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Department of Housing and Urban Planning, Ministry of Public Works and Transport

Public Works and Transport Institute, Ministry of Public Works and Transport

Department of Public Works and Transport, Vientiane Capital

LAOS

**The Project for Capacity Development on
Urban Development Control and
Promotion (CDUDCP)**

Project Completion Report

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Nippon Koei Urban Space Co., Ltd.

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List of Abbreviations

ALACE	Association of Lao Architects and Civil Engineers
B/C	Building Code
BMA	Bangkok Metropolitan Administrative (Thailand)
COVID-19	Coronavirus Disease 2019
C/P	Counterpart
DFSI	Division of Fire Safety Inspection, Police Department of Firefighting and Fire Prevention, Ministry of Public Security
DHUP	Department of Housing and Urban Planning
DONRE	Department of Natural Resource and Environment
DPT	Department of Public Works and Town & Country Planning (Thailand)
DPWT	Department of Public Works and Transport
DUP	Detailed Urban Plan
DX	Digital Transformation
F/S	Feasibility Study
FSRC	Fire Safety Research Center, Chulalongkorn University (Thailand)
GIS	Geographical Information System
GIS-PF	GIS Platform
GIS-SWG	GIS Sub Working Group
GUP	General Urban Plan
IBC	International Building Code
JCC	Joint Coordination Committee
Lao PDR	People's Democratic Republic of Laos
MOF	Ministry of Finance
MONRE	Ministry of Natural Resource and Environment
M/P	Master Plan
MPI	Ministry of Planning and Investment
MPWT	Ministry of Public Works and Transport
NCSEZ	National Committee for Special and Specific Economic Zone
NUOL	National University of Laos
O&M	Operation and Management
OJT	On-the-Job-Training
OPWT	Office of Public Works and Transport
PDM	Project Design Matrix
PO	Plan of Operations
PTI	Public Works and Transport Institute
RfP	Request for Proposal
R/D	Record of Discussion
SEZ	Special Economic Zone/ Specific Economic Zone
SWG	Sub Working Group
TOR	Terms of Reference
ToT	Training of Trainers
UMP	Urban Management Platform
UP-WT	Urban Promotion Working Team
UWG	Urban Working Group
WG	Working Group
WT	Working Team

Chapter 1. Introduction

1.1 Background

Vientiane, which is the capital city of the Lao People's Democratic Republic (hereinafter referred as "Lao PDR"), has a population of approximately 989,000 out of the total population of the country of 7,443,000 (Statistics Bureau of Lao PDR, 2022). The city has a characteristic as a major window for domestic and foreign investment as well as one of the largest employment opportunities in the country. With the rapid economic growth and population increase in recent years, the urban area has been rapidly expanding from the existing urban areas to the suburban areas. However, sufficient infrastructure development is not being prepared, and the urban problems such as deterioration of living environment and loss of greenery and wetlands are emerging. In this situation, the government of Lao PDR made a priority to "formulate development plans in urban and suburban areas to clarify the environmental conservation areas and the development areas" for the achievement of the balanced and sustainable development in the 8th National Five-Year Socio-economic Development Plan (2016-2020). In addition, the 9th National Five-Year Socio-economic Development Plan (2021-2025), which is currently being formulated, identifies "the resilient infrastructure development and the utilization of the regional potential" as one of the prior policies.

In order to support such efforts by the Government of Lao PDR, JICA implemented the Project for Urban Development Master Plan Study in Vientiane Capital from 2009 to 2011. The master plan (hereinafter referred as "M/P") formulated in the project set the development vision and socio-economic framework until 2030 as the target year and proposed the "concept of multi-core urban structure" forming new urban cores such as sub-centers in suburban areas while restraining the expansion of existing urban areas. In addition, the M/P project proposed the land use plans and infrastructure development policies in line with the concept, and identified the necessary institutional improvements to realize the M/P through the discussions with relevant government agencies such as the Ministry of Public Works and Transport (MPWT), Vientiane Capital, among others.

However, the mechanism to regulate and guide the construction activities and development projects based on the proposed land use plan was not functioning sufficiently, and many issues in urban management remained. For the improvement of these issues, the Project for Urban Development Management (hereinafter referred to as the "Previous T/A Project") was implemented from 2013 to 2017 and formulated urban plans such as the detailed land use plans and the zoning regulations for inner zones and historical areas. After the completion of the Previous T/A Project, the Law on Urban Planning (2017), the Construction Management Regulations (2019), and the Technical Standards on Construction Management for Warehouses and Gas Stations (2019) were revised.

Although it is considered that development management system was improved by the Previous T/A Project, the M/P was approved by the National Assembly in 2020, and rules and regulations to implement urban management under the M/P are still in the process of formulation. For this situation, the development permit system has not been fully implemented yet. In addition, the large-scale

development in the designated special economic zone (hereinafter referred as "SEZ") and the concession by foreign investment are out of the jurisdiction of MPWT and the Department of Public Works and Transport of Vientiane Capital (DPWT) who are in charge of development permit. There are issues such as the implementation of large-scale urban development projects without conforming to M/P due to less involvement of the MPWT and DPWT. Furthermore, MPWT and DPWT do not have the measure to control private urban development projects for the appropriate urbanization and do not have enough budget to implement their own projects. Hence, realization of M/P through the accumulation of individual development permits will take a long term.

Thus, the Department of Housing and Urban Planning of MPWT (DHUP), MPWT, Public Works Transport Institute (PTI) and DPWT which are primarily responsible for urban planning and development management in Vientiane Capital still have issues of lack of capacity for urban development management. They also need to strengthen their capacity for urban development promotion not only for the management. In addition, DHUP has established the Action Plan for Improvement of Construction Permits (2019-2021) and has been improving the legal system and operational capabilities of construction permits. On the other hand, the "Building Code", which is the set of general building requirements (hereinafter referred as "draft B/C"), is in the process of being formulated, and has not yet been finalized. There is a possibility that the number of high-risk buildings will increase in the context of the growth of investment in high-rise buildings.

In response to the request from the Government of Lao PDR for continuing capacity building on urban development, JICA conducted the Preparatory Survey in January 2020 and agreed on the implementation of a technical cooperation project called "Project for Capacity Development on Urban Development Control and Promotion in Lao PDR (CDUDCP)", which aims to improve the capacity of administrative officials engaged in urban development management and promotion. In March 2020, the Record of Discussion ("R/D") was concluded between JICA and the Government of Lao PDR.

As a result of the Preparatory Survey, it was proposed to further survey to identify the actual situation and discuss the direction of capacity assessment for the relevant agencies. Therefore, further discussions and additional surveys to identify the activities in the implementation phase ("Phase 2") were conducted in the Preparation Phase of CDUDCP for the first year ("Phase 1"), and the revision of the R/D was agreed in July 2021.

1.2 Outline of the Project

The project shall be carried out as the implementation phase of the Project for Capacity Development on Urban Development Control and Promotion in Laos and aims to strengthen the counterparts (C/Ps) to control and promote urban development of Vientiane Capital. The outline of the project is shown in Table 1-1.

Table 1-1: Outline of the Project

Project Name		Project for Capacity Development on Urban Development Control and Promotion
Project Site		Vientiane Capital
Period of Project		Phase 1: July 2020 to July 2021 (1 year) Phase 2: August 2021-July 2024 (3 years)
Implementing Agency		<ul style="list-style-type: none"> · Department of Housing and Urban Planning (DHUP), Ministry of Public Works and Transport (MPWT) · Public Works and Transport Institute (PTI) · Department of Public Works and Transport (DPWT) of Vientiane Capital
Overall Goal		Urban development is controlled and promoted in accordance with urban plan.
Project Purpose		Capacity of urban development control and promotion in accordance with urban plan is enhanced.
Outputs		<p>[Output 1]: The mechanism for discussion and sharing the views on the policy and issues of urban development is established.</p> <p>[Output 2]: Capacity of urban development management is enhanced.</p> <p>[Output 3]: Capacity to promote urban development projects is enhanced.</p> <p>[Output 4]: Capacity to regulate building construction is enhanced.</p>
Activities	Output 1	<p>1-1. To establish a stakeholders' meeting for urban development</p> <p>1-2. To hold stakeholders' meetings</p> <p>1-3. To visualize Vientiane's urban status using GIS data</p> <p>1-4. To introduce GIS platform in Vientiane</p> <p>1-5. To conduct training for GIS platform</p> <p>1-6. To organize a series of seminars on urban issues</p> <p>1-7. To analyze and discuss the improvement of urban development control and promotion systems</p>
	Output 2	<p>2-1. To review existing permission systems for urban development (implemented in Phase 1)</p> <p>2-2. To assess capacity of counterparts on operating development permission</p> <p>2-3. To propose improvement of urban development permission procedures</p> <p>2-4. To formulate manuals for operating development permission system</p> <p>2-5. To disseminate and promote development permission system</p> <p>2-6. To conduct on-the-job training</p>
	Output 3	<p>3-1. To analyze current condition and issues of urban development projects in terms of legal, financial, and organizational structure in Vientiane (Implemented in Phase 1)</p> <p>3-2. To discuss the scope of model planning for promoting urban collaborative development projects</p> <p>3-3. To select a target area of model planning</p> <p>3-4. To conduct basic study and survey of pilot area</p> <p>3-5. To hold workshops for participatory planning and technical meetings with stakeholders</p> <p>3-6. To formulate Area Plan for target area</p> <p>3-7. To select the priority urban collaborative development projects for detail study and planning for priority activities based on the Area Plan</p> <p>3-8. To have stakeholders meeting including community or private sectors on urban collaborative development projects by local government and private sector or community which are proposed as priority activities</p> <p>3-9. To formulate suggestions and guidelines for promoting urban collaborative development projects</p>
	Output 4	<p>4-1. To analyze building administration in Vientiane (Implemented in Phase 1)</p> <p>4-2. To analyze the draft national Building Code (B/C)</p> <p>4-3. To identify the points to be improved in the structure of the draft national B/C</p> <p>4-4. To formulate revised structure of the draft national B/C</p> <p>4-5. To study and advice the other countries technical standard to be applied to draft national B/C</p> <p>4-6. To finalize the draft national B/C</p>

