese Government intended to assist Vietnam to develop trunk land transport and urban railway networks and promote stable supply of energy and energy reduction. In addition, its implementation plan indicated that it was necessary to develop traffic networks to for people and logistics to meet the increasing demand and rapid urbanization. Furthermore, JICA’s analysis paper for Vietnam analyzed that in the large cities especially in Hanoi and Ho Chi Minh City, since serious traffic congestion makes overt problems, it is necessary to develop or improve subway systems or public bus transportation systems. Therefore, this project meets both of the directions of Japan and JICA.

<Effectiveness; High>

Due to delays with the construction of Metro Line 1, the project was affected to extend the

project period thrice. Eventually, the period for the support after the commencement was insufficient. This was below expectation.

However, strengthening assistance for OSMS, which was unexpected upon the beginning, is highly evaluated as a key factor for the commencement.

In addition, regarding the project purpose “Management ability to operate and maintain urban railway is developed in HURC1.”, all the means of verification, “Fare Policy, O&M contract, Opening staff (514 personnel), Safety Certification, Company rules etc.” have been completed.

Therefore, the effectiveness of this project is evaluated as High.

<Impact; High>

The system for safe operations of Metro Line 1 is about to be completed by the progress of HURC1’s internal system, which contributes to widening the options and convenience of people to move. The overall goal of the project, “Urban railway line 1 in Ho Chi Minh City is operated safely and reliably by HURC1.” cannot be evaluated at this moment, however, in fact, Metro Line 1 is being operated safely without any major accidents or incidents. (It must be evaluated upon the project evaluation after 3 years.) Since the urban railway network in the city is still poor, the effectiveness of the commencement is limited, however, it is as expected for the first step for the future full network.

Therefore, the impact of this project is evaluated as High.

<Efficiency; Low>

The project period was originally 5 years, however, due to delays with the construction of Metro Line 1, it experienced 3 times of extension, resulting in 2.5 years extension, which is +50% of the original period. In addition, it was found that unexpected workload and high level of expertise were required as it became necessary to formulate the OSMS in addition to the original scope. Then, JICA allowed JET to add 53.7% of the PM.

Therefore, the efficiency is evaluated as Low.

However, as mentioned above, the project extension due to delays with the construction of Metro Line 1 did not cause an increase of PM. Furthermore, the expected effectiveness of the project was able to be maintained by the extension.

Project Period; 5 years to 7.5 years (+50%)

Person Months; 133.9 PM to 205.82 PM (+53.7%)

<Sustainability>

(Governmental Policy/Institutional System)

In Vietnam, including Ho Chi Minh City, urban railways are being planned and constructed intensely in accordance with the development strategy in the transportation sector (2021-25). Since HURC1 is expected to be the operator of urban railways which are going to be constructed in Ho Chi Minh City, the skills transferred through TC2 will be utilized in each line.

(Finance)

HURC1, as a state-owned company, is provided with subsidy from the HCMPC in accordance with the O&M contracts. Hence, if HURC1 can effectively utilize the skills transferred through TC2 or by GC, it is unlikely to lack revenue, by being penalized significantly through the O&M contracts.

(O&M, Skills, Organization)

Since the commencement, HURC1 has been flexibly hiring personnel when lacking. JET did not transfer direct skills to operate and maintain urban railways through TC2 project, JET conducted 2 trainings in Japan, 1 online training, and 1 training in Jakarta before the commencement. In addition, utilizing the system such as the OSMS created through TC2 and the advisory service by GC, HURC1 is making efforts to improve its safety and reliability. Since such advisory service should be provided continuously, MAUR/HURC1 and GC are having discussions to extend the service period. In addition, HURC1 is planning to construct a training center assisted by Korea.

(Risk Management)

In general, initial failures are not rare for railways. Metro Line 1 has some technical issues such as overshooting in the rain, defect of platform screen doors, however, HURC1 and MAUR in cooperation with GC and the contractor, are trying to figure out the countermeasures.

Therefore, the sustainability is evaluated as High.

2. Key Factors Affecting Implementation and Outcomes

Figure 2 shows that originally this project was divided into 2 stages, the assistance for the commencement, and the assistance after the commencement. However, due to delays with the construction project of Metro Line 1, caused by delays with payment to the contractors, delays with the design approval, the pandemic of Covid-19, the project period was extended by 1 year temporarily, up to December 2023. However, due to further delays with the construction, the period was extended additional twice up to June 2025. As a result, the commencement date was delayed for 4 years from the original plan, which caused the project period to be extended by 2.5

years.

In addition, the assistance after the commencement was reduced from 2 years to only 6 months.



Figure 2; Comparison of major events of the Project

3. Evaluation on the results of the Project Risk Management

(1) Complexity of the entire project of Metro Line 1

<Difficulty>

TC2 project was affected by the complexity of the entire project of Metro Line 1.

- ✓ Demarcation of the concerned entities was complicated. Especially in recruitment and training for site personnel, HURC1 was responsible for recruitment, GC was for operation personnel’s training, the contractors were for maintenance personnel.
- ✓ There were various entities who are responsible for internal rules and plans of HURC1, which caused difficulty in formulating the OSMS.
- ✓ Since GC assists MAUR, the investor of Metro Line 1 while JET assists HURC1, the operator of the line, it was difficult to maintain consistency between deliverables from both sides. Although HURC1 was supposed to be the operator of Metro Line 1, it didn’t have contractual power to give inputs to the construction project. JET had no power to represent HURC1’s interests in the framework of technical cooperation.

<Mitigation of Difficulty>

- ✓ JET, who assists HURC1, the responsible body of recruitment, GC and Hitachi held regular meetings to exchange information about the recruitment and training.
- ✓ JET added the OSMS experts for necessary cooperation with GC.

<Learnings>

To export “Quality Infrastructure”, the direction of the government of Japan, railway project creation has to be improved. (Not only Ho Chi Minh Line 1 Project)

- ✓ Upon creating a railway project with Japanese aid, project management for construction, and O&M practices shall be taken into account.
- ✓ Project structure has to be simple as much as possible. Especially considering interactions between entities, there should be a sole entity to give input in terms of O&M. In this project, either GC or TC2 should have been the sole entity to advise O&M aspects to HURC1. Considering HURC1 had no experience on O&M,
 - “Shadow Operator” is the most effective, as it permanently stays and can backup the operator as the viewpoint of third party, which doesn’t belong to GC or the contractors.
 - GC can also stay with the operator permanently, however, as the nature of a construction project, it is likely that the O&M Team in GC is overlooked by the other team related to the construction as investors or designers tend to prioritize convenience of construction without consideration for O&M.
 - Experts are not expected to stay permanently in “Technical cooperation” projects. Therefore, it has a limit in assisting the counterpart. In addition, since the consultants have no power to represent the counterpart, it is difficult to give effective input to the design until the counterpart agency become knowledgeable and skillful enough. On the other hand, since this style is effective to enhance independence of the counterpart agency, if the counterpart agency is experienced at a certain level, this style is suitable.

Basically, input regarding O&M should be given from the planning stage to realize practical design for O&M. In that sense, the commencement of the series of technical cooperation projects starting with TC1 was done at the right time.

(2) Unpredictability in the Commencement Date

<Difficulty>

The construction of Metro Line 1 was delayed due to various causes including the pandemic of Covid-19, however, the changes in the commencement date were always officially announced just before the existing commencement date.

<Mitigation of Difficulty>

JICA and JET strongly requested the Vietnamese side to fix the commencement date, and JICA decided to extend the project thrice.

<Learnings>

- ✓ It is quite difficult for governmental agencies to modify the official project period once it is announced, however, it is necessary for railway projects to have flexibility in extension of the period, in case such necessity, which happens usually, arises. For instance, it is often adapted in railway projects abroad that the original contract contains an option to extend the contract. This lessens complicated procedures required to both sides.
- ✓ In a railway project, the official commencement date, which is announced by the government, and a practical commencement date for the project management should be applied. Any decisions related to the project management should be made based on the latter date.

(3) Frequent changes of C/P

<Difficulty>

After HURC1 was registered officially, major C/P agency changed from MAUR to HURC1, however, most of the existing C/Ps did not transfer to HURC1 from MAUR. In addition, as HURC1 hired new personnel for the headquarters, C/P members changed and increased frequently. Since this often causes loss of knowledge and skills transferred by JET, JET was forced to re-transfer its knowledge and skills from zero. In addition, after 2021, HURC1 ran out of the operating budget resulting in unpaid compensation.

<Mitigation of Difficulty>

JET asked C/P agency to internally hand over the knowledge and the skills provided by JET when new C/P members came in. In addition, JET tried to reduce workload by interviewing C/Ps about their degrees of understanding promptly, explaining according to the degrees of

understanding, or having joint meetings on the common knowledge and skills for multiple fields.

<Learnings>

Although during the period when MAUR was the major C/P agency, JICA and JET had been strongly requesting MAUR to assign C/Ps, most of the original C/Ps left. When the major C/P agency is supposed to be replaced like this project, permanent assignment of C/Ps could be one of the conditions to continue the project upon the timing of C/P agency transaction. In addition, upon the signing of the record of discussion (R/D) of a project, the agency with authority to provide project budget to the C/P agency should be involved and JICA should request such agency to surely allocate sufficient project budget.

(4) Unexpected Travel Bans

<Difficulty>

This project experienced travel bans due to the pandemic of Covid-19. JET had been trying to reduce consumption of PM by using digital communication tools, as this project didn't have sufficient PM originally, while meetings were held in person. However, due to the travel bans by the pandemic of Covid-19, JET were forced to have online meetings with C/Ps. In Vietnam, communications between JET and C/P usually needs an interpreter as English cannot be the common language there. Such communication had difficulties even through an interpreter, due to unstable internet connection or lack of non-verbal information.

<Mitigation of Difficulty>

JET introduced a high-quality speaker and higher-quality internet connection to improve verbal communication in meetings. In addition, to share the progress of the activities smoothly, JET prepared a “Progress” sheet in its cloud storage, so that C/P and JET were able to share the latest updates. This enhances the progress of each activity as the progress can be seen by everyone. Furthermore, the expert who permanently stay in Ho Chi Min City and the local coordinator functioned as the liaisons.

<Learnings>

It is impossible to predict unexpected events. In projects such as this project, daily

communication with C/Ps is crucial to proceed with the project activities. During the early stage of this project, JET tried to arrange experts’ trips not to make periods when no expert is mobilized, however, it cannot be done when such travel bans are applied. Since JET had an expert who permanently stays there and the local coordinator fortunately, JET could successfully communicate with C/Ps at least.

However, to overcome such events, it is better to always assign some experts who are mobilized permanently on site unless the situation on site becomes too risky to stay, so that communication between JET and C/Ps would be secured.

In addition, stable internet connection is vital though it depends on the situation of countries or areas.

There was a good side effect of this event. The local coordinator and the interpreters obtained significant knowledge and skills through this project (especially by experiencing working almost independently without the experts during the pandemic.). Such personnel can contribute to Vietnamese railway industry even after the project. JET would like to recommend hiring and raising more local personnel in future projects for further technology transfer.

IV. For the Achievement of Overall Goals after the Project Completion

1. Prospects to achieve Overall Goal

To achieve the Overall Goal, HURC1 is required to proactively continue to make effort in utilizing and improving the deliverables of this project.

2. Plan of Operation and Implementation Structure of HURC1 to achieve Overall Goal

In the final official meeting of this project held on May 16, 2025, the substitute meeting for the final JCC, HURC1 presented the resolutions to achieve the overall goal. (Refer to Annex 7 for the details)

① OSMS

- ✓ Update and modification
- ✓ Training and audit

② Strengthening management and operation capacity

- ✓ O&M Advisory Service by GC
- ✓ Partner companies for maintenance
- ✓ Safety awareness development

③ Operation and Maintenance

- ✓ System to manage maintenance
- ✓ Preparation for coming lines

3. Recommendations for HURC1

In the final official meeting, JET made a proposal including they way forward to the Overall Goal (Refer to Annex 8 for the details)

① **Strengthening the corporate management and O&M capacity of HURC1**

- ✓ Simple code of conduct
- ✓ Cross-sectional cooperation and collaboration
- ✓ System to learn from failures
- ✓ Service Policy (Not only safety policy)
- ✓ Management of various fare collection methods
- ✓ Utilization of data (Origin to Destination)

② **OSMS (Update and**

③ **Items to do for coming lines**

- ✓ Standardization of OSMS (to be utilized for coming lines)
- ✓ Application of RAMS from the planning stage
- ✓ HURC1’s involvement from the planning stage
- ✓ Utilization of Building Information Modeling
- ✓ Cooperation in human resources upon commencements

4. Other Recommendations for HURC1

Budget for O&M; As developing countries have been experiencing, there are high risks that

sufficient budgets for O&M including large-scale maintenance such as replacing facilities or spare parts are not prepared in a timely manner. Even in such cases, HURC1 cannot avoid its responsibility to operate and maintain its railway lines safely and reliably. Therefore, HURC1 should be allowed to have managerial autonomy such as fare level setting, rights to do non-fare business etc. to deal with such situations flexibly.

Attraction as a business partner; The O&M Advisory Service is ongoing with the minutes of understanding, however, since there’s no contract, the consultant fee remains unpaid. This kind of delays with decision making in contractual matters also happened to the consultant and the contractors. If such a case happens from now on, this should be one of the risk factors for relationship with maintenance providers, procurement of spare parts, replacement of facilities etc. It is crucial for HURC1 to be a reliable business partner by the time when large-scale replacement of spare parts is necessary, 4 years later from the commencement.

Attraction for labor market; As salary level of private sector is raising in Vietnam, HURC1 should follow the trend to attract job seekers. It is difficult to compete with the salary level of a state agency, HURC1 should be allowed to have managerial autonomy in human resource management.

ANNEX 1: Results of the Project

1. List of Dispatched Experts
2. List of Counterparts
3. List of Trainings

ANNEX 2: List of Deliverables from the Project

ANNEX 3: R/D (The Latest Version) (*)

ANNEX 4: Minutes of JCC (*)

ANNEX 5: Monitoring Sheet (*)

(*Remarks: ANNEX 3,4 and 5 are internal reference only.)

ANNEX 6: Achievement Rate of the Project

ANNEX 7: Plan of Operation and Implementation Structure of HURC1 to achieve Overall Goal

ANNEX 8: Recommendations for HURC1

(*) ANNEX 3,4 and 5 are for internal use only, not incorporated in the bound version.

Separate Volume: Copy of Products Produced by the Project (Internal Reference Only)

A) Deliverable List

B) Deliverables

1) Deliverables by R/D etc.

2) Deliverables from Mobility Management

3) Deliverables from OSMS

4) Training Materials (Training in Japan, Online Training, Training in Jakarta)

Result of Dispatched Experts

STRENGTHENING MANAGEMENT ABILITY OF OPERATION AND MAINTENANCE COMPANY FOR THE OPENING OF URBAN RAILWAY LINE 1 IN HO CHI MINH CITY

Position	Grade	Plan/Result	PM	Dispatch History			
				Entire Period	FY2023	FY2024	FY2025
Takahiro Tanisaka Project Manager	2	Original Plan	15.93	21	2	0	
		Latest Plan	15.93	21	2	0	
		Result	18.00	36	5	4	2
Takayuki Hagiwara Deputy Project Manager/Urban Railway Regulation	3	Original Plan	8.90	14	0	0	
		Latest Plan	8.90	14	0	0	
		Result	7.03	15	0	0	
Vu An Tuan Urban Railway Regulation	3	Original Plan	3.50	0	0	0	
		Latest Plan	3.50	0	0	0	
		Result	8.50	0	0	0	
Naoshi Sakai (Predecessor) Corporate Management	3	Original Plan	8.33	16	0	0	
		Latest Plan	8.33	16	0	0	
		Result	4.13	16	0	0	
Satoru Horiuchi (Successor) Corporate Management	3	Original Plan	1.95	3	0	0	
		Latest Plan	1.95	3	0	0	
		Result	1.22	3	1	0	
Kosuke Akimoto Human Resource Management	3	Original Plan	6.32	7	1	0	
		Latest Plan	6.32	7	1	0	
		Result	6.17	17	0	0	
Koya Honda Accounting	3	Original Plan	2.72	3	0	0	
		Latest Plan	2.72	3	0	0	
		Result	2.72	5	1	0	
Hiroshi Imaizumi Finance	3	Original Plan	4.00	5	0	0	
		Latest Plan	4.00	5	0	0	
		Result	0.50	0	0	0	
Yasuhiro Masuda General Administration	3	Original Plan	3.85	5	0	0	
		Latest Plan	3.85	5	0	0	
		Result	2.57	14	0	0	
Takayuki Tsuruoka (Predecessor) Public Relations	4	Original Plan	1.82	4	0	0	
		Latest Plan	1.82	4	0	0	
		Result	1.82	4	0	0	
Masao Kato (Successor) Public Relations	4	Original Plan	3.20	1	0	0	
		Latest Plan	3.20	1	0	0	
		Result	3.93	4	2	0	
Naoki Shitomi (Predecessor) Railway Engineering, Safety Management	3	Original Plan	18.93	9	0	0	
		Latest Plan	18.93	9	0	0	
		Result	18.93	8	0	0	
Daiju Nakao (Successor) Railway Engineering, Safety Management	5	Original Plan	5.07	6	0	0	
		Latest Plan	5.07	6	0	0	
		Result	5.15	4	0	0	
Kohei Ushida Urban Railway Operation	3	Original Plan	3.98	4	0	0	
		Latest Plan	3.98	4	0	0	
		Result	8.10	8	0	0	
Hideo Akashi Urban Railway Operation	3	Original Plan	3.05	2	0	0	
		Latest Plan	3.05	2	0	0	
		Result	3.25	3	0	1	
Minoru Sakuma (Predecessor) Civil Structure Maintenance	3	Original Plan	1.73	2	0	0	
		Latest Plan	1.73	2	0	0	
		Result	1.73	7	0	0	

Yuichiro Yamagisawa (Successor) Civil Structure Maintenance	3	Original Plan	0.92	1	0	0	
		Latest Plan	0.92	1	0	0	
		Result	1.50	1	0	0	
Masayoshi Nakajima (Predecessor) Rolling Stock Maintenance	3	Original Plan	0.67	3	0	0	
		Latest Plan	0.67	3	0	0	
		Result	0.67	3	0	0	
Makoto Shimizu (Successor 1) Rolling Stock Maintenance	3	Original Plan	4.83	0	0	0	
		Latest Plan	4.83	0	0	0	
		Result	1.25	0	0	0	
Daiki Nakamura (Successor 2) Rolling Stock Maintenance	4	Original Plan	1.52	5	0	0	
		Latest Plan	1.52	5	0	0	
		Result	1.50	2	0	0	
Takeshi Ikeda (Predecessor) Electrical Facility Maintenance	3	Original Plan	0.20	1	0	0	
		Latest Plan	0.20	1	0	0	
		Result	0.20	1	0	0	
Atsushi Inoue (Successor) Electrical Facility Maintenance	3	Original Plan	4.25	4	0	0	
		Latest Plan	4.25	4	0	0	
		Result	2.13	5	0	0	
Masaaki Yokota (Predecessor) AFC Maintenance	3	Original Plan	0.17	1	0	0	
		Latest Plan	0.17	1	0	0	
		Result	0.17	1	0	0	
Atsushi Inoue (Successor) AFC Maintenance	3	Original Plan	2.51	3	1	0	
		Latest Plan	2.51	3	1	0	
		Result	1.17	2	0	0	
Yoshikazu Ishihara Operational Safety Management	2	Original Plan	19.48	20	3	0	
		Latest Plan	19.48	20	3	0	
		Result	22.75	20	8	8	1
Ryosuke Mino Operational Safety Management	3	Original Plan	2.75	5	0	0	
		Latest Plan	2.75	5	0	0	
		Result	0.00	0	0	0	
Bunpei Miyazaki Operational Safety Management	5	Original Plan	2.75	5	0	0	
		Latest Plan	2.75	5	0	0	
		Result	0.00	0	0	0	
Tomoyuki Taniguchi Non-rail Business	3	Original Plan	4.61	5	0	0	
		Latest Plan	4.61	5	0	0	
		Result	4.83	8	2	0	
Hideo Hayashi Non-rail Business	3	Original Plan	4.61	5	0	0	
		Latest Plan	4.61	5	0	0	
		Result	4.97	9	2	0	
Yasunao Koizumi IT System	4	Original Plan	4.63	5	0	0	
		Latest Plan	4.63	5	0	0	
		Result	4.63	3	0	0	
Mituhiko Ishida IT System	3	Original Plan	3.90	4	0	0	
		Latest Plan	3.90	4	0	0	
		Result	3.90	3	0	0	
Yosui Seki Mobility Management	2	Original Plan	5.32	6	0	0	
		Latest Plan	5.32	6	0	0	
		Result	6.48	11	1	1	1
Tomoko Abe Mobility Management	3	Original Plan	5.72	6	0	0	
		Latest Plan	5.72	6	0	0	
		Result	6.93	8	2	0	
Masayoshi Iwasaki Business Scheme/Analysis	3	Original Plan	6.53	7	0	0	
		Latest Plan	6.53	7	0	0	
		Result	3.93	5	0	0	
Shinsuke Mogi (Predecessor)	5	Original Plan	6.32	8	0	0	

Project Coordinator/Monitoring		Latest Plan	6.32	8	0	0	
		Result	3.50	5	0	0	
Yasuha Mizukami (Predecessor)	5	Original Plan	0.00	0	0	0	
Project Coordinator/Monitoring		Latest Plan	0.00	0	0	0	
		Result	1.10	2	1	0	
Moe Imafuku (Predecessor)	5	Original Plan	0.00	0	0	0	
Project Coordinator/Monitoring		Latest Plan	0.00	0	0	0	
		Result	0.00	0	0	0	
Ayako Tatsuumi (Sucessor 1)	5	Original Plan	3.22	3	0	0	
Project Coordinator/Monitoring		Latest Plan	3.22	0	0	0	
		Result	2.02	2	0	0	
Yuki Itabashi (Successor 2)	5	Original Plan	0.00	0	0	0	
Project Coordinator/Monitoring		Latest Plan	0.00	0	0	0	
		Result	0.13	0	0	0	1
Satoru Hoeiuchi	3	Original Plan	3.43	7	2	0	
Organizational Management		Latest Plan	3.43	7	2	0	
		Result	7.13	13	6	7	
Atsushi Omori (Predecessor)	3	Original Plan	4.30	8	2	0	
Organizational Management (HRM)		Latest Plan	4.30	8	2	0	
		Result	3.03	6	5	0	
Nobuo Nakai (Seccessor)	3	Original Plan	0.00	0	0	0	
Organizational Management (HRM)		Latest Plan	0.00	0	0	0	
		Result	3.00	4	0	4	2
Hideo Akashi	3	Original Plan	4.43	9	3	0	
Operational Safety (Station)		Latest Plan	4.43	9	3	0	
		Result	6.33	16	5	10	1
Kennichi Koga	3	Original Plan	4.23	9	3	0	
Operational Safety (Train Operation)		Latest Plan	4.23	9	3	0	
		Result	4.17	10	3	7	
Daiki Nakamura	4	Original Plan	3.17	6	3	0	
Maintenance Safety (Rolling Stock)		Latest Plan	3.17	6	3	0	
		Result	2.82	11	4	6	1
Daiju Nakao	5	Original Plan	8.07	12	4	0	
Maintenance Safety (E&M)		Latest Plan	8.07	12	4	0	
		Result	9.47	18	11	6	1
Original Plan Total			205.82	224	24	0	
Latest Plan Total			205.82	221	24	0	
Result (Total)			203.46	313	59	54	10

List of Trainings

	Training	Period	No. of Trainees
1	1 st Training in Japan	January 14 to February 2, 2019	6
2	2 nd Training in Japan	February 11 to 29, 2020	10
3	Online Training	June 7 to 11, 2021	14
4	Training in Jakarta	October 18 to 28, 2022	14

1st Training in Japan (2019)

Day	AM	PM
Jan 14 (Mon)	Flying to Japan	
Jan 15 (Tue)	Orientation by JICA	Orientation by Tokyo Metro Company Profile of Tokyo Metro
Jan 16 (Wed)	<Lecture> Safety Technology Department	<Site visit at Kayabacho Station> Disaster Prevention Facilities Security Facilities
Jan 17 (Thu)	<Lecture> Introduction of Corporate Planning Headquarters General Affairs Department	<Lecture> Human Resource Department Public Relations Department
Jan (Fri)	<Lecture> Accounting and Finance Department Audit Unit	<Lecture> Station Operation Department Train Operation Department
Jan 21 (Mon)	<Site visit at Toyochō Station> Peak hour operation in the station Station Electrical Facilities	<Site visit at Kotake Driver's Office> Driver Management at the office Observation of driving on Driver's Cabin

Day	AM	PM
Jan 22 (Tue)	Rolling Stock Department Infrastructure Maintenance Department Electrical Department	<Site visit at Ayase Depot> Rolling Stock Inspection Yard and Workshop Infrastructure Maintenance site office Electrical Facility Maintenance site office
Jan 23 (Wed)	<Lecture> Demand Generation and Marketing Department Business Development Department (Non-Rail Business)	<Site visit> Inbound activities (at Ueno Station) Commercial facilities (at Nishikasai Station, Ikebukuro Station, Omotesando Station)
Jan 24 (Thu)	<Lecture> Railway Planning Department Renovation Construction Department	<Site visit> Customer Center Large scale improvement Construction Site at Minami Sunamachi Station
Jan 25 (Fri)	<Lecture> Comprehensive Learning and Training Center	<Site visit> Comprehensive Learning and Training Center
1/28(月)	<Site visit> Railway Technical Research Institute (Profile, Research, Proposal for Vietnam)	<Lecture> Railway Regulation (Organization, Regulatory structure, Fare Policy) in Japan by Ministry of Land, Infrastructure, Transport and Tourism.
1/29(火)	<Lecture> Key Issues for Urban Railway Management by Dr. Shigeru Morichi, Professor, National Graduate Institute For Policy Studies	Interim wrap up
1/30(水)	Orientation for practical training by Tokyo Metro	<Practical Training; Day shift> Station Operation Rolling Stock Maintenance Infrastructure Maintenance Electrical Facility Maintenance Warehouse
Jan 31	<Practical Training; Overnight Shift >	

Day	AM	PM
(Thu)	Station Operation Rolling Stock Maintenance Infrastructure Maintenance Electrical Facility Maintenance	
Feb 1 (Fri)	Practical Training and break	Wrap-up Meeting Closing Ceremony by JIC
Feb 2 (Sat)	Flying back to Vietnam	

2nd Training in Japan

Day	AM	PM
Feb 11 (Tue)	Flying to Japan	
Feb 12 (Wed)	Orientation by JICA	Orientation by Tokyo Metro Company Profile of Tokyo Metro
Feb 13 (Thu)	<Lecture> Safety Technology Department	<Site visit at Kayabacho Station> Disaster Prevention Facilities Security Facilities
Feb 14 (Fri)	<Lecture> Introduction of Corporate Planning Headquarters General Affairs Department	<Lecture> Human Resource Department Public Relations Department
Feb 17 (Mon)	<Lecture> Accounting and Finance Department Railway Planning Department	<Lecture> Station Operation Department Train Operation Department
Feb 18 (Tue)	<Site visit at Toyochō Station> Peak hour operation, Station Facilities <Site visit> Customer Center	<Site visit at Kotake Driver's Office> Driver Management at the office Observation of driving on Driver's Cabin
Feb 19 (Wed)	<Lecture> Rolling Stock Department	<Site visit at Nakano Depot> ◇Inspection Yard and Workshop