Source: JICA Expert Team

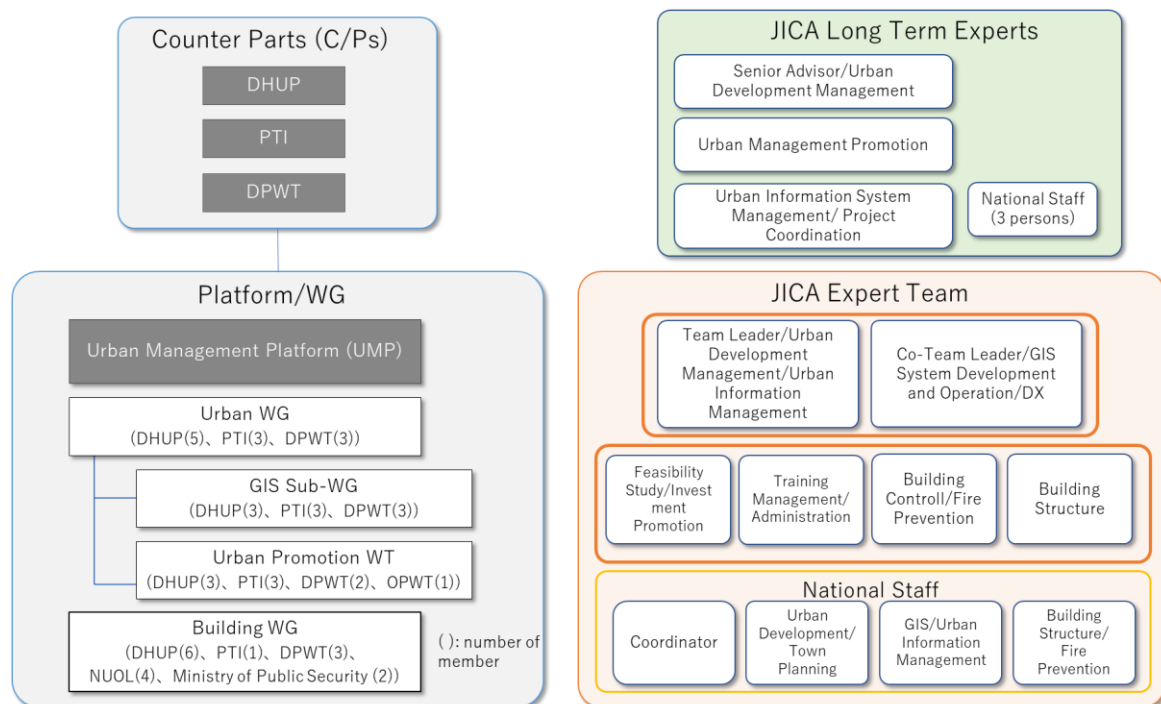
1.3 Purpose of the Project

This project is intended to enhance the capacity for urban development management and promotion in Vientiane, the capital of Laos, as part of the implementation phase of "The Project for Capacity Development on Urban Development Control and Promotion in Laos." In this project, activities related to GIS highlighted in Outputs 1 and 2 in Table 1-1, as well as activities related to Outputs 3 and 4, will be primarily implemented.

1.4 Implementation Structure

The JICA Expert Team established the organization by hiring national staffs in four fields to assist the Japanese experts in the on-site and online activities such as data collection, communication with C/Ps, interview with the stakeholders, and holding the working group and working team meetings.

The implementation structure of the project is shown in Figure 1-1. The JICA Expert Team consists of the six Japanese experts and national staffs. The member list is shown in Table 1-2.



Source: JICA Expert Team

Figure 1-1: Implementation Structure of the Project

Table 1-2: Members List of the JICA Expert Team

No.	Name	Designation	Remarks
	Japanese Expert		
1	Minoru Matsui	Team Leader/ Urban Development Management/ Urban Information Management	

No.	Name	Designation	Remarks
2	Chikara Uchida	Co-Team Leader/GIS System Development and Operation/ DX (Digital Transformation)	
3	Noriko Higo/ Akihito Muto	Feasibility Study/Investment Promotion	Ms. Higo has replaced with Mr. Muto at March 2022.
4	Tetsuro Nishimura	Building Control/Fire Prevention	
5	Yuji Kusawake	Building Structure	
6	Kunika Konaka/ Miki Homma/ Mizuho Inukai	Training Management/Administration	Ms. Konaka has replaced with Ms. Homma at July 2022. Ms. Homma was replaced with Ms. Inukai at July 2023. Ms. Inukai was replaced with Ms. Homma at February 2024.
National Staff			
7	Thodsakhone Razmounry	Interpreter / Project Coordinator	2022.1 ~ 2024.7
8	Vanxayxiong Naolorxiong	Building Code Engineer	2022.3 ~ 2024.7
9	Chayyang Chuvea	Urban Development/ Town Planning Assistant	2022.3 ~ 2024.1
10	Viengdravanh Phommachanh	GIS / Urban Information Management	2022.5 ~ 2022.12
11	Vilaysak Hakpasith	GIS/ Urban Information Management /Project Coordinator Assistant	2023.3 ~ 2024.1
12	Thong Sopha	Building Code Engineer	2023.11 ~ 2024.2
13	Bounleuam Sisoulath	Building Code Engineer	2023.11 ~ 2024.2
14	Siliphaphone Sivongxay	Interpreter / Project Coordinator Assistant	2024.2 ~ 2024.7
15	Thongphanh Thoummaly	GIS/Urban Information Management	2024.4 ~ 2024.7

Source: JICA Expert Team

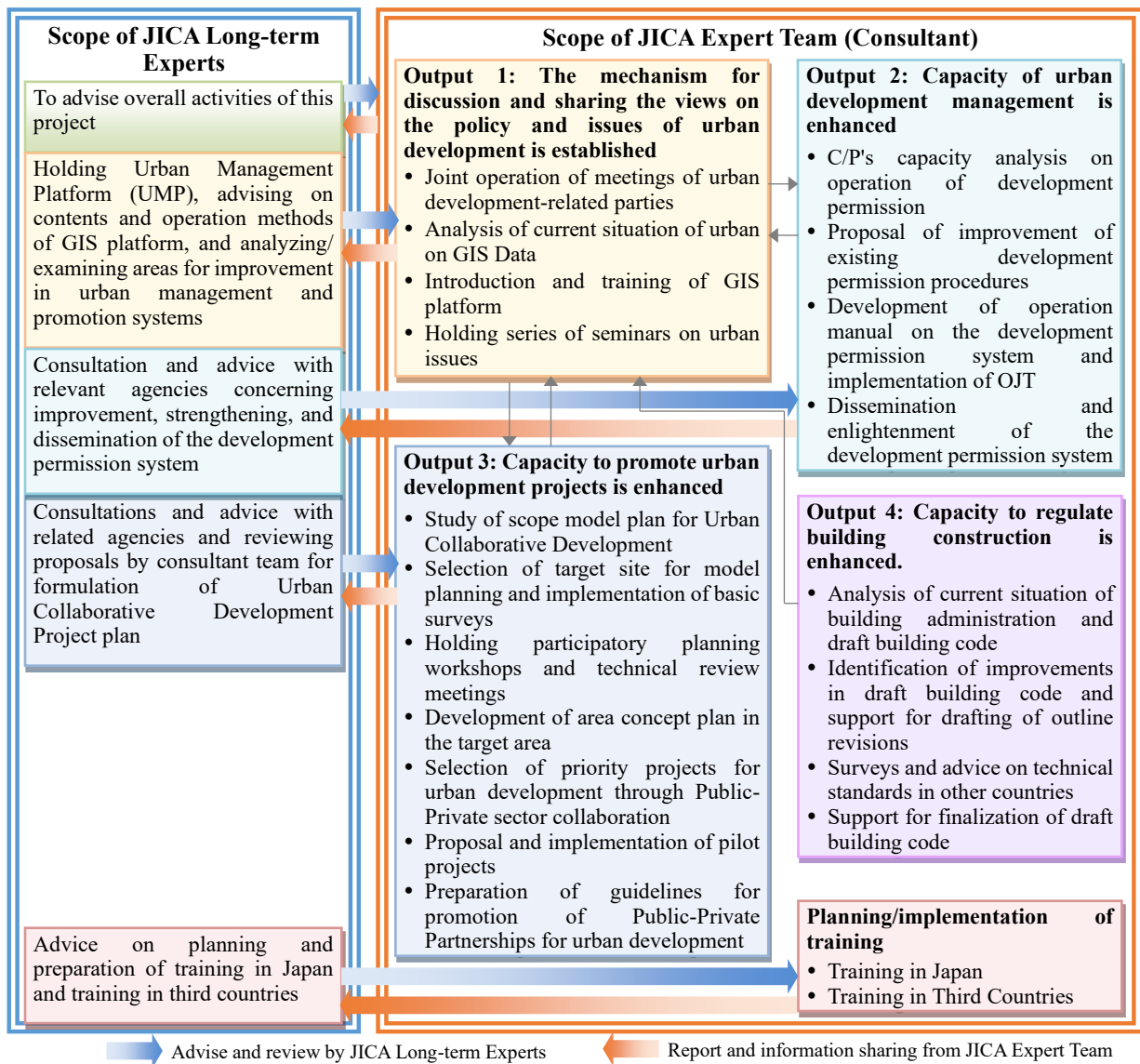
1.5 Demarcation with JICA Long-term Experts