Day	AM	PM
Feb 20 (Thu)	<Lecture> Electrical Department <Site visit at Ayase Depot> Electrical Facility Maintenance Site Office	<Lecture> Infrastructure Maintenance Department <Site Visit at Ayase Depot> Infrastructure Maintenance Site Office
Feb 21 (Fri)	<Lecture> Demand Generation and Marketing Department <Site visit> Inbound activities (at Ueno Station)	<lecture> Business Development Headquarters <Site visit> Commercial facilities at Nishikasai Station, Ikebukuro Station, Omotesando Station.
Feb 25 (Tue)	<Lecture> Comprehensive Learning and Training Center	<Site visit> Comprehensive Learning and Training Center Orientation for practical training by Tokyo Metro
Feb 26 (Wed)	<Practical training; Day shift> Driver's office Infrastructure Maintenance Site Office Electrical Facility Maintenance Site Office Commercial Facilities	
Feb 27 (Thu)	<Practical training; Overnight Shift> Station Rolling Stock (Inspection Yard, Workshop) Electrical Facility Maintenance Site Office	
Feb 28 (Fri)	Practical training and break	Wrap-up Meeting Closing Ceremony by JICA
Feb 29 (Sat)	Flying back to Vietnam	

Online Training (2021)

Day	Lecture
June 7 (Mon)	◆ Practices of Tokyo Metro ◆ Business Plan ◆ Human Resource Management System ◆ Training Plan ◆ PR Activities upon the commencement of Fukutoshin Line
June 8 (Tue)	◆ Safety (Safety Managemet) ◆ Occupational Safety and hygiene ◆ Safety (Preventive measures for accidents and disasters) ◆ Station Operation (Function of Station Operation Department, Duties of Station Staff) ◆ Station Operation (Handling of Ticket, Farebox Revenue) ◆ Station Operation (Platform Management, People with disability)
June 9 (Wed)	◆ Train Operation (Operation of Driver's offices) ◆ Train Operation (Duties of drivers) ◆ Train Operation (Train Operation Plan) ◆ Rolling Stock (Daily Inspection) ◆ Rolling Stock (Monthly Inspection) ◆ Rolling Stock (Overall Inspection)
June 10 (Thu)	◆ Electrical Facilities (Introduction) ◆ Electrical Facilities (Regular Inspection) ◆ Electrical Facilities (Corrective Maintenance) ◆ Non-rail Business
June 11 (Fri)	◆ Infrastructure Maintenance (Outline) ◆ Infrastructure Maintenance (Track) ◆ Infrastructure Maintenance (Building Facilities) ◆ Infrastructure Maintenance (Civil Structure) ◆ Wrap-up

Training in Jakarta (2022)

Day	AM	PM
Oct 18 (Tue)	Flying to Jakarta	
Oct 19 (Wed)	Orientation by JICA	<Observation> Urban Railways <Lecture by third party > IC Card
Oct 20 (Thu)	<Lecture by MRT Jakarta> Company Profile, Outline of O&M	<Presentation by HURC1/MAUR> Organization Profile、 Current Issues <Lecture by Tokyo Metro> Comprehensive Learning and Training Center, Electrical Facilities
Oct 21 (Fri)	<Site visit at MRT Jakarta> Station Operation, Train Operation, OCC	<Site visit at MRT Jakarta> Inspection (Track and Power)
Oct 24 (Mon)	<Site visit MRT Jakarta> Rolling Stock, Track and Civil, Electrical Facilities	<Interview to MRT Jakarta> Safety
Oct 25 (Tue)	<Lecture by KCI Company Profile etc.	<Interview to MRT Jakarta> Accounting and Finance, Maintenance
Oct 26 (Wed)	<Site visit at LRT Jabodebek. OCC, Depot	Preparation for wrap-up
Oct 27 (Thu)	Wrap-up (Presentation by MAUR./HURC1)	Closing Ceremony by JICA
Oct 28 (Fri)	Flying back to Vietnam	

貸与物品リスト
List of Property Lending

業務名称 (Name of Project) :ベトナム国ホーチミン市都市鉄道規制機関及び運営会社能力強化プロジェクト

対象国 (Country) :ベトナム

事業担当部課 (Division in Charge) :社会基盤部 運輸交通グループ 第三チーム

(2025年6月現在)
(As of June 2025)

物品名称 (Name of Property)	規格・品番 (Standard, Part Number)	個数 (Quantity)	取得価格 (Purchase Price)			検査合格日 (Date of Inspection Passed)	配置場所 (Location)	現況 (Current State)	備考 (Remarks)	事業終了後の 取扱い (After Completion of Project: Handover/Return)
			取得価格 (Purchase Price)	通貨 (Currency)	日本円換算 取得価格 (In Japanese Yen)					
ラップトップPC（マウス含む）	PC: Laptop Dell Vostro 3468 マウス: Logitech M221	4	49,880,000.00	VND	¥235,234	2019/03/09	プロジェクトオフィス	PC, マウスともに 使用不可, 廃棄済		-
コピー複合機	RICOH AFC10 MP C4504exSP	1	192,500,000.00	VND	¥925,925	2018/9/27	プロジェクトオフィス	稼働中		HURC1に譲渡
					¥0					
					¥0					
					¥0					
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					¥0					
【以下、JICAから貸与されている物品 (Property Lent by JICA)】										

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注3）「現況」欄は、「稼働中」、「故障：修理中」、「故障中」、「亡失」、「その他」の選択肢で記載し、「稼働中」以外の場合は、備考にその状況を説明してください。契約書附属書Ⅰ「共通仕様書」第22条の規定に基づき、自己の故意または過失により貸与された物品を滅失又はき損したときは、代替品の返還、原状復帰、又は損害賠償を求められることがありますので、そのような事態が発生したときは、速やかに監督職員に相談してください。

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注5）「事業終了後の取扱い」欄は、「実施機関に譲与」／「事務所・支所に返還」の選択肢で事業終了後の取扱いを記載するとともに、譲与／返還手続きの完了日付を記載してください。これらの取扱いは、事業終了時点で発生するため、それまでは「事業終了後の取扱いに係る想定」として、「実施機関に譲与予定」／「事務所・支所に返還予定」／「未定」の選択肢で記載しておいてください。

注6）なお、事業終了後に実施機関に譲与した場合は、実施機関の長又はそれに準ずる者が署名した受領書を徴取し、その原本をJICA在外事務所へ提出、その写しを経費精算報告書に添付してください。事務所に返還した場合は、事務所から受領書を取得し、経費精算報告書に添付してください。万が一、履行期限内に受領書を取り付けられない場合には、在外事務所へ報告のうえ、「事業終了後の取扱い」欄に「受領書取り付け中。〇〇事務所了承済み」と記載し、本リストに在外事務所からの確認サインを得て、領収書とともに精算報告書に添付してください。

注7）「JICAから貸与されている物品」については、JICAが貸与するに際して、「物品名称」、「規格・品番」、「日本円換算取得価格」、「検査完了日」をお伝えするので、その情報を記載してください。

注8）本リストを「コンサルタント業務従事月報」に添付して提出する際には、当該物品が配置場所に存在していることを確認（現品対査）してください。

注9）本リストの項目は日英併記していますが、内容は日本語での記載でも構いません。また、以下注書きの英訳は本リスト提出時に印刷範囲に含める必要はありません。

Deriverables
(R/D)

Category	R/D number	Deliverable number	Acticvity	Deliverable Name		
				Name on RD	Actual Name	Name on Deliverables as of June 2025
0. Regulation		1~7	2-3	Safety Certificate	Operational Safety Management System	1) Concessionary Fare Scheme for HCMC MRT1 2) Fare Policy Proposal for HCMC MRT1 3) O&M contract_Draft TOC 4) O&M Contractual Framework for HCMC MRT1 5) Projecting MRT1 Operation for 2023-2027 6) Support to revise Fare Scheme Proposal for HCMC MRT1 7) Workshops for O&M Contract related Issues
			1-2	Operation Regulation	"Regulations on urban rail transport operation'	
			1-2	Operation Regulation	"Regulations on the order of construction, publication of load orders and speed orders on urban railways.	
			1-2	Maintenance Regulation	"Regulations on management and maintenance of urban railway infrastructure'	
			1-2		Regulation on transportation by urban railways	
			1-2	-	O&M Contract	
			1-2	-	O&M Cost	
			1-2	Fare Policy	Fare Policy	
			1-2	-	Institutional Framework	
			1-2	-	Institutional Framework	7)-add1 Proposed IF for HCMC UR 7)-add2 IF for HCMC UR
			2-4	-	Establishment Plan (Outline)	No Deliverables in TC2
			2-4	-	Establishment Plan (Details)	No Deliverables in TC2

1.Planning	1-1	8	2-4	Article of Incorporation	Charter of O&M Company	Charter
	1-2	9	2-5	Regulation for Board Meeting	Regulation on meeting, informing, report of HURC1 (issued by Decision no 13/QD-HDTV dated 29 April 2020 by HURC1's Board of Council Members)	Decision 13 QD-HDTV 29 April 2020 Regulations on Meeting-Report HURC1
	1-3	10	2-5	Operation Manual on Board Member Meeting	Work Assignment on Member of Directors Board (issued by Decision no 32/QD-DSDT dated 12 August 2019 by HUIRC1's Director)	Decision 32 QD-DSDT 12 August 2019 on Task assignment to HURC1 BOD
	1-4	11	2-5	Regulation for Board of Auditors	Work Assignment on Member of Auditors Board (Not Available) Suggested to be: "REGULATION ON OPERATION OF HURC1'S BOARD OF CONTROLLER AND CONTROLLER"	REGULATION ON OPERATION OF HURC1'S BOARD OF CONTROLLER AND CONTROLLER
	1-5	12	2-5	Company management policy	Corporate Philosophy (Drafted by JET and CP)	330-DSDT-TCKT-30.11.2022- on reference of corporate philosophy, mission and slogan
			1-2		Contract management Rule (Contract Framework, KPI Framework)	This item is included in the O&M Contract
		13-1~13-3	2-5		HURC1's Development strategy, 05-year business plan, yearly business plan	1) Company Development Strategy 2) 05-Year Business and Investment Plans (2020 – 2024) 3) Business and Development Investment Plan 2020
					The plan on works needs to be carried out in order to operate and exploit the metro line 1 effectively (the Plan	No Deliverables from JET
					Suggestions from HURC to MAUR on the contracts of Metro line 1 and issues that are relevant to O&M, training and skill transfer from contractors, GC to HURC.	No Deliverable from JET
					The draft of the proposal on receiving, managing, exploiting the assets formed from the construction project of Metro line 1 8/23/2021	No Deliverable from JET
					Develop process, economic - technical norms, unit prices and costs of urban railways.	No Deliverable from JET
					Coordinate with other departments and agencies in enhancing accessibility on UMRT Line 1.	No Deliverable from JET
	.				5. Participating in the Company's internal appraisal of regulations, regulations, guidelines and related assigned contents.	No Deliverable from JET
					05 year Maintainance contract (HTC)	No Deliverable from JET

2.Administration & Safety	2-1-1		2-5	Management Regulation on Internal Rules		No Deliverables (agreed with CP)
	2-1-2	14	2-4	Regulation on Authority by Jobs	Rules on authority by Jobs	Rules on Authority by Jobs
	2-1-3		2-5	Regulation on Service and Job Classification		
	2-1-4	15	2-5	Document Management Rule	Regulation on Document Management	Regulation on Document Storage
	2-1-5	16	2-5	Uniform Grooming Rule		Uniform Grooming Rule
	2-1-6		2-5	Work Manual and flow of General Affairs at the Head Office		No Deliverables (agreed with CP)
	2-2-1	17	2-4	Regulation for Safety Management System	Regulations on safety management at the Company HURC1	Rule on Safety Management
	2-2-2		2-7	Regulations for setting "Accident Prevention Committee"		merged into 2-2-7
	2-2-3	18	2-7	Regulation on Setting Internal Safety Audit System	Regulation for Safety Internal Inspection (tentative)	Rule on internal inspection
	2-2-4	19	2-7	Decision of "General Principles of Safety"	Safety Policy	Safety Policy
	2-2-5	20	2-7	Occupational Safety and Health Regulations	Rule on setting up Occupational Safety and Health Regulations	Rule on operation of OSH staff network
	2-2-6	21	2-7	Rule on reporting Accidents		Rule on setting up incident, accident, disaster rescue body
	2-2-7	22	2-7	Work Manual and Flow of Safety Management at the Head Office	Regulations on organization and operation of the Company Safety Council	Regulation on the operation of Urban railway Safety committee
			2-7	Regulation on "the Safety Training"	Regulations on safety training at the HURC1	merged into OSMS documents

3.Human Resources	3-1	23	2-4	Working Regulation	Working time regulation	Working time regulation (submitted in November 2020)
	3-2	24	2-4	Wage Regulation	Payment regulation	Payment regulation (submitted in November 2020)
	3-3	25	2-4	Organization Chart Regulation	Organization of the Company and its Power & Responsibilities of each Department/Division	Organization & Responsibilities(final)
	3-4	26	2-5	Staff Appraisal Regulation	employee assessments and classifications	employee assessments and classifications
	3-5	27	2-4	Regulation on Reward and Punishment	Reward and punishment regulation	Reward&Punishment regulation (submitted in November 2020)
	3-6	28	2-4	Regulation on Education and Training of Employees	Training regulations	Training Regulation(Submitted in November 2020)
	3-7	29	2-4	Regulation on Recruiting Employees	Recruitment regulation	Recruitment regulation(Submitted in November 2020)
	3-8	30	2-5	Work Manual and flow of Human Resources at the Head Office		Work Manual and flow of Human Resources at the Head Office
	-	31	2-4	None	Training Contract	Training Contract(Submitted in November 2020)
	-	32	2-4	Regulation on Service and Job Classification	Regulation on the Job classification and job description	Job classification and Job grading(Submitted in November 2020)

4.Accounting	4-1	33	2-4	Accounting Rule	Accounting rule	Regulation on financial management (official)
	4-2	34-1~34-4	2-5	Mnagement Rule on Contracts		1) Decision 2) Outline 3) Part A-Procedure on project management 4) Part B – Procedure on selecting contractor
	4-3		2-5	Selection Committee's Regulation on Limited Tendering		a part of 4-2
	4-4	35	2-5	Equipment Management Regulation	Merged into"Accounting Rules"	Rule on material management
	4-5		2-5	Fixed Asset Management Regulation		a part of 4-1
	4-6	36	2-5	Budget Management Rule	Budget&Settlement Rules	RULE ON INTERNAL EXPENDITURES OF URBAN RAILWAY ONE MEMBER COMPANY LIMITED NO. 1
	4-7		2-5	Closing Account Management Rule	Merged into"Budget&Settlement Rules"	a part of 4-6
	4-8		2-5	Facilities Management System		merged into 4-6
	4-9	37	2-5	Outsourcing Contract Rule	Service Agreement Rules	Contract Management_JPN_HND
	4-10		2-5	Accounting Audit Rule	Merged into"Accounting Rules"	a part of 4-1
	4-11		2-5	Handling Rule on Small Funds		a part of 4-1
	4-12		2-5	Prepayment and Approximate Payment Handling Rule	Advanced and Interim Payment Rules	a part of 4-1
	4-13	38	2-5	Cash Handling Rule at the Station	Cash handling at station regulation	Rule on handling cash at the station
	4-14		2-5	Development of Financial Statements	Merged into"Budget&Settlement Rules"	merged into 4-6
	4-15		2-5	Report and Payment of Tax		merged into 4-6
	4-16	39	2-5	Work Manual and Flow of Accounting at the Head Office	Accounting Manual	Work Manual and Flow for Finance & Accounting
			2-5	-	Budget &Settlement Manual	merged into Deliverable No.39
			2-5	-	Manual for Cash Handling at Station	merged into Deliverable No.39
			2-5	-	Asset Management Manual	merged into Deliverable No.39

5.Business	5-1-1	40	2-4	Public Transportation Regulation	General provision of Public Transportation for Urban Railways	General provision of Public Transportation for Urban Railways
	5-1-2	41	2-4	Transport Revenue Handling & Relevant Report Publishing Regulation	Provisions on handling of transport revenue and making related report	Provisions on handling of transport revenue and making related report
	5-1-3		2-4	Standard on Tariff Discounting	Rules for the sales of discounting tickets	included in 5-1-1 as Appendix
	-		2-4	-	Fare revision system	included in 5-1-1 as Appendix
	5-1-4	42	2-4	Lost and Found Regulation	Regulations on lost and search baggage	Regulation on lost and search baggage
	5-1-5	43	2-5	Work Manual and Flow of Passengers Business at the Head Office	Instructions on passenger service (At headquarters).	Instructions on passenger service (At headquarters)
	5-1-6	44	2-5	Passenger Flow Survey for Train Schedule Revision	Survey of passenger traffic adjusting the schedule of the MRT line 1	Survey of passenger traffic adjusting the schedule of the MRT line 1
	5-1-7	45	2-5	Checking System for Hand-over of the Related Facilities and Take-over Documents after Completion of Construction	To perform acceptance test and receive handover of station facilities and documents after the construction completion.	To perform acceptance test and receive handover of station facilities and documents after the construction completion
	5-2-1	46	2-4	Business Manner Rule of Station Staffs	Business manner of staff for passenger	Business Manner of staff for passengers
	5-2-2	47	2-5	Emergency Manual in the station		Manuals for emergency response in station
	5-2-3	48	2-5	Coordination with Maintenance Section at the Breakdown of Related Facilities in the Station	Procedure for repairing works and equipment in the station	Procedure for repairing works and equipment in the station
	5-2-4	49	2-5	Coordination with Outside Organization at Disaster Outbreak such as Fire in the Station	Coordinating with outside units when incidents occur at stations	Coordinating with outside units when incidents occur at stations
	5-2-5	50	2-5	Outsourcing Work in the Station (Cleaning etc.)	Rules for outsourcing of station work	Rules for outsourcing of station work
	5-2-6	51	2-5	Work Manual and Flow at the Station	Work instructions and passenger flow	Work instructions and passenger flow

	5-3-1	52-1,52-2	2-4	Management Rule on Non-Fare Business	Rule for Non Fare Business A) In-Station Business (EKINAKA)	1) Proposal on Non-rail biz (Decision section) 2) Proposal on Non-rail biz (Proposal section)
			2-4	-	Rule for Non Fare Business B) Advertising in Railway	
			2-4	-	Rule for Non Fare Business C) Utilization of Space under the Viaduct near the Station	
	5-3-2	53-1~53-3	2-5	Property Leasing Regulation	Contract standard for real estate lending	Property Leasing Regulation Appendix1) Business Model Diagram NRB(Business Management Inside The Station) Appendix 2) App_駅構内設置レイアウト提案_EN
	5-3-3	54	2-5	Railway Advertising Standards		Railway Advetising Standards
	5-3-4	55	2-5	Regulation on Sales Operation within Stations		Regulation on Sales Operation within Stations
	-	56	2-4		Mobility Management Plan	Mobility Management Action Plan
	5-4-1		2-5	Handling Manual related to Public Relations	Internal Communication Rules	No Deliverables (agreed with CP)

6.Operation	6-2	57	2-7	Work Manual for Driver (Prototype)	Work Manual for Driver	Driver's Manual
	6-3	58-1,58-2	2-7	Work Manual for Managers in Drivers' Depot (Prototype)	Work Manual for Managers in Drivers' Depot	Work manual for managers in driver's depot
	6-4	59	2-7	Work Manual for OCC Staff (Prototype)	Work Manual for OCC Staff	Work Manual for OCC Staff
	6-5	60	2-7	Operation Manual in Depotworkshop (Prototype)	Operation manual in Depot Workshop	Operation manual in Depot and Workshop
	6-13	61	2-7	Operation Manual for Station Staff (on Train Operation) (Prototype)	Regulations on functions and duties of the station operating department	Regulations on functions and duties of the station operating department
	6-14	62	2-7	Work Manual and Flow of Transport Operation at the Head Office		Headquarters work manual(Safety & Operation Department)
	6-15	63	2-7	Reporting to Regulatory Authorities Notifying the Related Matters		Reporting to regulatory authorities
	6-16	64-1~64-4	2-7	Technique for Creating Train Schedule, Operation Plans for Vehicles and Crew		1) Manuals (Train operation plan) 2) Rule for creating train schedule 3) Train schedule diagram of practice 4) 6-16_(EN)Work schedule of practice
	6-17	65	2-7	Implementation Plan of Train Schedule Revision		Implementation of the Train timetable revision
	6-18	66-1,66-2	2-7	Checking System for Hand-over of the Related Facilities and Take-over Documents after Completion of Construction		1) Checking system for hand-over of the related facilities 2) Commissioning when the new line is opened to traffic
7.Maintenance (Rolling Stock)	7-13	70-1~70-8	2-7	1. Work manual and flow of rolling stock at the Head office		• Overview of Operations of the Rolling Stock Department Organization and List of work in RS • Work flow for Human Resources in RS • Education Plan in RS • Work flow for Budget in RS • Meeting System of preventing malfunctions in RS • Countermeasures of human error in RS • Concept of PDCA management in RS • Method of internal audit in RS
	7-14	71	2-7	2.Reporting to regulatory authorities and notifying the related matters		Reporting to regulatory authorities and notifying the related matters in RS
	7-15	72	2-7	3. Concept regarding contract with contractor of rolling stock maintenance, maintenance standards and maintenance plans		System of standards for Rolling stock inspections_work flow of Inspection in RS
	7-16	73	2-7	4. Prehension of rolling stock maintenance		Types of Records and Approvers in RS
	7-17	74	2-7	5. Replacement and additional plan of rolling stock		Concepet of Renewal Plans in RS
	7-18	75	2-7	6. Checking system for hand-over of the related facilities and take-over documents after completion of construction		Concept of List of items to be checked in RS

8.Maintenance (Civil Engineering and Architecture including Facilities)	8-8-1	76-1,76-2	2-7	8-8-1- Concept regarding contract with contractor of civil engineering facilities and architecture facilities maintenance, maintenance standards and maintenance plan	JCC3: - Regulations on supervision and acceptance criteria for infrastructure maintenance of urban railway lines No. 1 (Based on Circular 06/2019/TT-BGTVT and Circular 42/2016/TT-BGTVT issued by MoT)	Methods of supervision and inspection of the construction and handover for civil engineering structures
	8-8-2	77-1,77-2	2-7	8-8-2- Prehension of civil engineering facilities and architecture facilities maintenance;	JCC3: - Regulations on management and maintenance of urban railway lines No. 1 (Based on Circular 16/2018/TT-BGTVT issued by MoT)	1) Regulation on Management and Maintenance of Urban Railway Infrastructure 2) Rule on Management of warehouses of Material and Equipment of HURC1
	8-8-3	78	2-7	8-8-3- Adjustment with related section for maintenance work;	JCC3: - Regulations on infrastructure maintenance implementation of urban railway lines No. 1 (Based on Circular 10/2016/TTLT-BGTVT-BTC and Circular 16/2018/TT-BGTVT issued by MoT)	Guidance on Organizing the Implementation of Management and Maintenance of Infrastructures of Urban Railway Line No.1 (Ben Thanh-Suoi Tien)
	8-8-4	79	2-7	8-8-4- Checking system for hand-over of the related facilities and take-over documents after completion of construction	JCC3: - Plan for taking over the project of urban railways lines No.1 (Based on Decree 46/2018/ND-CP issued by Prime Minister)	8-8-4,9-13-5,11-15 and 14-5 submit one common deliverable
			2-7	Others	JCC3: - Regulations on infrastructure management and protection of urban railway lines No. 1 (Based on Decree 46/2018/ND-CP and Decree 56/2018/ND-CP issued by Prime Minister) - Regulations on construction permission of essential works within the area of urban railway line No. 1 (Based on Circular 25/2018/TT-BGTVT issued by MoT)	No Deliverables (agreed with CP)
	8-8-1		2-7	Concept regarding Contract with Contractor of Architecture Facilities Maintenance, Maintenance Standards and Maintenance Plans		Merged into regulations of Civil and Track
	8-8-2		2-7	Prehension of Architecture Facilities Maintenance	- Rule on Inspection of Architectural Works - Manual for Management of maintenance materials and history (common internal rule with all Cp's coordination)	Merged into regulations of Civil and Track
	8-8-3	81	2-7	Adjustment with Related Section for Maintenance Work	- Rule on Inspection of Architectural Works - Manual for driving assistang of maintenance vehicle (common internal rule with all Cp's coordination)	Rule on Inspection of architectural works
	8-8-4		2-7	Checking System for Hand-over of the Related Facilities and Take-over Documents after Completion of Construction	Depot Facilities	Merged into regulations of Civil and Track

9.Maintenance (Track)	9-11	82-1,82-2	2-7	9-11- Work Manual and Flow of Railway Track Facilities at the Head Office	JCC2: - Manual for Track Inspection - Manual for Driving Assitant of Maintenance Vehicle - Rule on implementation of Maintenance Self-Inspection JCC3: - Regulations on infrastructure maintenance implementation of urban railway lines No.1 <i>(Based on Circular 10/2016/TTLT-BGTVT-BTC and Circular 16/2018/TT-BGTVT issued by MoT)</i>	1) Guidance on Organizing the Implementation of Management and Maintenance of Infrastructures of Urban Railway Line No.1 (Ben Thanh-Suoi Tien) 2) Manual for driving assistant of maintenance vehicle_190822
	9-12		2-7	9-12- Reporting to Regulatory Authorities Notifying the Related Matters	JCC3: - Regulations on infrastructure management and protection of urban railway lines No.1 <i>(Based on Decree 46/2018/ND-CP and Decree 56/2018/ND-CP issued by Prime Minister)</i> - Regulations on construction permission of essential works within the area of urban railway line No.1 <i>(Based on Circular 25/2018/TT-BGTVT issued by MoT)</i>	No Deliverables (agreed with CP)
	9-13-1		2-7	9-13-1- Concept regarding Contract with Contractor of Railway Track Maintenance, Maintenance Standards and Maintenance Plans	JCC2: - Manual for Track Inspection - Manual for Management of Maintenance History and Materials JCC3: - Regulations on management and maintenance of urban railway lines No.1 <i>(Based on Circular 16/2018/TT-BGTVT issued by MoT)</i>	8-8-1"Regulations on supervision and acceptance criteria for infrastructure maintenance of urban railway lines No. 1" と共通
	9-13-2	83	2-7	9-13-2- Prehension of Railway Track Maintenance		Regulation on Management and Maintenance of Urban Railway Infrastructure
	9-13-3		2-7	9-13-3- Meeting with Contractor in the Case of Such as Rail Exchange Needed Large Material	JCC2: unknown JCC3: - Regulations on infrastructure maintenance implementation of urban railway lines No.1 <i>(Based on Circular 10/2016/TTLT-BGTVT-BTC and Circular 16/2018/TT-BGTVT issued by MoT)</i>	Common to 8-8-3" Regulations on infrastructure maintenance implementation of urban railway lines No.1"
	9-13-4		2-7	9-13-4- Adjustment with Related Section for Maintenance Work	JCC2: - Manual for Track Inspection - Manual for Driving Assitant of Maintenance Vehicle JCC3: - Regulations on infrastructure maintenance implementation of urban railway lines No.1 <i>(Based on Circular 10/2016/TTLT-BGTVT-BTC and Circular 16/2018/TT-BGTVT issued by MoT)</i>	Manual for driving assistant of maintenance vehicle⇒common to 9-11 Regulations on infrastructure maintenance implementation of urban railway lines No.1⇒common to 9-13-3, 8-8-3 Manual for Track Inspection⇒No deliverable
	9-13-5		2-7	9-13-5- Checking System for Hand-over of the Related Facilities and Take-over Documents after Completion of Construction	JCC2: unknown JCC3: - Plan for taking over the project of urban railways lines No.1 <i>(Based on Decree 46/2018/ND-CP issued by Prime Minister)</i>	8-8-4,9-13-5,11-15 and 14-5 submit one common deliverable