The project shall be conducted in collaboration with the JICA Expert Team and three JICA Long-term Experts (1. Senior advisor/urban development management, 2. Urban management promotion, and 3. Urban information system management/project coordination).

The JICA Expert Team shall mainly conduct the GIS-related activities of Output 1 and the other activities of Outputs 2, 3 and 4. The activities of Output 1 are primarily conducted by the JICA Long-term Experts.

The JICA Expert Team shall regularly report the progress of activities, share information, and obtain advice from the JICA Long-term Experts.

The scope of the activities of the JICA Expert Team and the JICA Long-term Experts is shown in Figure 1-2.

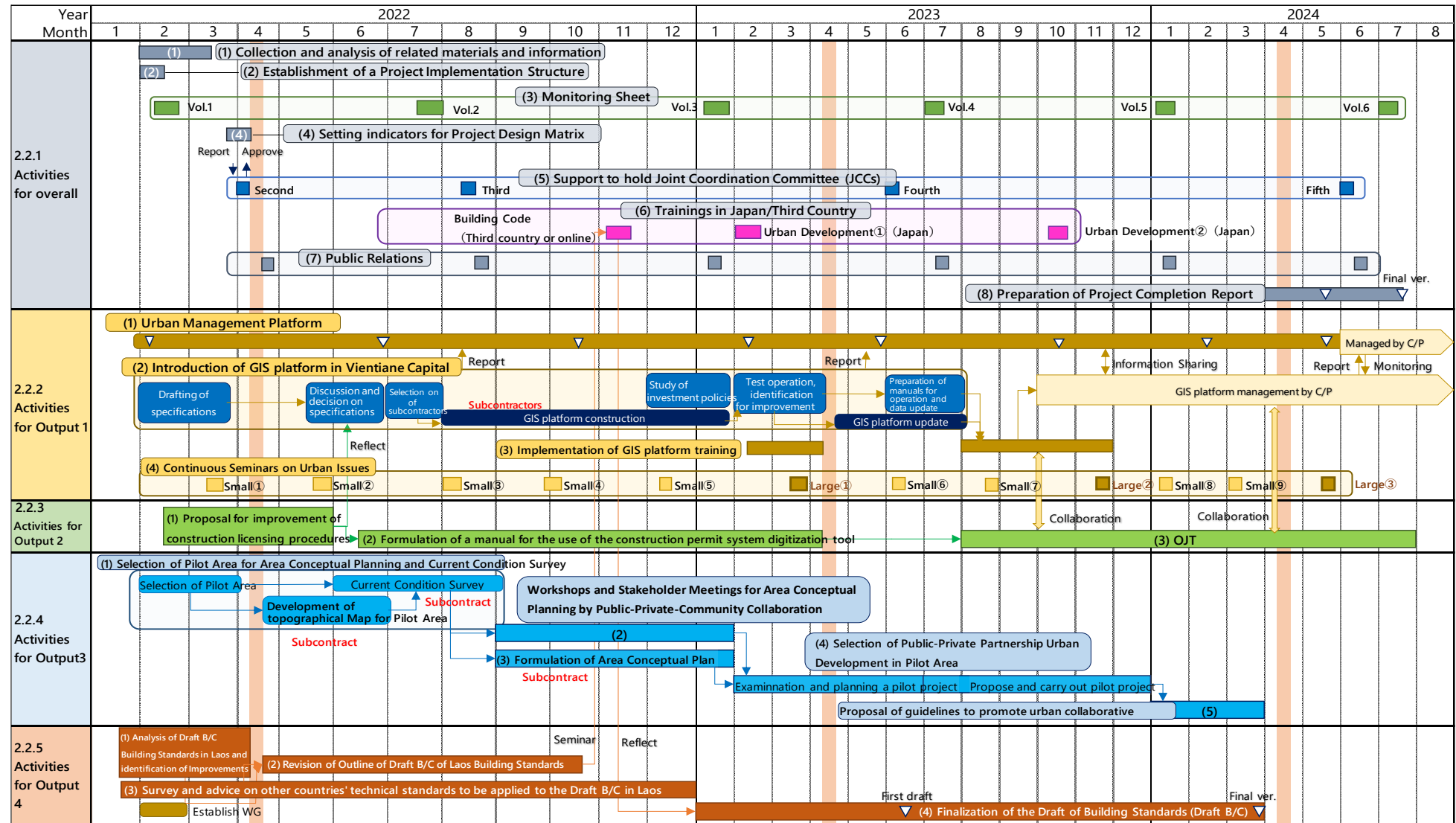


Source: JICA Expert Team

Figure 1-2: Scope of Activities of the JICA Expert Team and the JICA Long-term Experts

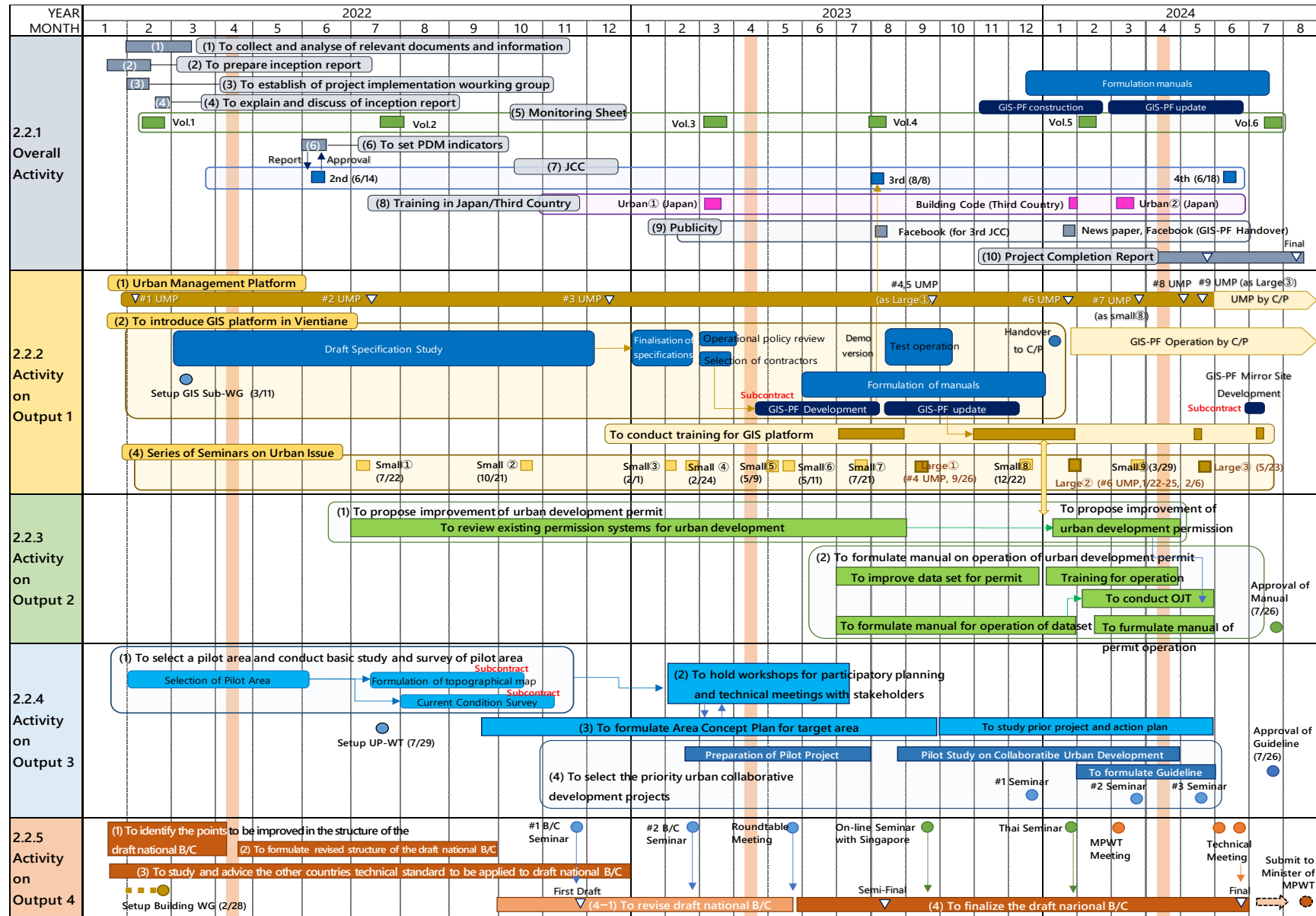
1.6 Implementation Workflow of the Project

Regarding the implementation workflow of the project, the initial plan is shown in Figure 1-3, and a version reflecting the results of the activities is shown in Figure 1-4.