10.Maintenance (Machinery)			2-7	Work Manual and Flow of Machinery at the Head Office	Rules on maintenance of equipment station equipment	included in 9-11
			2-7	Reporting to Regulatory Authorities Notifying the Related Matters		included in 9-11
	10-10-1	84	2-7	Concept regarding Contract with Contractor of Machinery Maintenance, Maintenance Standards and Maintenance Plans		Relationships with manufacturers and contractors
	10-10-2	85	2-7	Prehension of Machinery Maintenance		Maintenance of AFC
	10-10-3	86	2-7	Meeting with Contractor in the Case of Such as Large Machinery Exchange Needed		Meeting with Contractor in the case of such as rail exchange needed large material
	10-10-4	87	2-7	Checking System for Hand-over of the Related Facilities and Take-over Documents after Completion of Construction		Completion Inspection of Signaling and Communication Facilities and AFC Facilities
	10-10	88-1~88-4	2-7	Work Manual and Flow of AFC System at the Head Office	Continuing draft Regulations on maintenace inspestion for AFC system	1) Maintenance manuals for Ticket Vending Machine 2) Operation manual for ticket operation center
			2-7	Reporting to Regulatory Authorities Notifying the Related Matters	RD ナンバーなし	
			2-7	Concept regarding Contract with Contractor of AFC System Maintenance, Maintenance Standards and Maintenance Plans		
			2-7	Prehension of AFC System Maintenance		
			2-7	Meeting with Contractor in the Case of Such as Large Material Needed		
			2-7	Checking System for Hand-over of the Related Facilities and Take-over Documents after Completion of Construction		
11.Maintenance (Electricity)	11-11	89-1~89-10	2-7	Work Manual and Flow of Electricity Facilities at the Head Office	Rules for entering and exiting substations	1) Rule on maintenance of power supply equipment_station equipment 2) Rule on Management of O&M of unmanned 6.6kV, 22kV, 110kV substation 3) Rule on Power dispatching procedure
	11-12	90	2-7	Reporting to Regulatory Authorities Notifying the Related Matters	Regulations on operation of electrical system	Regulations on troubleshooting any failures in HURC1's power network
	11-13-1	91-1~91-3	2-7	Concept regarding Contract with Contractor of Electricity Facilities Maintenance, Maintenance Standards and Maintenance Plans	Regulations on management, operation and maintenance of substations	Concept regarding contract with contractor
	11-13-2	92-1,92-2	2-7	Prehension of Electrical Facilities Maintenance	Regulations on troubleshooting electrical systems	Procedure for power network maintenance and repair
	11-13-3		2-7	Meeting with Contractor in the Case of Such as Overhead Contact Wire Exchange Needed Large Material	Regulations on dispatching of electrical system	No deliverable
	11-13-4	93	2-7	Adjustment with Related Section for Maintenance Work	Regulations on management of economical and efficient use of energy	Rule on safety in O&M of electrical system
	11-14	94-1~94-3	2-7	Power Consumption Management		Rule on management of energy usage
	11-15		2-7	Checking System for Hand-over of the Related Facilities and Take-over Documents after Completion of Construction		8-8-4,9-13-5,11-15 and 14-5 submit one common deliverable

12.Maintenance (Signaling & Telecommunication)	12-10	95-1~95-5	2-7	Work Manual and Flow of Signaling & Telecommunication Facilities at the Head Office	Chapter2: WORKING OF SIGNALS AND TELECOM UNIT AT HEAD OFFICE	1) INTERNAL REGULATIONS IN THE MAINTENANCE OF SIGNALS AND TELECOMMUNICATIONS 2) SCADA FACTORY DISPATCHING PROCESS
	12-11		2-7	Reporting to regulatory authorities and notifying the related matters	Chapter4: NOTICE AND REPORT TO MANAGEMENT AGENCIES	
	12-12-1		2-7	Concept regarding contract with contractor of Signalling & Telecommunication facilities maintenance, maintenance standards and maintenance plans	Chapter3: MAINTENANCE OF SIGNALS AND TELECOM SYSTEM	
	12-12-2		2-7	Prehension of Signalling & Telecommunication facilities maintenance		
	12-12-3		2-7	Adjustment with related section for maintenance work		
	12-13		2-7	Basic Materials on CBTC	Chapter6: BASIC MATERIALS ON CBTC	
	12-14		2-7	Application duties for Wireless licences		
	12-15		2-7	Contact Way with Outside Related Organization of Mobile Radio in the Case of Emergency	Chapter7: CONTACT ORGANIZING EXTERNAL BY RADIO SYSTEMS IN EMERGENCY	
	12-16		2-7	Checking system for hand-over of the related facilities and take-over documents after completion of construction	-	
	-		2-7	-	APPENDIX 1 : REGULATIONS MANAGEMENT, OPERATION AND MAINTENANCE OF SUPERVISION CAMERA SYSTEM	
	-		2-7	-	APPENDIX 2 : REGULATIONS MANAGEMENT OF RADIO FREQUENCY AND TELECOMMUNICATION EQUIPMENT, RADIO STATION	
	-		2-7	-	APPENDIX 3: REGULATIONS MANAGEMENT OF RADIO BROADCASTING ACTIVITIES	
13.IT	13-3	96		Work Manual and Flow of IT System at the Head Office	IT system security regulation	IT System Security Regulation
	13-4	97		Requests and Adjustments to Contractor from the User Side Regarding ""IT System Function"	Requirement list for the CP4 system design	Requirement list for the CP4 system design
	13-5	98		Checking System for Hand-over of the Related Facilities and Take-over Documents after Completion of Construction	Requests & comments for the hand-over list of CP4 system	Checklist for the hand-over of CP4 system
	-	99-1,99-2		-	-	B.7-1.2 CP4 Vendor Design Document Review Check Sheet (Act.5-1)
	-	100		-	-	B.7-2.1 Workflows for out of the CP4 scope (Act.5-2)

14.Material	14-1	101	2-5	Work Manual and Flow of materials management at the Head Office		Work Manual and Flow for Inventory Management
	14-2	102	2-5	Regulation of Material Procurement	Material procurement regulations Project Management rule	Material Procurment Regulations
	14-3	103	2-5	Handling Rule on IT System of Material Management	<i>Regulations on consulting management on software MMS</i>	Work Manual and Flow for Inventory Management
	14-4	104-1,104-2	2-5	Handing way in the cause of exchanging such as track rail, overhead contact wire and large machinery in the maintenance work, for which is needed large material.		Handling way in the case of exchanging such as track rail, overhead contact wire and large machinery in the maintenance work
	14-5		2-5	Checking System for Hand-over of the Related Facilities and Take-over Documents after Completion of Construction		8-8-4,9-13-5,11-15 and 14-5 submit one common deliverable
15.Text	15-1	105-1~105-3	2-2	Technical Standards	- Prototype of Railway Law and Standard	1) Appendix 5:Prototype of educational materials 2) Appendix 5-1_Prototype of educational materials for training train driver of HCMC urban railway@EN 3) Appendix 5-2_0_Prototype of deliverable (Submitted in July 2020)
	15-2		2-2	Train Operation Rules	- Prototype of Railway Law and Standard	
	15-3		2-2	Safety Work	- Prototype of Safety Basics and Safety Work	
	15-4		2-2	Operation Theory	- Prototype of Electric / Operation Theory	
	15-5		2-2	Rolling Stock	- Prototype of Rolling Stock - Prototype of Inspection and Maitenance	
	15-6		2-2	Signal, Power Supply	- Prototype of Electric / Operation Theory - Prototype of Signal / Track	
	15-7		2-2	Track	- Prototype of Signal / Track	

B.2.1 Activity 4-2; Mobility Management

No	Document	
0	Mobility Management Action Plan	Introduction
		MM Target Selection
		Tools for MM Activities
1	Material 1	List of MM Target
2	Material 2	MM Educational Program
3	Material 3	MM Commuting Program
4	Material 4	Questionnaire Form
5	Material 5	Station Map
6	Material 6	Travel Assistance Information
7	Material 7	Format of Personal Travel Plan
8	Material 8	Traffic Board Game
9	Material 9	HCMC Board Map
10	Material 10	MM Flyer Idea

B.2.2 Aitivity 4-3; AFC

No	Category	Title
1	AFC Seminar 1	Invitation Letter
2		Outlines of Project
3		Suica System and Interoperation
4		ABT in Suica
5	AFC Semnar 2	Invitation Letter
6		Persuasive Communication to Public Transport Usage
7		MoM_AFC Seminar 2

	Chapter		Final rule name	Staturs
1			Regulation on orgaization and operation of OSH council_final	
3	1	Safety management system	Rule on safety management in HURC1	
4			Rule on operation of OSH staff network	
5			Regulation on Authority by Jobs	
6			Rule on internal audit for ensuring urban railway traffic safety	
7	2	Safety policy	Safety policy	
8	3	Safety targets	Safety targets	
9	4	Safety plan	Safety plan for 2024	
10	5	Compliance management	Rule on registration of regulations and standards	
11			Compliance framework	
12			Regulation on Records and Archives	
13			Regulation on safety health of the laborers Work procedures for Operation and Maintenance divisions	
14	6	Change management	Change management procedure	
15			Training plan for 2024	
16	7	Risk management	Registration rule for operational hazard and risk	
17			Procedure on risk identification and control	
18			JSA procedure (Occupational Risk Assessment)	
19			Risk identification and control procedure	
20	8	Capacity management	Annual Labor plan	Under final check by HURC1
21			Safety responsibility statement	
23			Work Manual and flow of Human Resources at the Head Office	
24	9	Management and training of HR	Training Needs Analysis procedure (including Training Needs Matrix)	
25-1			Regulation on Recruitment	
25-2			Regulation on Training	
26			Rule for Safety Competency Management/Safety Education	Under final check by HURC1
28	10	Document management and exchange of safety info	Procedure on document storage and management	
29			Decision No.41 Regulation on Records and Archives	
30			List of current safety documents	Under development by HURC1
31			Safety document approval process	
32	11	Emergency management	Detailed emergency response plan and procedures for specific emergencies	
33			Operations plan – normal, degraded and emergency modes	
34			Evacuation plan for HQ - Depot & OCC Evacuation plan for station	
35			Rule for establishment of Recue body at Headquarter Rule for establishment of Recue body at the worksite	
36			Rule on notification and contact with external parties regarding operations of urban railway line 1	
37			Notification and report form	
38			Recovery plan	
39			Official Disaster Warning Response Procedure	
40	12	Accident investigation	Procedures of incident and accident investigation	
41	13	Internal audit	Procedure for internal audit	
42	14	Corrective action	Procedure for corrective and preventive action	
43			Process on continual improvements	
44	15	OSMS workshop materials	Day1	
45			Day2	
46			Day3	

Training Materials

	Title
1	1st Training in Japan
2	2nd Training in Japan
3	Online Training
4	Training in Jakarta

ANNEX : Achievement Rate of the Project

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
1	The capacity of urban railway regulatory organization is strengthened.	1. To establish the task team under MAUR and HURC1 for composing urban railway regulations. 2. To compose urban railway regulations and submit to HCMPC.	The regulation task team under MAUR and HURC1 is established.	Draft document of tariff and level of service for urban railway.	<Achieved> ✓ Fare Policy was decided and put into effect ✓ HCMC and HURC1 concluded the Operation Contract ✓ HCMC and HURC1 concluded the Master Contract for Maintenance. The Implementation Contract for Maintenance was drafted and under discussion.
2	Necessary systems, internal rules and plans for management of HURC1 are developed.	1. To formulate the manuals and educational materials on education and training for obtaining urban railway driving license based on Vietnam Railway Act and related laws and regulations. 2. To cooperate with GC in composing and submitting training system and training plan for obtaining approval from VNRA. 3. 1) To prepare Operation Safety Management System along with the organizational and regulatory development to obtain "safety certification" 2) To modify rules and regulations reviewed or drafted through Activity 2-4, 2-5, 2-7 and 3-1 in accordance with the discussion	✧ Training systems for direct operation staffs of Line 1, get official agreement of VNRA and the implementations are finalized. ✧ The HURC1 gets "safety certificate" and "operation permission" for urban railway transportation service prior to commercial transportation service. ✧ Internal rules composed in TC1 are	✧ Final training system, training activities, training results (number of trained staffs and their skills). ✧ Operation Safety Management System certified by an Independent Certification Body. ✧ System Safety Files verified by Vietnamese	<Achieved> ✓ 514 site workers were trained and obtained sufficient skills for the commencement. ✓ OSMS was approved by ISA ✓ Safety of the System was approved by the ISA ✓ VNRA issued the safety certification and approved the commencement. ✓ Necessary documents were prepared.

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
		with the Assessment Body for System Safety Assessment. 4. To review and update internal rules of HURC1 formulated in TC1 (Management, Safety, Administration, Human Resource, Finance, Procurement, Information System, Business, etc.) 5. To formulate internal rules concerning the whole organization, administration department and business department. 6. To submit relevant documents to VNRA and relevant authorities in order to obtain safety certificate and operating permission after receiving verification of Operation Safety Management by the Certification Body. 7. If necessary, to formulate any other internal rules and plans which should be prepared before commencement of the Line 1, and approve it. 8. To formulate the internal rules and plans that should be prepared after commencement of the Line 1, and approve it.	reviewed and updated, and others' supplemental internal rules (if any) will be supplemented.	Authorities. ✧ Safety certificate, operating permission and other necessary equivalent documents (if any). ✧ List of internal rules and detailed documents.	
3	Operation and maintenance ability of HURC1 staff is improved.	1. To plan and promote company-wide efforts on safety 2. To develop human resource recruitment plan. 3. To employ necessary staff based on the human resource recruitment plan, and to educate and train them (except for the actions included in the contract with GC and each contractor) 4. To formulate a plan for improving the operation after opening the Line 1.	✧ On the job training" at Japanese railway operators for the frame of headquarter (first and key staffs) is carried out. ✧ Personnel of Operation Dept. obtain skills of building and adjustment of train diagram, driver schedule.	✧ On the job training" at Japanese railway operators for the frame of headquarter (first and key staffs) ✧ Manuals of building and adjustment of train	< Achieved > ✓ 2 times of Training in Japan (16 trainees) ✓ Manual for Operation Planning was prepared. ✓ OCC manual was prepared.

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
		5. To continue and conduct the necessary staff recruitment and training after opening the Line 1.	✧ Personnel of Operation Dept. obtain skills to cooperate of other Dept. (Technical dept., station duty)	diagram, driver schedule ✧ Cooperation Manuals	
4	Necessary planning, sales, public relations activities of HURC1 are carried out.	1. To make a plan and implement non railway business. 2. To promote the usage of urban railway through Mobility Management (MM) activities. 3. To understand and promote usage of Automated Fare Collection System (AFC) and IC Card.	✧ Investment and various kinds of non-fare business are studied and proposed. ✧ Mobility Management (urban railway using encouragement) Activity is implemented.	✧ Annual plan of each department. ✧ Proposals and plans of non-fare business	<Achieved> ✓ Proposal on non-rail business was submitted to HCMPC ✓ MM Activities were conducted.
5	Necessary software for business management not included in CP4 of HURC1 is established.	1. To give advice in design office IT system based on the view point of end user. 2. To formulate the work manual and flow of IT system at the head office not included in the specification of CP4. 3. To support for requests and adjustment to CP4 from the HURC1 regarding "IT system" function. 4. To check system for hand-over of the related facilities and take-over documents after completion of construction not included in the specification of CP4. 5. To make plan and budget measures related to system development related to the above-mentioned work.	✧ Accounting system, asset management system, etc. are set up, tested and ready for using. ✧ Work flow/manuals of clarifying the annual operating procedures for the workers (based on the internal regulations) are developed. ✧ Annual plan of each department of HURC1 is made after established each department.	✧ Accounting system, asset management system, etc. ✧ Work flow/manuals of clarifying the actual operating procedures for the workers. ✧ Annual plan of each department.	<Achieved (Alternative Mean) > ✓ Since the procurement of CP4 did not start during the assistance period (2017-2022), JET reviewed available documents on CP4 system's requirements. ✓ Work flow on system development was prepared. ✓ Since each system had not been necessary yet during the assistance period, the procurement plans for non-CP4 systems were prepared.
6	Necessary	1. To check as the position of end user (HURC1) and take over the	✧ Information sharing and	✧ AFC system, train driving	<Achieved (Alternative Mean) >

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
	infrastructure for business management of HURC1 will be developed.	railway tracks and civil works from contractors and GC (except for the actions included in the contract with GC and each contractor) 2. To check as the position of end user (HURC1) and take over the facilities from contractors and GC (except for the actions included in the contract with GC and each contractor) 3. To check as the position of end user (HURC1) and take over the E&M from contractors and GC (except for the actions included in the contract with GC and each contractor) 4. To check as the position of end user (HURC1) and take over the signals and tele-communication system from contractors and GC (except for the actions included in the contract with GC and each contractor) 5. To check as the position of end user (HURC1) and take over the rolling stock from contractors and GC (except for the actions included in the contract with GC and each contractor) 6. To check as the position of end user (HURC1) and take over the station and depot facilities from contractors and GC (except for the actions included in the contract with GC and each contractor) 7. To check as the position of end user (HURC1) and take over the headquarter office IT system from contractors and GC (except for the actions included in the contract with GC and each contractor)	consultation with Line 1 Construction Project ✧ Cooperation as the position of end user with GC and CP4 contractor in building office IT system; (except for the actions included in the contract with GC and CP4 contractor). ✧ Checking as the position of end user and taking over the civil infrastructure included in the contract with GC and each contractor).	simulator, OCC equipment, contents of operation rules, layout planning of facilities in stations and so on. ✧ Office IT system ✧ The civil infrastructure and E&M upper structure	✓ Information exchange with GC and the contractors ✓ IT system hand over was considered in the activity 5. ✓ The assistance period (2017-2-022) had finished before the commencement, JET provided some Japanese examples in railway system handover.
7	Cooperation with urban	1. To cooperate with PMU of other urban railway lines in HCMC. 2. To cooperate with relevant organizations of Hanoi urban railway.	✧ Cooperation with PMU2 and PMU5 (under MAUR) in order to update	✧ Updated project progress of line 2, line 5 and	<Achieved>

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
	railway management is established with other lines in Ho Chi Minh, Vietnam domestic and neighboring countries.	3. To cooperate with relevant organizations on Vietnamese urban railway. 4. To cooperate with urban railway management companies in neighboring countries including Japan.	project progress and participate in studies of operation and maintenance for these lines (on the view point of HURC1 for whole lines invested by state budget); etc. ✧ To exchange experience with Hanoi Metro Company.	participation in studies of operation and maintenance for these lines. ✧ Updated information of Hanoi Metro Company.	✓ HURC1 as the future operator of those lines, gives advice to PMUs for Line 2 and Line 5. ✓ HURC1 and JET observed the trial run of Hanoi Line 3. ✓ Hanoi Metro provided information about the Safety Assessment. ✓ HURC1 cooperated with railway related agencies of the national government to resolve issues such as company operating budget, Safety Assessment. ✓ Training in Jakarta (MRT Jakarta) ✓ MOU with Tokyo Metro

In the table above, JET evaluated the achievements of the project in accordance with the verifiable indicators stipulated in the PDM. Essentially, such verifiable indicators shall be suitable for the assessment of the achievements of the project activities, there are some indicators shown below,

- ✓ Activities and the indicators are not related or insufficiently related.
- ✓ The indicators do not cover the entire activities.

In addition, some outputs or activities are considered to be improper. The table below shows such issues.

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
1	The capacity of urban railway regulatory organization is strengthened.	1. To establish the task team under MAUR and HURC1 for composing urban railway regulations. 2. To compose urban railway regulations and submit to HCMPC.	The regulation task team under MAUR and HURC1 is established.	Draft document of tariff and level of service for urban railway.	✓ Activity 1-1 doesn't require "Deliverables" but a procedure. Therefore, what is important in Activity 1 is whether Activity 1-2 is completed. For instance, the verifiable indicator should refer to the results of Activity 1-2. Such as "Fare policy and necessary system for O&M are proposed" ✓ As mentioned above, Activity 1-1 is one of the procedures for the deliverables, however, such procedures should be left to JET. Therefore, activity 1-1 should refer to deliverables such as "To define necessary regulations" etc. ✓ Since the means of verification are quite specific, it implies that the deliverables were supposed to be "Fare Policy" and "Service Level", however, those are stated as examples in the activity. In addition, since the decision making is out of authority of C/P agencies, C/P can make only

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
					“Proposals”.
2	Necessary systems, internal rules and plans for management of HURC1 are developed.	1. To formulate the manuals and educational materials on education and training for obtaining urban railway driving license based on Vietnam Railway Act and related laws and regulations. 2. To cooperate with GC in composing and submitting training system and training plan for obtaining approval from VNRA. 3. 1) To prepare Operation Safety Management System along with the organizational and regulatory development to obtain "safety certification" 2) To modify rules and regulations reviewed or drafted through Activity 2-4, 2-5, 2-7 and 3-1 in accordance with the discussion with the Assessment Body for System Safety Assessment. 4. To review and update internal rules of HURC1 formulated in TC1 (Management, Safety, Administration, Human Resource, Finance, Procurement, Information System, Business, etc.) 5. To formulate internal rules concerning the whole organization, administration department and business department. 6. To submit relevant documents to VNRA and relevant authorities in order to obtain safety certificate and operating permission after receiving verification of Operation Safety Management by the Certification Body. 7. If necessary, to formulate any other internal rules and plans which should be prepared before commencement of the Line 1, and	✧ Training systems for direct operation staffs of Line 1, get official agreement of VNRA and the implementations are finalized. ✧ The HURC1 gets "safety certificate" and "operation permission" for urban railway transportation service prior to commercial transportation service. ✧ Internal rules composed in TC1 are reviewed and updated, and others' supplemental internal rules (if any) will be supplemented.	✧ Final training system, training activities, training results (number of trained staffs and their skills). ✧ Operation Safety Management System certified by an Independent Certification Body. ✧ System Safety Files verified by Vietnamese Authorities. ✧ Safety certificate, operating permission and other necessary equivalent documents (if any). ✧ List of internal rules and detailed documents.	✓ Activity 2-1 is one of the scopes of GC. It was not practical for JET, who were not supposed to be involved in trainings for site personnel, to formulate those documents. Therefore, JET only developed outlines of those documents and handed them over to GC (Including Activity 2-2). As such, the verifiable indicator “Training systems for direct operation staffs of Line 1, get official agreement of VNRA and the implementations are finalized.” is beyond TC2’s efforts. Hence, the indicator should be deleted. In addition, Activity 2-1 is not suitable as TC2’s activities. ✓ The mean of verification “number of trained staffs and their skills” is one of the scopes of GC. ✓ The mean of verification “System Safety Files verified by Vietnamese Authorities.” is one of the scopes of GC and the contractors, ✓ TC2 is only responsible for OSMS which is just one of the requirements of Safety Certificate, and Operation Permission is out of scope of TC2.

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
		approve it. 8. To formulate the internal rules and plans that should be prepared after commencement of the Line 1, and approve it.			
3	Operation and maintenance ability of HURC1 staff is improved.	- To plan and promote company-wide efforts on safety - To develop human resource recruitment plan. - To employ necessary staff based on the human resource recruitment plan, and to educate and train them (except for the actions included in the contract with GC and each contractor) - To formulate a plan for improving the operation after opening the Line 1. - To continue and conduct the necessary staff recruitment and training after opening the Line 1.	✧ On the job training" at Japanese railway operators for the frame of headquarter (first and key staffs) is carried out. ✧ Personnel of Operation Dept. obtain skills of building and adjustment of train diagram, driver schedule. ✧ Personnel of Operation Dept. obtain skills to cooperate of other Dept. (Technical dept., station duty)	✧ On the job training" at Japanese railway operators for the frame of headquarter (first and key staffs) ✧ Manuals of building and adjustment of train diagram, driver schedule ✧ Cooperation Manuals	✓ The targets of this activity are staff of HURC1 headquarters, however, the verifiable indicators only mention about “personnel of Operation Dept” ✓ Cooperation with other departments are important, however, but what is important here is not skills but a system. In addition, there’s no activity about cooperation. ✓ The verifiable indicators should be able to verify the results of this activity consisting of 1) safety matters, 2) Human resources, 3) Improvement after the commencement.
4	Necessary planning, sales, public relations activities of HURC1 are carried out.	- To make a plan and implement non railway business. - To promote the usage of urban railway through Mobility Management (MM) activities. - To understand and promote usage of Automated Fare Collection System (AFC) and IC Card.	✧ Investment and various kinds of non-fare business are studied and proposed. ✧ Mobility Management (urban railway using encouragement) Activity is implemented.	✧ Annual plan of each department. ✧ Proposals and plans of non-fare business	✓ “Investment” is one of the important factors in business, however, it is not suitable for the project of Strengthening the capacity of O&M company. ✓ “Each Department” should be clearer. “Department responsible for non-rail business” and “Department responsible for MM”

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
					✓ It is better to verify results than plans to evaluate the result as this activity's output expects actual results.
5	Necessary software for business management not included in CP4 of HURC1 is established.	1. To give advice in design office IT system based on the view point of end user. 2. To formulate the work manual and flow of IT system at the head office not included in the specification of CP4. 3. To support for requests and adjustment to CP4 from the HURC1 regarding "IT system" function. 4. To check system for hand-over of the related facilities and take-over documents after completion of construction not included in the specification of CP4. 5. To make plan and budget measures related to system development related to the above-mentioned work.	✧ Accounting system, asset management system, etc. are set up, tested and ready for using. ✧ Work flow/manuals of clarifying the annual operating procedures for the workers (based on the internal regulations) are developed. ✧ Annual plan of each department of HURC1 is made after established each department.	✧ Accounting system, asset management system, etc. ✧ Work flow/manuals of clarifying the actual operating procedures for the workers. ✧ Annual plan of each department.	✓ Although output of this activity shows that the target is non-CP4 systems, this activity contains CP4 system(Activity 5-1, 5-3). ✓ Activities for CP4 and Activities for non-CP4 are mixed. ✓ It can be interpreted that Activity 5-1 targets CP3 system but not clear. It is not easy to identify CP4 system and “Accounting system, asset management system”, in the verifiable indicator and the mean of verification are the same. ✓ There are various ways to call CP4 system. In Activity 5-3, CP4 System is called “IT system”. ✓ Regarding the verifiable indicator “Work flow/manuals of clarifying the annual operating procedures for the workers (based on the internal regulations) are developed., “annual operating procedures” does not mean “System planning, development, operation, maintenance”, which is

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
					essentially necessary. ✓ Regarding the mean of verification, “Annual plan of each department” means each department was supposed to set up its own system, however, that had not been decided. More importantly through this activity, HURC1 should specify systems to develop and make plans to install those systems.
6	Necessary infrastructure for business management of HURC1 will be developed.	1. To check as the position of end user (HURC1) and take over the railway tracks and civil works from contractors and GC (except for the actions included in the contract with GC and each contractor) 2. To check as the position of end user (HURC1) and take over the facilities from contractors and GC (except for the actions included in the contract with GC and each contractor) 3. To check as the position of end user (HURC1) and take over the E&M from contractors and GC (except for the actions included in the contract with GC and each contractor) 4. To check as the position of end user (HURC1) and take over the signals and tele-communication system from contractors and GC (except for the actions included in the contract with GC and each contractor) 5. To check as the position of end user (HURC1) and take over the	✧ Information sharing and consultation with Line 1 Construction Project ✧ Cooperation as the position of end user with GC and CP4 contractor in building office IT system; (except for the actions included in the contract with GC and CP4 contractor). ✧ Checking as the position of end user and taking over the civil infrastructure included in the contract with GC and each contractor).	✧ AFC system, train driving simulator, OCC equipment, contents of operation rules, layout planning of facilities in stations and so on. ✧ Office IT system ✧ The civil infrastructure and E&M upper structure	✓ The verifiable indicator “Cooperation as the position of end user with GC and CP4 contractor in building office IT system; (except for the actions included in the contract with GC and CP4 contractor).” is for Activity 5. ✓ The verifiable indicator “Checking as the position of end user and taking over the civil infrastructure included in the contract with GC and each contractor).” does not cover other subsystems. ✓ The mean of verification does not cover all the railway system and Operation rules are not to be handed over.