Source: JICA Expert Team

Figure 1-3: Implementation Workflow of the Project (Initial Plan)



Source: JICA Expert Team

Figure 1-4: Implementation Workflow of the Project (Reflected version based on the results of the implementation of activities)

Chapter 2. Overall Activity

2.1 Results of Inputs

(1) Input of JICA Experts

In addition to the Chief and Long-term Experts, the JICA Expert Team consisting of six experts started the project activities for the implementation phase of the Project for Capacity Development on Urban Development Control and Promotion, based on the contract between JICA and the Japanese consultants on January 12, 2022. The JICA Expert Team spent a total of 26.80 person-months (PMs) on local and domestic work by the end of July 2024. The input of the JICA Experts is summarized in Table 2-1.

Table 2-1: Input of JICA Experts

Designation	Name	Number of PMs	
		Local Assignment	Domestic
Team Leader/ Urban Development Management/ Urban Information Management	M. Matsui	7.13	1.00
Co-Team Leader/GIS System Development and Operation/ DX (Digital Transformation)	C. Uchida	4.27	0.95
Feasibility Study/Investment Promotion	N. Higo/ A. Muto	1.83	1.20
Building Control/Fire Prevention	T. Nishimura	0.77	4.80
Building Structure	Y. Kusawake	0.00	1.75
Training Management/Administration	K. Konaka/ M. Homma/ M. Inukai	2.30	0.80
TOTAL PMs		26.80	
Planned PMs		27.30	

Source: JICA Expert Team

(2) Main Activities of JICA Experts

Table 2-2 shows main activities of each JICA Expert actually executed in the Project.

Table 2-2: Main Activities of JICA Experts

Designation	Name	Main Activities
Team Leader/ Urban Development Management/ Urban Information Management	M. Matsui	<p>Overall Management, Enforcement of Output 1, Output 2 & Output 3:</p> <ul style="list-style-type: none"> • Overall management of the project, • Planning and assistance of Japan training tours, • Assistance for holding UMP, Subsidiary assistance of GIS-PF development and O&M (Output 1), • Assistance of improvement of construction permit management database and development of operational guideline manual (Output 2), • Assistance of development of area concept plan in pilot area, Development of guideline for promotion of urban collaborative development (for the part of area concept plan mainly) (Output 3),

Designation	Name	Main Activities
		<ul style="list-style-type: none"> • Planning and assistance of third country seminars (Output 4)
Co-Team Leader/GIS System Development and Operation/ DX (Digital Transformation)	C. Uchida	<p>Overall Management, Enforcement of Output 1:</p> <ul style="list-style-type: none"> • Support for team leader on management of the Project, • Assistance of UMP, Assistance of GIS-PF development (subcontract management, assistance for information collection, etc.), Implementation of training sessions on GIS-PF, Development of operational manual for GIS-PF, Assistance for operation of GIS-PF (Output 1)
Feasibility Study/Investment Promotion	A. Muto	<p>Enforcement of Output 3:</p> <ul style="list-style-type: none"> • Consideration and proposal of pilot projects for collaborative urban development, Development of guideline for promotion of urban collaborative development (for the part of urban collaborative development mainly), Assistance for holding UMP and seminars on urban collaborative development (Output 3)
Building Control/Fire Prevention	T. Nishimura	<p>Enforcement of Output 4:</p> <ul style="list-style-type: none"> • Assistance and management of formulating B/C, Technical advice for fire prevention on B/C, Assistance for holding seminars on B/C, assistance for holding third country seminars (Output 4)
Building Structure	Y. Kusawake	<p>Enforcement of Output 4:</p> <ul style="list-style-type: none"> • Technical advice for building structure on B/C, Assistance for holding seminars on B/C (Output 4)
Training Management/Administration	K. Konaka/ M. Homma/ M. Inukai	<p>Overall Management, Japan Training Tours:</p> <ul style="list-style-type: none"> • Support for team leader on overall management of the Project (financial and employment affairs), • Planning and assistance of Japan training tours and third country seminars, • Assistance of subcontract contract

Source: JICA Expert Team

2.2 Achievement of Outputs

Achievements of the project were verified through the verifiable indicators stated in the PDM. The summary of the achievement of the project purpose and Outputs is shown in Table 2-3.

Table 2-3: Summary of Achievement of the Project

Items	Objectively Verifiable Indicators Stated in the PDM	Means of Verification Stated in the PDM	Achievement Based on the Verifiable Indicators
Project Purpose	(1) The urban development permission system is understood and trialed in Vientiane Capital.	(1) Questionnaire to related members of urban development	Achievement of the verifiable indicator was confirmed by the questionnaire to C/Ps members. (The detail of the verification is explained in the Chapter 8)
	(2) Institutions and systems are necessary to be improved and established for the better urban development control and promotion are listed up and discussions on them are started.	(2) Minutes of stakeholders' meeting	Achievement of the verifiable indicator was confirmed by the confirmation of the minutes of meetings. (The detail of the verification is explained in the Chapter 8)
Output 1	(1) Urban Management Platform (UMP) including GIS platform in Vientiane is operated and maintained by C/P.	(1) Record of Discussions by utilizing GIS platform	<ul style="list-style-type: none"> • Revision of TOR of UMP to be transferred to C/P was confirmed by the minutes of UMP 8. • UMP 9 was prepared and operated by C/P themselves. • Capacity of C/P on operation and maintain of GIS platform was enhanced through SWGs and training sessions. • Securing the maintenance budget by DHUP was confirmed by the minutes of Urban WG 45.
	(2) Issues to be discussed in the stakeholders meeting are proposed by all the participating organizations.	(2) Minutes of stakeholders' meetings	C/P presented and discussed issue on urban development and management in UMPs and Urban WGs.
Output 2	(1) Necessary information for developers such as zoning code and land use plan is open to the public.	(1) Web site or materials for public information	Land use plan of GUP of Vientiane Capital was published by the GIS-PF.
	(2) The improved development permission system is proposed.	(2) Draft operation manuals of development permission	Operation manual including institutional improvement of development permission was formulated and approved by C/P.
Output 3	(1) The Area Concept Plan is drafted and institutional issues for implementation are identified.	(1) The Area Concept Plan	The Area Concept Plan was formulated and approved by C/P. C/P's action plan including institutional improvement to implement the Area Plan was proposed.
	(2) Guideline for promoting Urban Collaborative Development Project is formulated.	(2) The guideline for promoting Urban Collaborative Development Projects	The guideline was formulated and approved by C/P.
	(1) Draft national B/C, including	(1) Complete Legal	Legal and legislation check was completed by

Items	Objectively Verifiable Indicators Stated in the PDM	Means of Verification Stated in the PDM	Achievement Based on the Verifiable Indicators
Output 4	application of other country's technical standards, is finalized for approval.	check and Legislation check	Building WG and local legal experts.
		(2) The finalized draft national B/C	Draft national B/C was finalized for submission for the MPWT's approval.

Source: JICA Expert Team based on the PDM of the CDUDCP

2.3 Joint Coordination Committee (JCC)

JICA Expert Team had held Joint Coordination Committee (JCC) meetings during the project to discuss implementation structure, share overall schedule, approve annual activity plan, and exchange opinions on key issues. Outlines of each JCC meeting is described below. The 1st JCC meeting was held in June 2021 with the supporting of the JICA Long-term Experts, before JICA Expert Team joined the project.