Output		Activity	Objectively Verifiable Indicators	Means of Verification	Evaluation
		rolling stock from contractors and GC (except for the actions included in the contract with GC and each contractor) 6. To check as the position of end user (HURC1) and take over the station and depot facilities from contractors and GC (except for the actions included in the contract with GC and each contractor) 7. To check as the position of end user (HURC1) and take over the headquarter office IT system from contractors and GC (except for the actions included in the contract with GC and each contractor)			
7	Cooperation with urban railway management is established with other lines in Ho Chi Minh, Vietnam domestic and neighboring countries.	1. To cooperate with PMU of other urban railway lines in HCMC. 2. To cooperate with relevant organizations of Hanoi urban railway. 3. To cooperate with relevant organizations on Vietnamese urban railway. 4. To cooperate with urban railway management companies in neighboring countries including Japan.	✧ Cooperation with PMU2 and PMU5 (under MAUR) in order to update project progress and participate in studies of operation and maintenance for these lines (on the view point of HURC1 for whole lines invested by state budget); etc. ✧ To exchange experience with Hanoi Metro Company.	✧ Updated project progress of line 2, line 5 and participation in studies of operation and maintenance for these lines. ✧ Updated information of Hanoi Metro Company.	✓ The verifiable indicators and the means of verification cover only PMUs and Hanoi Metro Company. Activity 7-3and 7-4 are not covered.

Based on the opinions on the table above, JET would like to propose ideal verifiable indicators, means of verification and try to evaluate the results of the project.

Output		Activity	Objectively Verifiable Indicator	Means of Verification	Evaluation
1	The capacity of urban railway regulatory organization is strengthened.	1. To establish the task team under MAUR and HURC1 for composing urban railway regulations. To define necessary regulations for urban railways such as "Fare Policy, Service Level etc." 2. To compose urban railway regulations and submit to HCMPC.	The regulation task team under MAUR and HURC1 is established. Necessary regulations for urban railways are proposed to HCMPC.	Draft document of tariff and level of service for urban railway. Proposals on necessary regulations for urban railways such as Fare Polic, Service Level.	< Achieved > ✓ It is confirmed that regulations on fare policy and service level are necessary. ✓ The proposals on the regulations above was prepared.
2	Necessary systems, internal rules and plans for management of HURC1 are developed.	1. To formulate the manuals and educational materials on education and training for obtaining urban railway driving license based on Vietnam Railway Act and related laws and regulations. 2. To cooperate with GC in composing and submitting training system and training plan for obtaining approval from VNRA. 3. 1) To prepare Operation Safety Management System along with the organizational and regulatory development to obtain "safety certification" 2) To modify rules and regulations reviewed or drafted through Activity 2-4, 2-5, 2-7 and 3-1 in accordance with the discussion with the Assessment Body for System Safety Assessment. 4. To review and update internal rules of HURC1 formulated in TC1 (Management, Safety, Administration, Human Resource,	✧ Training systems for direct operation staffs of Line 1, get official agreement of VNRA and the implementations are finalized. ✧ The HURC1 gets "safety certificate" and "operation permission" for urban railway transportation service prior to commercial transportation service. ✧ OSMS is approved prior to the commencement. ✧ Internal rules composed in TC1 are reviewed and updated, and others'	✧ Final training system, training activities, training results (number of trained staffs and their skills). ✧ Operation Safety Management System certified by an Independent Certification Body. ✧ VNRA's letter on Safety Certification including OSMS. ✧ System Safety Files verified by Vietnamese	< Achieved > ✓ OSMS was approved as part of Safety Certification by VNRA. ✓ Internal rules stipulated in R/D and other necessary documents such as OSMS documents were prepared.

Output		Activity	Objectively Verifiable Indicator	Means of Verification	Evaluation
		Finance, Procurement, Information System, Business, etc.) 5. To formulate internal rules concerning the whole organization, administration department and business department. 6. To submit relevant documents to VNRA and relevant authorities in order to obtain safety certificate and operating permission after receiving verification of Operation Safety Management by the Certification Body. 7. If necessary, to formulate any other internal rules and plans which should be prepared before commencement of the Line 1, and approve it. 8. To formulate the internal rules and plans that should be prepared after commencement of the Line 1, and approve it.	supplemental internal rules (if any) will be supplemented.	Authorities. ◇ Safety ——— certificate, operating permission and other necessary equivalent documents (if any). ◇ List of internal rules and detailed documents	
3	Operation and maintenance ability of HURC1 staff is improved.	1. To plan and promote company-wide efforts on safety 2. To develop human resource recruitment plan. 3. To employ necessary staff based on the human resource recruitment plan, and to educate and train them (except for the actions included in the contract with GC and each contractor) 4. To formulate a plan for improving the operation after opening the Line 1. 5. To continue and conduct the necessary staff recruitment and training after opening the Line 1.	◇ Company-wide activity for Safety is conducted. ◇ HURC1's Recruitment Plan is made and recruitment activity is conducted. ◇ On the job training" at Japanese railway operators for the frame of headquarter (first and key staffs) is carried out. ◇ Personnel of Operation Dept. obtain	◇ Results of company-wide activity for safety ◇ Recruitment Results for the commencement ◇ On the job training" at Japanese railway operators for the frame of headquarter (first and key staffs) ◇ Results of improvement	<Mostly Achieved> ✓ Safety Management Regulation was prepared. In addition, JET held an OSMS workshop to disseminate OSMS and importance of Safety. ✓ HURC1's recruitment plan was made. ✓ HURC1 hired sufficient personnel for the commencement (514 site workers) ✓ 16 MAUR/HURC1 staff in total attended the OJT training in Japan (1 st training 6, 2 nd training 10).

Output		Activity	Objectively Verifiable Indicator	Means of Verification	Evaluation
			skills of building and adjustment of train diagram, driver schedule. Personnel of Operation Dept. obtain skills to cooperate of other Dept. (Technical dept., station duty)	activity Recruitment and training after the commencement. Manuals of building and adjustment of train diagram, driver schedule Cooperation Manuals	In addition, 14 HURC1 staff joined the online training. Furthermore, 14 HURC1 staff participated in the training in Jakarta majorly by MRT Jakarta. ✓ After the commencement, JET proposed the response to the comments on the OSMS by VNRA, and other matters related to corporate management or O&M. It depends on HURC1 whether they are applied in its practices.
4	Necessary planning, sales, public relations activities of HURC1 are carried out.	1. To make a plan and implement non railway business. 2. To promote the usage of urban railway through Mobility Management (MM) activities. 3. To understand and promote usage of Automated Fare Collection System (AFC) and IC Card.	Investment and various kinds of non-fare business are studied and proposed. Mobility Management (urban railway using encouragement) Activity is implemented.	Annual plan of each department Proposals and plans of non-fare business Results of MM	< Achieved > ✓ The plan on developing commercial facilities in station and under viaducts (Stores, parking lots, advertising) was developed. ✓ Mobility Management activities (PR activities to the citizens, proposal to organize bus network etc.) were conducted.
5	Necessary software for business management not included	1. To give advice in design of office IT system procured through CP4 based on the view point of end user. 2. To support for requests and adjustment to CP4 from the HURC1 regarding "IT system" function. 3. To formulate the work manual and flow of IT system at the head	The IT system procured through CP4 Accounting system, asset management system, etc. are is set up, tested and ready for using. Workflow/manuals of system	Office IT system procured through CP4 Workflow Development Plans for each system	< Mostly Achieved > ✓ Since CP4 system did not start its procurement procedures during the original assistance period (Dec 2017 to Dec 2022), JET reviewed the system requirements by the available documents

Output		Activity	Objectively Verifiable Indicator	Means of Verification	Evaluation
	in CP4 of HURC1 is established	office not included in the specification of CP4. 4. To check system for hand-over of the related facilities and take-over documents after completion of construction not included in the specification of CP4. 5. To make plan and budget measures related to system development related to the above-mentioned work (Activity 5-3, 5-4).	planning, development, operation and maintenance—clarifying the annual operating procedures for the workers (based on the internal regulations)—are developed. ✧The IT systems not procured through CP4 are defined. The development Plan is made, and the System is implemented. ✧Annual plan of each department of HURC1 is made after established each department.	✧ Office IT system procured through CP4 Accounting system, asset management system, etc. ✧ Workflow/manuals of system planning, development, operation, maintenance. clarifying the actual—operating procedures for the workers. ✧ Implementation Plan for each system	✓ HURC1 and JET created the workflow related to system development. ✓ Since HURC1 did not enter the phase where it needs each system during the assistance period (Dec2017 to Dec 2022), procurement and development plans for each system were developed.
6	Necessary infrastructure for business management and O&M of HURC1 will be developed.	1. To check as the position of end user (HURC1) and take over the railway tracks and civil works from contractors and GC (except for the actions included in the contract with GC and each contractor) 2. To check as the position of end user (HURC1) and take over the facilities from contractors and GC (except for the actions included in the contract with GC and each contractor) 3. To check as the position of end user (HURC1) and take over the E&M from contractors and GC (except for the actions included in the contract with GC and each contractor)	✧Information sharing and consultation with Line 1 Construction Project ✧Cooperation as the position of end user with GC and CP4 contractor in building office IT system; (except for the actions included in the contract with GC and CP4 contractor).	✧AFC system, train driving simulator, OCC equipment, contents of operation rules, layout planning of facilities in stations and so on. ✧Office IT system ✧ Information from GC and Contractors about the	<Mostly Achieved> ✓ HURC1 and JET exchanged information with GC and the contractors and checked the specifications of the facilities. ✓ Since the handover did not happened during the assistance period (Dec 2017 to Dec 2022), JET introduced Japanese cases on handover,

Output		Activity	Objectively Verifiable Indicator	Means of Verification	Evaluation
		4. To check as the position of end user (HURC1) and take over the signals and tele-communication system from contractors and GC (except for the actions included in the contract with GC and each contractor) 5. To check as the position of end user (HURC1) and take over the rolling stock from contractors and GC (except for the actions included in the contract with GC and each contractor) 6. To check as the position of end user (HURC1) and take over the station and depot facilities from contractors and GC (except for the actions included in the contract with GC and each contractor) 7. To check as the position of end user (HURC1) and take over the headquarter office IT system from contractors and GC (except for the actions included in the contract with GC and each contractor)	✧ Checking as the position of end user and taking over the system. civil infrastructure included in the contract with GC and each contractor)	specification of the system ✧ The entire system procured through CP1-4.	
7	Cooperation with urban railway management is established with other lines in Ho Chi Minh, Vietnam domestic and	1. To cooperate with PMU of other urban railway lines in HCMC. 2. To cooperate with relevant organizations of Hanoi urban railway. 3. To cooperate with relevant organizations on Vietnamese urban railway. 4. To cooperate with urban railway management companies in neighboring countries including Japan.	✧ Cooperation with PMU2 and PMU5 (under MAUR) in order to update project progress and participate in studies of operation and maintenance for these lines (on the view point of HURC1 for whole lines invested by state budget); etc. ✧ To exchange experience with Hanoi Metro Company. ✧ Information exchange with other	✧ Updated project progress of line 2, line 5 and participation in studies of operation and maintenance for these lines. ✧ Updated information of Hanoi Metro Company. ✧ Information from railway related agencies in Vietnam	< Achieved > ✓ HURC1 attended internal meetings related to Metro Line 2 or 5 to input its opinions. ✓ HURC1 and JET got information about the safety assessment and the trial run. HURC1 and JET also observed the trial run of Hanoi Line 3. ✓ MAUR and HURC1 tried to resolve the issues on the company operating budget or the safety assessment in cooperation with the central governmental agencies.

Output		Activity	Objectively Verifiable Indicator	Means of Verification	Evaluation
	neighboring countries.		railway related agencies in Vietnam ✧ Cooperation with urban railway operators abroad.	✧ Results of cooperation with urban railway operators abroad.	✓ MAUR/HURC1 concluded the MOU with Tokyo Metro. ✓ HURC1 joined the training in Jakarta. ✓ Information exchange with other railway operators in Japan



TECHNICAL COOPERATION PROJECT

**Strengthening Management Ability of
Operation and Maintenance Company for the
Opening of Urban Railway Line 1 in Ho Chi
Minh City (TC2)**

→
- The way forward -

HURC1



Extracted from the
material for the official
meeting held on May
16, 2025

Ho Chi Minh City, May 16th, 2025

Orientations

1. Operational Safety Management System

1.1 Update and modify OSMS documents:

- Review documents to ensure consistency with the current organizational structure, functions, and responsibilities
- Modify documents and rules in accordance with recommendations from VNRA and other relevant agencies
- Standardize the procedures on change management and risk management to ensure responsiveness to organizational and operational changes
- Update OSMS system for regular audits (3 years after commercial operation)



Orientations

1. Operational Safety Management System

1.2 Strengthen the implementation and operation of the OSMS in a practical manner.

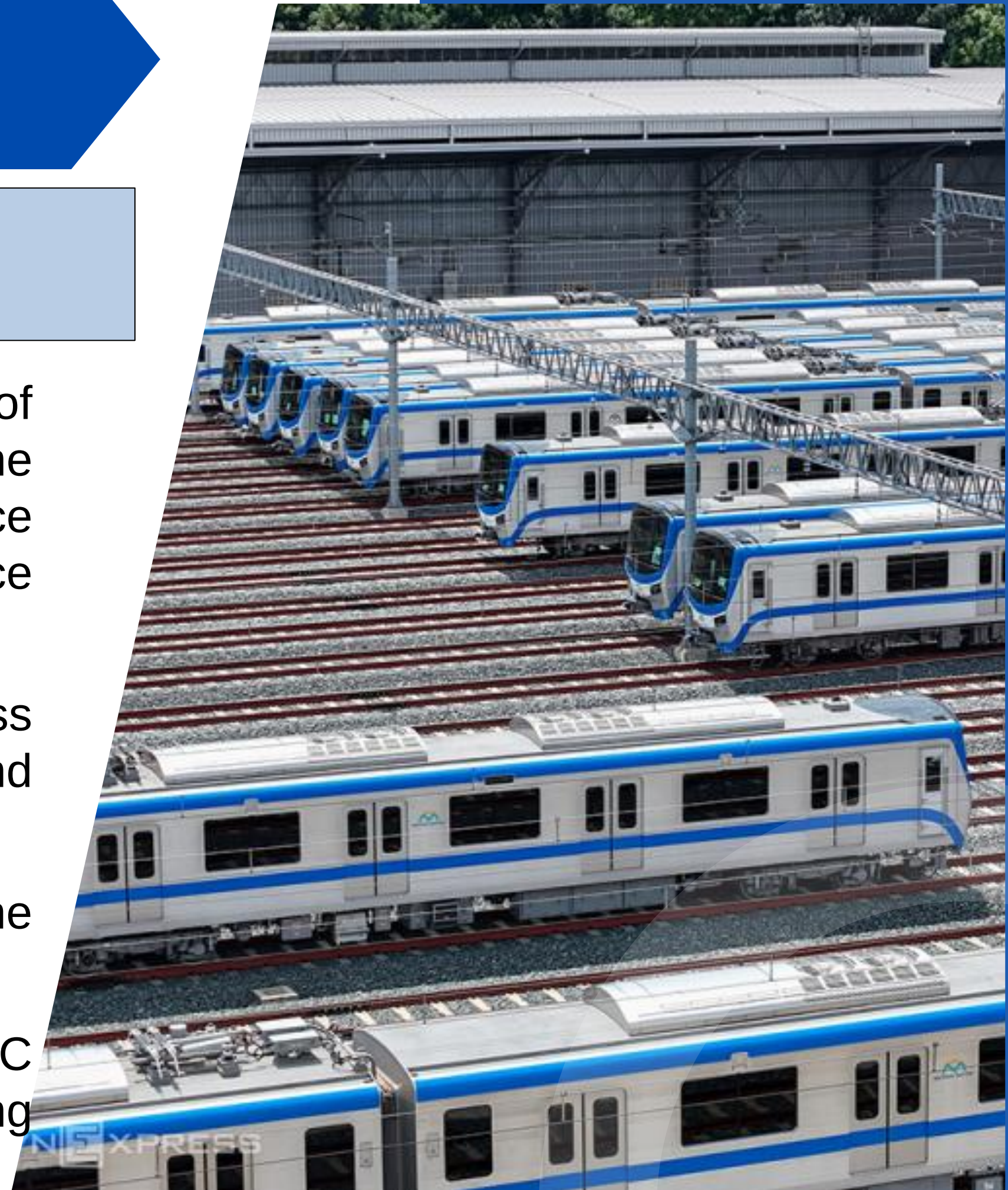
- Organize regular education and training programs on OSMS for all employees
- Carry out internal audits, to check the actual compliance across departments and divisions
- Update SOPs and incident investigation procedures based on the operational conditions
- Conduct a study on expanding OSMS system as a standardized model for future application across HCMC urban railway lines



Orientations

2. Strengthening management and operation capacity

- While waiting for the negotiation and conclusion of the Contract Amendment, a MOU on the commencement of General Consultant's Service for the Advisory Service during the Maintenance stage was signed on Feb 3, 2025
- Formulate plans on strengthening the awareness of safety in urban railway operation and maintenance for HURC1's personnel
- Formulate plans and provide support for the annual internal safety audits
- In addition, a study on establishment of HCMC urban railway operation and maintenance training center is about to be implemented by KSP



Orientations

2. Strengthening management and operation capacity

- HCMC PC has recently issued a letter to agree to HURC1 to cooperate with the Department of Home Affairs to update the Personnel Plan (Letter No.6654/VP-DA dated May 6, 2025).
- To ensure flexibility, achieve long-term investment cost savings, and take utilization of the deep expertise and professional facilities of external companies, HURC1 has decided to outsource the maintenance of systems under the contract packages. This decision was approved by MAUR, as documented in the Record of Agreement No. 3929/BBTT-BQLĐSĐT dated Dec 31, 2024. The implementation is currently being carried out by HURC1



Orientations

3. Operation and Maintenance

- Improve O&M manuals and procedures from safety perspectives.
- Update OSMS system for regular audits (3 years after commercial operation)
- Carry out risk management during operation and maintenance
- Develop the Failure Reporting and Corrective Action System (FRACAS)
- Conduct periodic assessment and feedback programs
- Update prevention and recovery measures to respond to O&M incidents
- Prepare for integrated operation of other railway lines in the future





Strengthening Management Ability of Operation and Maintenance Company for the Opening of Urban Railway Line 1 in Ho Chi Minh City (TC2) - Suggestions on the way forward -

May 16, 2025

JICA Expert Team

Extracted from the material for the official
meeting held on May 16, 2025

JET's Suggestion on the way forward (Direction)

In addition to implementing, maintaining and updating TC2 deliverables.....

JET expects and believes that HURC1 will be able to stand on its feet; being....

- ✓ Responsible
- ✓ Reliable
- ✓ Strategic

<Timeline>

Within about 3 years, by the time when the OSMS is audited for the first time after the commencement.

❑ Set a simple code of conduct to disseminate HURC1's policy

1. Ensuring safety is vital in transportation

安全の確保は、輸送の生命である

2. Adhering to rules is fundamental for safety

規程の順守は、安全の基礎である

3. Meticulous performance of duties is a key requirement for safety

執務の厳正は、安全の要件である

Ministerial Ordinance of Ministry of Transportation No.55; July 2, 1952
Re; Ensuring Safety in transportation, Article 2, Section 1

JET's suggestion on the way forward (O&M matters)

◆ Cooperation between divisions

- The operational skills and capabilities of each department are improving.
- Several problems have occurred due to a lack of coordination and information sharing between divisions.
- A system or an organization must be established to solve cross-organizational issues.

◆ Reporting and investigating/analyzing accidents and incidents

- Several operational problems occurred after the opening.
- It seems that there is not enough reporting, investigation or analysis on HURC's own, and almost everything is done by the GC and contractors.
- It is important to respond and make improvements as an organization rather than holding individuals accountable



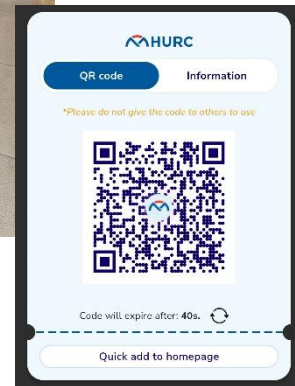
JET's suggestion on the way forward (O&M matters)

◆ CS(Customer Satisfaction)

- Implement customer satisfaction improvement measures that can reach each customer, including commuters, students, and tourists, so that they will continue to use the service for a long time. **(HURC1's CS Policy shall be established)**

◆ Fare collection

- HURC1 already has their own fare collection system (VISA, Master NAPAS, QR code payment, etc.)
- The CP3 AFC system is expected to be introduced after May 2025.
- It is necessary to **build a system that integrally manages multiple payment systems and the collection of fares**



◆ Accumulation and utilization of big data

- The person trip information accumulated in the app and AFC system is extremely useful, and can be efficiently reflected in future demand forecasts, Train timetable revision, TOD planning etc.
- To use these data appropriately in the future, it is necessary to accumulate and manage it.

JET's suggestion on the way forward (OSMS)

◆ Update of OSMS

- Response to the **VNRA letter(2903 /TB-CĐSVN)** (such as job description)
- **Modification** based on the **organization structure**
- **Scrutiny of inconsistencies** of procedures, such as investigation etc.
- Consideration of rule formulation policy based on **risk analysis**

◆ Implementation of OSMS

- **Education and Training** regarding OSMS
- Strengthening the internal audit system
- Compliance check based on **internal audits**
- Identification of inconsistencies between the current situation and procedures based on **internal audits**

◆ Standardization of OSMS (Develop OSMS 2.0)

- Study and development of standardized OSMS for future new route development

JET's suggestion on the way forward (OSMS)

■ For the future development of urban railways In light of the framework of Resolution 188 (2025/QH15), **standardized approach** is necessary.

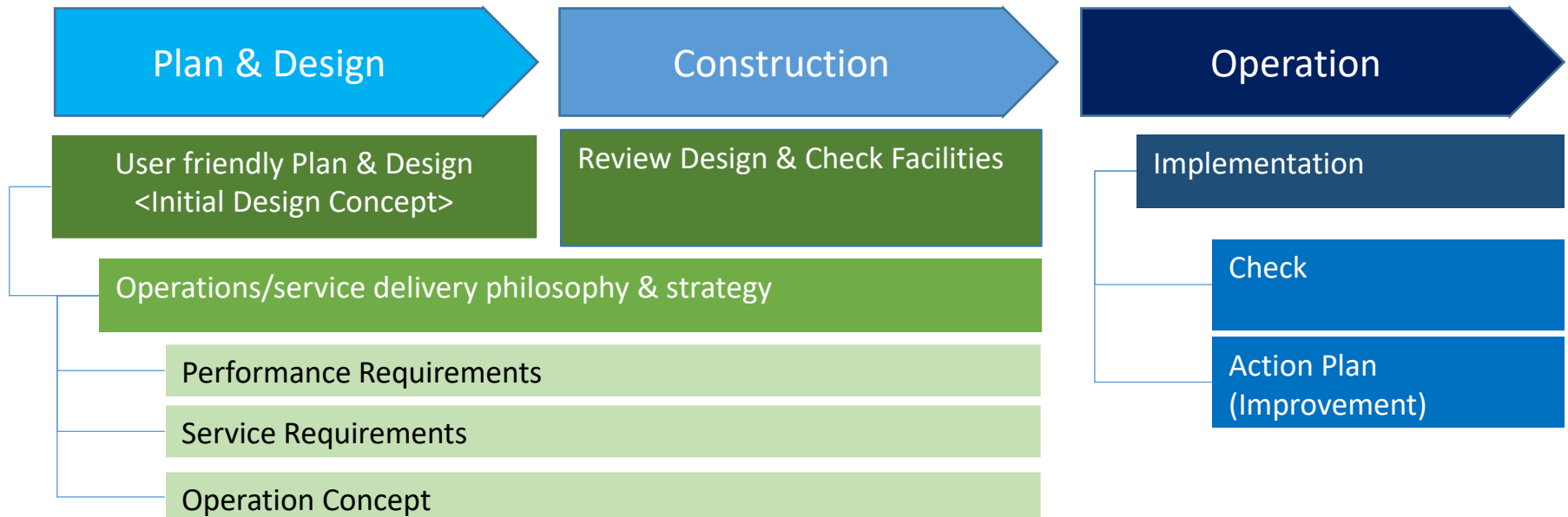
- It would be an efficient way to **unify RAMS activities for each line from the planning stage** based on the standardized OSMS.
- Such standardized OSMS model shall be applied to projects in Hanoi as well, so that all the urban railway projects all over **Vietnam can have the same basis for RAMS activities**.
 - To boost localizing necessary skills and knowledge with a standard to meet the challenging goals.
 - Especially, safety management in each stage of construction and O&M is crucial.

JET's suggestion on the way forward (New Development)

❑ For the future development of urban railways

- HURC1 should organize a special preparation unit for each line to input O&M aspects to the plan and the design.
- Take note that most of the designers are not familiar with O&M practices.
- Even if the general consultant includes a competent O&M Team, HURC1's involvement as the user is significant.

【Ideal Involvement of the O&M Body】



JET's suggestion on the way forward (New Development)

□ For the future Operation & Maintenance

- HURC1 should consider how to make advantage of BIM.
- Under Decision No. 258/QĐ-TTg (2023), Decree No.175/2024/ND-CP and Resolution No. 57/NQ-TW, the application of BIM is mandated for infrastructure projects in Vietnam. The corresponding international standard is ISO 19650.

Cooperation among operators upon New Development

❑ To share the experience and the skills with newly developed railway lines,

➤ JET recommends Vietnamese railway industries to establish a human resource exchange (Supply) system.

- This system enables a new railway line to prepare capable personnel and to transfer experience of existing railway lines. They will be core personnel.