(1) 2nd JCC Meeting in June 2022

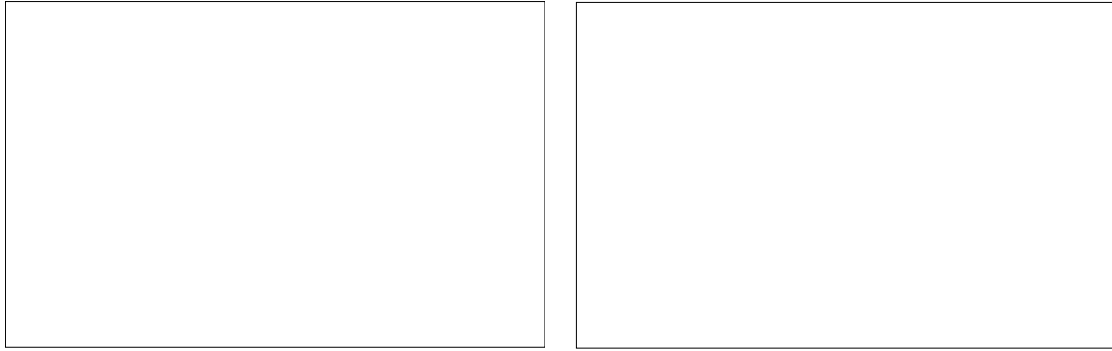
On June 14, 2022, the 2nd JCC meeting was held at Crowne Plaza Hotel in Vientiane Capital. The meeting was chaired by Dr. Viengnam DOUANGPACHANH, the Director General of the DHUP of MPWT, and Mr. Noriyuki ITO, Senior Representative of the JICA Laos Office.

In the meeting, the overall progress of CDUDCP, progress of each Working Group (WG), modification of PDM, and selection of Pilot Area for Area Concept Plan were approved. Various comments on Outputs 1, 3 and 4 were raised during the discussion. The necessary actions and feedback for each comment were discussed at the Urban WG and addressed by C/P and the JICA Expert Team. The minutes and handouts of the 2nd JCC meeting are summarized in Annex 7-1.

(2) 3rd JCC Meeting in August 2023

On August 8, 2023, the 3rd JCC meeting was held at Crowne Plaza Hotel in Vientiane Capital. The meeting was chaired by H.E. Madame Vilaykham PHOSALATH, the Vice Minister of the MPWT, and Mr. Toshio NAGASE, Chief Representative of the JICA Laos Office.

In the meeting, the overall progress of the CDUDCP and the progress of each Working Group (WG) were presented and discussed, and a demo version of the GIS platform named VirGo was introduced to the participants. The minutes and handouts of the 3rd JCC meeting are summarized in Annex 7-2.



Source: JICA Expert Team

Figure 2-1: Photo of 3rd JCC Meeting

(3) 4th JCC Meeting in June 2024

On June 18, 2024, the 4th JCC meeting was held at Lao Plaza Hotel in Vientiane Capital. The meeting was chaired by H.E. Mr. Lan SENG APHONE, the Vice Minister of the MPWT, and Mr. Noriyuki ITO, Senior Representative of the JICA Laos Office.

In the meeting, the achievements of the activities and outcomes of each output and the verification of the achievements of the CDUDCP were confirmed. In addition, recommendations for sustainability were presented by the JICA Expert Team, and the way forward for sustainable urban development management was presented by the C/Ps. The minutes and handouts of the 4th JCC meeting are summarized in Annex 7-3.



Source: JICA Expert Team

Figure 2-2: Photo of 4th JCC Meeting

2.4 Urban Working Group

As a supporting body for the Urban Management Platform, the Urban Working Group (Urban WG) was established to regularly convene meetings for fostering capacity building within C/Ps and facilitating information sharing. The Urban WG was held as shown in Table 2-4. The Urban WG had established by the JICA Long-term expert in July 2021 and #1 to #11 Urban WGs had conducted before February 2022 when the JICA Expert Team joined the project.

Table 2-4: Urban WG and Topics

No.	Date	Agenda	Points and Result of Discussion
#12	February 9, 2022	<ul style="list-style-type: none"> • Introduction of JICA Experts • Feedback of 1st UMP • Criteria of pilot area selection (OP3) • Outline of the GIS-PF <p>(Note: UMP is explained in the section of 3.2 Urban Management Platform)</p>	<ul style="list-style-type: none"> • Feedback of the 1st UMP held on February 2 was reported and improvement points for next UMP were shared. • Criteria for selecting pilot area is presented and discussed. • Responsible organization for managing the GIS-PF was discussed.
#13	February 24	<ul style="list-style-type: none"> • Evaluation of candidate sites for pilot area • Activities on the GIS-PF 	<ul style="list-style-type: none"> • Draft result of evaluation of three candidate sites for pilot area was discussed. • The policy to establish Sub-WG (GIS-SWG) to discuss on the GIS-PF was confirmed.
#14	March 9	<ul style="list-style-type: none"> • Analysis and evaluation of candidates of pilot area • Report of activities of GIS SWG 	<ul style="list-style-type: none"> • Discuss on draft result of evaluation of candidates of pilot areas and exchange opinions for the finalization.
#15	March 23	<ul style="list-style-type: none"> • Questionnaire survey to village on pilot area and opinion sheet • Report of activities of GIS SWG 	<ul style="list-style-type: none"> • Various opinion on the candidate pilot areas were raised from WG members. • To determine pilot area, it was agreed that each WG member will submit the opinion sheet and pilot area will be chosen based by voting.
#16	March 30	<ul style="list-style-type: none"> • Selection of pilot area • Confirmation of monitoring sheet Ver.1 and objectively verifiable indicators of PDM 	<ul style="list-style-type: none"> • Candidate B was selected by WG members. It was confirmed to need consensus from Vientiane Capital for selected pilot area prior to JCC • The contents of monitoring sheet Ver.1 were presented by JICA Expert Team and C/P answered to examine the details. • Modification of PDM was agreed from Lao side.
#17	April 6	<ul style="list-style-type: none"> • TOR of the GIS-PF • Preparation of 2nd JCC 	<ul style="list-style-type: none"> • The plans and objectives of GIS training in CDUDCP were confirmed and discussed with DHUP. • The draft agenda of JCC was presented by the JICA Expert Team and it was agreed that Lao side prepare select presenters and participants.
#18	May 11	<ul style="list-style-type: none"> • Introduction of use case of GIS in urban development projects • Preparation of 2nd JCC 	<ul style="list-style-type: none"> • The objective of GIS platform of CDUDCP data was confirmed as VTE capital area. The details of data are to be discussed further. • The schedule of briefing for vice mayor and deputy minister before JCC were confirmed.
#19	June 8	<ul style="list-style-type: none"> • Activities report of GIS-SWG • Schedule of area concept plan 	<ul style="list-style-type: none"> • It was shared by DHUP that the government has project budget for digitization. Any possible collaborations with the GIS-PF are to be discussed. • Establishment of Urban Promotion Working Team (UP-WT) was proposed by the JICA Expert Team, and the member will be selected by C/P.
#20	June 27	<ul style="list-style-type: none"> • Look back of 2nd JCC • TOR of topo mapping and current condition survey of pilot area 	<ul style="list-style-type: none"> • The direction to respond comments/opinions at 2nd JCC was discussed. • The area and villages included in the topo mapping and current condition survey was confirmed
#21	July 6	<ul style="list-style-type: none"> • Draft structure and contents of the GIS-PF • Report of 1st seminar on urban issue • Analysis of issues with the current 	<ul style="list-style-type: none"> • The member list of UP-WT will be sent after approved by DG of DHUP • C/P agreed with the concept of the GIS-PF function related to Construction permission

No.	Date	Agenda	Points and Result of Discussion
		<ul style="list-style-type: none"> permission system Coordination of 2nd UMP 	<ul style="list-style-type: none"> system. They will discuss such issues with their Director General that current permission system is not enough disseminated to the public.
#22	July 21	<ul style="list-style-type: none"> Coordination of 2nd UMP Review of project outputs to date and future plans Progress of GIS-SWG Progress of Area Conceptual Planning 	<ul style="list-style-type: none"> Agenda of UMP was confirmed by Urban WG. Project outputs and future project activity were reminded. Objectives and members of UP-WT was confirmed Reduce target area for current condition survey to the cost reduction was approved by Urban WG
#23	August 3	<ul style="list-style-type: none"> Discussion points and learnt from 2nd UMP Status of GUP and Land Use regulation Progress of GIS-SWG and UP-WT 	<ul style="list-style-type: none"> Discussion points and opinions from participants of 2nd UMP were confirmed. Minister of MPWT has signed the blueprint of GUP in Vientiane Capital until 2030 on August 1, 2022. Work plan for GIS-SWG and UP-WT were confirmed.
#24	August 24	<ul style="list-style-type: none"> Framework and O&M (Operation and Management) for GIS-PF Progress of Area Conceptual Planning and UP-WT 	<ul style="list-style-type: none"> The necessary information, number of users, available data, cost estimation, and goals, for developing GIS-PF was confirmed. The progress of formulating Topographical map was confirmed.
#25	September 15	<ul style="list-style-type: none"> Framework and O&M for GIS-PF TOR for Area Conceptual Planning 	<ul style="list-style-type: none"> The necessary information for GIS-PF was continuously discussed. Directions of TOR for Area Conceptual Planning were confirmed.
#26	October 19	<ul style="list-style-type: none"> Framework and O&M for GIS-PF Progress of Area Conceptual Planning and UP-WT Announcement of 2nd Seminar on Urban Issues 	<ul style="list-style-type: none"> Progress of GIS-PF, especially for cost estimation and data collection, were confirmed. The scale and objective of developed topographical map were confirmed. The outlines of 2nd urban seminar were explained.
#27	November 10	<ul style="list-style-type: none"> Report of 2nd Seminar on Urban Issues Progress of Area Conceptual Planning and UP-WT Way forward 3rd UMP 	<ul style="list-style-type: none"> The result of 2nd urban seminar was reported. The methodologies for implementing area conceptual planning were discussed. The proposed agenda of 3rd UMP was agreed by C/P.
#28	November 23	<ul style="list-style-type: none"> Framework and O&M for GIS-PF Progress of Area Conceptual Planning and UP-WT (Report on Pre-sounding for pilot project) Coordination for 3rd UMP 	<ul style="list-style-type: none"> JICA Expert Team will hold a consultation meeting with DHUP (MPWT) for maintenance cost of GIS-PF. The policies for installation of construction permit database to GIS-PF in the future were discussed. Two options for the pilot project were explained and discussed. The date of 3rd UMP was moved to December 23, 2022, considering schedule of other events.
#29	December 7	<ul style="list-style-type: none"> Coordination for 3rd UMP Progress of Area Conceptual Planning and UP-WT (Visioning for the area) TOR, O&M and Cost estimation for GIS-PF 	<ul style="list-style-type: none"> The C/P agreed with proposals for preparation of 3rd UMP. Activities regarding Area Conceptual Planning were divided into main activity by JICA Experts Team and WT members and design works by the outsourcer. Maintenance cost for GIS-PF was continuously discussed.
#30	January 18,	<ul style="list-style-type: none"> Review and feedback of the 3rd UMP 	<ul style="list-style-type: none"> The result of satisfaction questionnaire after 3rd UMP was reported.

No.	Date	Agenda	Points and Result of Discussion
	2023	<ul style="list-style-type: none"> • RFP and Operation and Maintenance for the GIS-PF • The progress of Area Concept Planning and UP-WT • The way forward to implement the project (Outputs 1-3) 	<ul style="list-style-type: none"> • Maintenance cost for the GIS-PF was continuously discussed.
#31	February 1	<ul style="list-style-type: none"> • RfP for the GIS-PF • The progress of Area Concept Planning and UP-WT • The way forward to implement the project (Outputs 1-3) 	<ul style="list-style-type: none"> • Detailed schedule regarding procurement and development of the GIS-PF by subcontract work was shared.
#32	February 27	<ul style="list-style-type: none"> • Approve RfP for the GIS-PF • Report on Data Collection • The progress of Area Concept Planning and UP-WT • The way forward to implement the project (Outputs 1-3) 	<ul style="list-style-type: none"> • RfP for the subcontract work of the GIS-PF was virtually approved and the roles of C/P regarding operation and management of the GIS-PF were discussed. • Status of data collection for the GIS-PF was shared and the meetings with relevant agencies for data request were to be held. • Result of the 1st stakeholder WS in the pilot area was shared and next activity was confirmed.
#33	March 29	<ul style="list-style-type: none"> • SNS Page for MPWT and UMP • Procurement status of the subcontractor for development of the GIS-PF • Confirmation of O&M roles • Progress of GIS data collection • Progress of Area Concept Planning 	<ul style="list-style-type: none"> • The idea of SNS page, Facebook, was introduced and discussed. • The fact that MPWT's server is available for the GIS-PF was confirmed. • Demarcation of C/P for O&M tasks was discussed and approved. • The policy that to be contact to relevant agencies and collected GIS data of technical infrastructure was confirmed. • Results of questionnaires from the community were confirmed.
#34	April 25	<ul style="list-style-type: none"> • Procurement of subcontract work for development of the GIS-PF • Status of GIS data collection • Format of GIS data in the GIS-PF • Coordination for stakeholders meeting and Area Concept Planning 	<ul style="list-style-type: none"> • Name of the domain used in the GIS-PF was discussed and approved. • The latest status of data collection was confirmed. • Draft formats of GIS data used in the GIS-PF were introduced and discussed. • The activity for the 2nd community workshop that will be held in early May was confirmed.
#35	May 18	<ul style="list-style-type: none"> • Progress of development of the GIS-PF • Status of GIS data collection • Visualization of urban information • Progress of Area Concept Planning • Announcements of MPWT/UMP Facebook 	<ul style="list-style-type: none"> • Progress of development of the GIS-PF by the subcontractor was confirmed. • The updated status and vision of data collection were explained and discussed. • Long list of visualization theme was introduced, and the first three themes were selected. • Strategy of area concept planning and comments for pilot project were explained and discussed.
#36	June 27	<ul style="list-style-type: none"> • Progress of development of the GIS-PF • Status of GIS data collection • Strategy and Area Concept Planning • Preparation for the 3rd JCC 	<ul style="list-style-type: none"> • Scope of Area Concept Planning and the approval process after the project were discussed. • Schedule for development of GIS-PF was confirmed and another domain name was approved. • Remaining items to be collected were confirmed. • The result of consultation meeting was reported, and strategy of Area Concept Plan was explained and discussed. • The draft agenda of 3rd JCC was explained and discussed.
#37	July 21	<ul style="list-style-type: none"> • Preparation for the 3rd JCC 	<ul style="list-style-type: none"> • Modified agenda, participants list, and materials

No.	Date	Agenda	Points and Result of Discussion
		<ul style="list-style-type: none"> Progress of development of the GIS-PF Progress of UP-WT activities 	<ul style="list-style-type: none"> for 3rd JCC were confirmed. Demonstration of GIS-PF was presented. The fact that almost all listed GIS data were collected and already installed into the GIS-PF was reported. The next activity for the 3rd community workshop that will be held in late July was confirmed. Status report on the pre-feasibility study and the suspension of pilot project for Urban Collaborative Development (OP3).
#38	August 23	<ul style="list-style-type: none"> Review on the 3rd JCC Coordination for the 4th and 5th UMP Report on the development and data collection for the GIS-PF. Report of issue on data security Progress and way forward of improvement of construction permit management system. 	<ul style="list-style-type: none"> Comments in the 3rd JCC and the countermeasure of them were discussed. Agenda of 4th and 5th UMP were confirmed. Approval of data publication for the GIS-PF will be requested to data provider agencies by C/P. Progress of improvement of the GIS-PF was confirmed. Progress and next activity for construction permit management system were confirmed.
#39	September 19	<ul style="list-style-type: none"> Coordination report of 4th and 5th UMP Progress of development and data publication of the GIS-PF Activity report of construction permit management system 	<ul style="list-style-type: none"> Progress of coordination for the 4th and 5th UMP was confirmed and reminded. Results of joint coordination meeting with data providers and publication level of each data were reported and the status of MoM that to be authorized with participant's signature was confirmed. Data folder of construction permit management system and future utilization of the system with OPWT were introduced.
#40	October 24	<ul style="list-style-type: none"> Review 4th and 5th UMP Progress and way forward of Output 3 Progress of development and O&M for the GIS-PF 	<ul style="list-style-type: none"> The results of the 4th and 5th UMP were reported. The situation that CDUDCP shifted a hard component facility project (pilot project) to pilot survey was confirmed. (Pilot survey: A study of highly feasible project schemes among collaborative urban development projects, and a study of target project types and business models.) The progress of development of the GIS-PF and modification points to finalize the GIS-PF were explained and discussed. Assignment of O&M team was requested to C/P by JICA Expert Team.
#41	November 21	<ul style="list-style-type: none"> Progress of development of the GIS-PF and training plan for O&M Progress of questionnaire and preparation for the seminar on pilot survey Concept of the next UMPs 	<ul style="list-style-type: none"> Outline of O&M training (ToT session) and handover schedule were explained and confirmed. Progress of regeneration of old domain (urbangis.mpwt.gov.la) was reported. Progress of questionnaire for private sectors and agenda of the seminar to be held in December were explained and discussed. Schedule on UMP meetings was shared.
#42	December 19	<ul style="list-style-type: none"> Progress of ToT sessions for O&M of the GIS-PF Progress of improvement of construction permit management system Results of questionnaire and preparation for the seminar on pilot 	<ul style="list-style-type: none"> Progress of ToT sessions was reported. List of O&M team was agreed by C/P. Plan on training for operating construction permit management system was explained. Results of questionnaire for private sectors were shared. Coordination for seminar on pilot survey was

No.	Date	Agenda	Points and Result of Discussion
		<ul style="list-style-type: none"> survey Coordination for the 6th UMP 	<ul style="list-style-type: none"> confirmed. Coordination plan for the 6th UMP was agreed.
#43	January 25, 2024	<ul style="list-style-type: none"> Breaking report of 6th UMP Monitoring and follow-up plan of VirGo operation and maintenance Operation manual of construction permit management system Result and way forward of the seminar on pilot survey 	<ul style="list-style-type: none"> Progress of 6th UMP was informed. Result of questionnaire of ToT sessions and draft of monitoring sheet were instructed. Revision of operation manual and training plans were introduced. Result of questionnaire of the seminar for private sector was reported.
#44	February 20	<ul style="list-style-type: none"> Report of 6th UMP Monitoring and follow-up plan of VirGo operation and maintenance Improvement of construction permit management Project components of area concept plan in pilot area 	<ul style="list-style-type: none"> Comments in 6th UMP were shared. Updated version of monitoring sheet was instructed. Issues on current construction permit and their countermeasures were introduced and discussed. Project components of area concept plan in pilot area were discussed.
#45	March 26	<ul style="list-style-type: none"> Report training in Japan Continuation of the UMP and revise of the TOR Monitoring report and training plan for O&M Progress report of Output 2: towards an improved construction permit management system Progress report of Output 3: way forward of pilot survey 	<ul style="list-style-type: none"> Lesson learned in training tour in Japan was reported and confirmed. The policy that C/P will continue UMP after CDUDCP was confirmed. Progress of monitoring O&M of the GIS-PF was reported, and additional training plans were introduced. Current issues on construction permit were identified and countermeasures for the issues were proposed. Project components of area concept plan in pilot area were discussed.
#46	April 30	<ul style="list-style-type: none"> Coordination for UMP and revise of the TOR Progress report of Output 3: area concept plan and guideline (draft) Preparation of final JCC, and announcement of questionnaire for evaluation of project 	<ul style="list-style-type: none"> Expected schedule and necessary coordination for 8th and 9th UMP were shared. Officialization of area concept plan and draft framework of collaborative urban development guideline were explained and discussed. Agenda of final JCC was instructed and coordination schedule for JCC was confirmed.
#47	May 21	<ul style="list-style-type: none"> Publication of guidance and revise TOR at 8th UMP GIS-PF seminar at NUOL at 9th UMP Preparation of final JCC 	<ul style="list-style-type: none"> Key points of guidelines to be presented at 8th UMP and revised TOR of UMP were confirmed. Novelties for participants and video of VirGo explanation for 9th UMP were introduced. Agenda and materials for final JCC were discussed and confirmed.

Source: JICA Expert Team

Table 2-5: Members List of Urban WG

Organization	Full Name
Department of Housing and Urban Planning (DHUP)	- Mr. Dao KEOSUKAN, Director, Division of Urban Planning
	- Ms. Larphet DUANGKHEMTHORNG, Deputy Director, Division of Urban Planning
	- Mr. Sulikorn XAYXANA, Technical staff, Division of Urban Planning
	- Mr. Vasaly SISAVATH, Technical staff, Division of Urban Planning
	- Mr. Thavisak PHENGMALA, Technical staff, Division of Urban Planning
Public Works and Transport Institute (PTI)	- Mr. Bouavanh LUANGXAY, Director Division, Division of Technical Research on Civil Engineering and Transportation
	- Mr. Somchit CHERSUANTHOR, Deputy Head of the Secretariat of the Lao Council of Architects and Civil Engineers
	- Ms. Phattharavady OUDOMDETH, Technical staff, Division of Technical Research on Civil

	Engineering and Transportation
Department of Public Works and Transport (DPWT)	- Mr. Phouvong VIENGVILAY, Deputy Director, Division of Housing-Urban Planning and Environment - Mr. Sonepaseuth PHOTHISA, Technical staff, Division of Housing-Urban Planning and Environment - Mr. Vientihane BANTHONGXAY, Technical staff, Division of Housing-Urban Planning and Environment

Source: JICA Expert Team

2.5 Japan Training Tour

(1) 1st Japan Training Tour in March 2023

The 1st Japan training tour was conducted from March 6 to 17, 2023. This training was held jointly by the urban development sector of the Project for Capacity Development on Urban Development Control and Promotion in Lao (CDUDCP) and the urban transportation sector of the Project for Institutional Capacity Building for Sustainable Urban Transport System in Lao (VTMP).

The aims of this training for the urban development sector were:

- 1) To understand the mechanisms of cooperation with urban development-related organizations in Japanese local governments;
- 2) To understand information sharing systems within local governments, information systems for public access, and their management;
- 3) To understand the methods of examination and project management for building permits and development permits; and
- 4) To understand the role of local governments in promoting and managing public-private partnership in urban development.

15 people from CDUDCP and VTMP participated in the training. The list of participants and the program are shown in Table 2-6 and Table 2-7, respectively.

Table 2-6: List of Participants of the 1st Japan Training Tour

No.	Name	Organization	Position
CDUDCP			
1	Mr. MYVAPADITH Nalongxay	Department of Housing and Urban Planning (DHUP)	Deputy Director General
2	Mr. KEOSOUKANH Dao	Department of Housing and Urban Planning (DUHP)	Division Head
3	Mr. SYSAVATH Vasaly	Department of Housing and Urban Planning (DHUP)	Technical Staff
4	Mr. LOUANGSAY Bouavan	Public Work and Transport Institute (PTI)	Director
5	Mr. CHERSHOUATHOR Somchit	Public Works and Transport Institute (PTI)	Technical Staff
6	Mr. VIENGVILAY Phouvong	Division of Housing and Urban Planning	Deputy Direct
7	Mr. PHOMMASACK Desa	Office of Public Works and Transport of Xaysettha District	Deputy Director
8	Mr. PHOTHISANE Sonepaseuth	Division of Housing and Urban Planning	Technical Staff
VTMP			
9	Mr. PHOMMARATH Sangkhom	Department of Traffic Police of Vientiane Capital	Deputy Director General
10	Mr. PHOMMACHACK Phouthavanh	Department of Transport, Ministry of Public Works and Transport	Technical Staff
11	Mr. SIRISACK Putthaxay	Department of Transport, Ministry of Public Works and Transport	Technical Staff
12	Mr. SUBTHAVY Phouthachanh	Transport Division, Department of Public Works and Transport of Vientiane Capital	Technical Staff
13	Mr. SAIGNASANE Lamkha	Transport Division, Department of Public Works and Transport of Vientiane Capital	Director
14	Mr. PHOMSOUVANH Bounpone	Transport Division, Department of Public Works and Transport of Vientiane Capital	Unit Head

No.	Name	Organization	Position
15	Mr. LEUANGSAMLAN Cheuang	Public Security Office, Department of Traffic Police of Vientiane Capital	Deputy Head

Source: JICA Expert Team

Table 2-7: Program of the 1st Japan Training Tour

Day		Menu	Program	Location	
1	March 6	-	-	Vientiane to Tokyo	
2	7	A.M.	Meeting	Visit to JICA Tokyo (Courtesy call and briefing)	Tokyo
		P.M.	Site visit	Site visit to urban road network and public transportation system	
3	8	A.M.	Lecture	- Coordination mechanisms for urban development in Japanese municipalities - Information sharing systems in municipality, and dissemination system to the public	Chiba
		P.M.	Site Visit	Office visit for information sharing system and management in the municipality	
			Discussion	Discussion on coordination mechanism and information sharing system in Laos	
4	9		Lecture	Regional public transportation plans and case studies	
5	10		Site Visit	Site visit to intermodal transit facilities, barrier-free and pedestrian environments	Yokohama
6,7	11, 12		-	Day off	-
8	13 (VTMP) (CDUDCP)		Site visit	Site visit to public transportation system, traffic management and parking facilities	Tokyo
		A.M.	Lecture	Permit system for building and urban development	Chiba
		P.M.	Presentation	Challenges to improve the current construction permit system in Laos	
		Discussion	Discussion on the improvement of permit system in Laos		
9	14	A.M.	Lecture	Case studies of collaborative urban development and the role of local governments	Saitama
		P.M.	Site Visit	Visit to case study sites of collaborative urban development	
10	15		Work	Preparation for presentation of result of training	Tokyo
11	16		Work, Presentation	- [CDUDUP group] Findings for realization of collaborative urban development and improvement of construction permit system - [VTMP group] Review on Vientiane Transportation M/P - Overall summary	
12	17	-	-	Tokyo to Vientiane	-

Source: JICA Expert Team



Source: JICA Expert Team

Figure 2-3: Lecture and Site Visits of the 1st Japan Training Tour

(2) 2nd Japan Training Tour in March 2024

The 2nd Japan training tour was conducted from March 3 to 15, 2024. The aims of this training were:

- 1) To understand the stakeholder coordination mechanism and operation of local governments for urban development,
- 2) To understand the establishment and operational methods of urban information dissemination systems, and the cooperation with the private sectors,
- 3) To understand the system and operation methods of the inspection and management for permits on building and urban development, and
- 4) To understand the mechanism of various cases of urban collaborative development, and the promotion and implementation of the project.

12 people from DHUP, PTI and DPWT participated in the training. The list of participants and the program are shown in Table 2-8 and Table 2-9, respectively.

Table 2-8: List of Participants of the 2nd Japan Training Tour

No.	Name	Organization	Position
1	Dr. Viengnam DOUANGPACHANH	Dept. of Housing and Urban Planning (DHUP)	Director General
2	Ms. Visaphone INTILATH	Dept. of Housing and Urban Planning (DHUP)	Deputy Director General
3	Mr. Lonechanh YANGCHOUBOULOM	Dept. of Housing and Urban Planning (DHUP)	Head of Division
4	Mr. Sulikorn XAYXANA	Dept. of Housing and Urban Planning (DHUP)	Technical Staff
5	Mr. Phaiboun SOUNAKHEN	Dept. of Housing and Urban Planning (DHUP)	Technical Staff
6	Mr. Chanthavangso OUDOMDETH	Public Work and Transport Institute (PTI)	Deputy Director General
7	Ms. Phattharavady OUDOMDETH	Public Work and Transport Institute (PTI)	Technical Staff
8	Mrs. Seangchan LUSA	Public Work and Transport Institute (PTI)	Technical Staff
9	Dr. Somchaivang DETH OUDOM	Department of Public Works and Transport of Vientiane Capital (DPWT)	Deputy Director General
10	Mr. Sonepaseuth PHOTHISANE	Department of Public Works and Transport of Vientiane Capital (DPWT)	Technical Staff
11	Mr. Sinthanou PHANTHAVONG	Department of Public Works and Transport of Vientiane Capital (DPWT)	Technical Staff
12	Mr. Aliyasack PHENGSENGSAY	Department of Public Works and Transport of Vientiane Capital (DPWT)	Technical Staff

Source: JICA Expert Team

Table 2-9: Program of the 2nd Japan Training Tour

Day	Menu	Program	Location
1	March 4	-	Vientiane to Tokyo
2	5	A.M. Meeting	Visit to JICA Tokyo (Courtesy call and briefing)
		P.M. Lecture	
3	6	A.M. Lecture	Urban Development from the Participation of Residents -Taishido and Mishuku areas-

Day		Menu	Program	Location	
		P.M.	Site Visit	Taishido and Mishuku areas	
4	7	A.M.	Lecture	Introduction to Earthquake Engineering and Seismic Codes in the World	Tokyo
		P.M.	Site Visit	Urban Redevelopment Projects and Greater SHIBUYA 2.0 Strategy	
5	8		Lecture	DX in Susono city DX Projects in Digital Susono Association	Shizuoka
6,7	9, 10		-	Day off	-
8	11	P.M.	Lecture	Utsunomiya City's Urban Development Strategy and TOD	Tochigi
		P.M.	Site Visit	LRT in Utsunomiya city	
9	12	A.M.	Lecture	Management and Operation of Building Code in Utsunomiya City	Tochigi
		P.M.	Discussion	Discussion for Presentation of Result of Training	
10	13	A.M.	Lecture	Urban Management through Collaboration between the Public and Private Sectors	Tokyo
		P.M.	Site Visit	Park-PFI in Meiji Park	
11	14	A.M.	Work	Preparation for Presentation of Result of Training	Tokyo
		P.M.	Presentation	- Overall of training program - Training results - Ways forward	
12	15	-	-	Tokyo to Vientiane	-

Source: JICA Expert Team



Source: JICA Expert Team

Figure 2-4: Lecture and Site Visits of the 2nd Japan Training Tour

(3) Outcomes of Japan Training Tours

In each training in Japan, lectures and site visits were conducted on the following topics: the structure and mechanisms of urban management organizations, information-sharing systems of local governments, building inspections and development permits, and community participatory town planning.

In the 1st Japan Training Tour, the trainees presented their learnings and Lao side action plans, as shown in Table 2-10.

Table 2-10: C/P Learnings and Action Plans based on the 1st Japan Training Tour

Category	Learnings	Action Plans in Laos
Organizational structure and mechanisms for urban	<ul style="list-style-type: none"> In Chiba City, the urban planning department is divided into 18 specialized divisions, in contrast to Laos, which has 3 divisions, making Chiba's focus more specialized. Additionally, the urban planning and urban development 	<ul style="list-style-type: none"> In urban planning, promote public-private partnership in community development. Strictly manage, implement,

Category	Learnings	Action Plans in Laos
management	<p>divisions are both placed within the same urban bureau (while in Laos, they are placed under different ministries).</p> <ul style="list-style-type: none"> • A community development council is organized, with participation from both the public and private sectors. In Laos, such a meeting system does not currently exist. • After the implementation of development projects, follow-up surveys are conducted for urban management. While Laos does have a similar mechanism, it is not as specialized as that of Chiba City. 	<p>inspect, and follow up on urban development.</p>
Information sharing system for urban planning and local governments	<ul style="list-style-type: none"> • In Chiba City, both comprehensive plans and district-specific plans are formulated. In contrast, Laos only formulates comprehensive plans. • In Chiba City, information related to urban planning can be easily and freely obtained through municipal office counters and websites. In contrast, Laos relies solely on websites, limiting the means of access, and residents often face delays in obtaining information due to restricted access. • In Chiba City, information related to urban planning is updated approximately every six months. In contrast, in Laos, the system improvements are slow, and information is not updated regularly. 	<ul style="list-style-type: none"> • Formulate detailed urban plans tailored to each district. • Develop a GIS-PF related to urban planning and improve methods of information dissemination so that residents can easily access various information related to urban planning and community development.
Building inspections and construction permits	<ul style="list-style-type: none"> • In Japan, urban planning is strictly adhered to, and all buildings receive construction permits. In contrast, in Laos, there are cases where urban planning is not followed, and only some buildings are required to apply for construction permits. • In Japan, building inspection duties can be carried out not only by the government but also by the private sector. In Laos, these duties are only handled by the government. • Unlike Japan, Laos does not have specific rules for building inspections and development permits. 	<ul style="list-style-type: none"> • Strengthen the building inspection system and the follow-up system after obtaining permits. • Create more specific rules for building confirmation and development permits. • Enhance the review system for construction permits and strengthen the follow-up system after permits are granted. • Establish more specific regulations regarding construction and development permits.
Collaborative Urban Development	<ul style="list-style-type: none"> • In Laos, there are no examples of land readjustment projects, and there are no organizations for promoting or creating community development. • While public-private partnership initiatives have also begun in Laos, they are not yet well-established. 	<ul style="list-style-type: none"> • Consider establishing an urban planning committee and encourage the participation of various organizations, including both public and private sectors.

Source: JICA Expert Team

In the 2nd Japan Training Tour, the trainees presented their learnings and Lao side action plans, as shown in Table 2-11 and Table 2-12.

Table 2-11: C/P Learnings based on the 2nd Japan Training Tour

Category	Learnings
GIS-PF	<ul style="list-style-type: none"> • From Professor Sekimoto's lectures and those by Susono City and the Digital Susono Council, insights were gained on the use of technology for digital twins through the digitization of urban planning and development, efforts to promote sustainable urban development, and initiatives for managing urban development using digital platforms.
Collaborative	<ul style="list-style-type: none"> • In Japan, there is an active promotion of private sector participation in community development.

Category	Learnings
Urban Development	<p>Through lectures by Professor Namba and others, an understanding was gained of Japan's public-private partnership mechanisms, systems, stakeholders, and the benefits and effects of implementation.</p> <ul style="list-style-type: none"> From the lectures and site visits by the Urban Renaissance Agency, the case of the Taishido-Mishuku district in Setagaya Ward was particularly impressive. In this case, the government, an independent administrative agency, and residents collaborated to improve the urban area, with residents actually living there. This served as a valuable model for implementing public-private partnership projects in Laos in the future.
B/C, Building Permit, and Construction Permit	<ul style="list-style-type: none"> From Professor Ishiyama's lectures, the point that was particularly informative was the establishment of standards to ensure that buildings are designed to withstand earthquakes and other disasters. From the lecture by the Utsunomiya City Building Guidance Division, it was notable that, unlike in Laos, private institutions in Japan also have the authority to issue building inspections and permits. Additionally, the comprehensive and detailed collective regulations designed to consider the surrounding environment in building projects were also insightful.

Source: JICA Expert Team

Table 2-12: C/P Action Plans based on the 2nd Japan Training Tour

Organization	Action Plans
DHUP	<ul style="list-style-type: none"> Budget planning for the operation and maintenance of GIS-PF (budgeting for 2025 and continuous budgeting for the next phase) Examination of specific measures for the continued implementation of UMP with the cooperation of donor agencies and universities Approval of Laos building standards by 2024 Ongoing consideration of measures to promote the use of GIS-PF by the private sector and methods for their collaboration Evaluation of the implementation of urban planning on a national scale Support for the expansion and improvement of construction permit data, and consideration of the efficiency and improvement of the construction permit review process Creation of operational manuals for construction permits and community development guidelines Public relations activities for GIS-PF in local cities and the development of a national urban database Proposals and discussions on the organizational structure at the planning stage, the roles of related agencies, and the creation of guidelines for promoting public-private partnership community development projects Enactment of laws concerning architects and engineers
PTI	<p>[Short Term Plan]</p> <ul style="list-style-type: none"> Securing an annual budget to support GIS-PF operations Collection and input of data according to designated responsibilities Strengthening the capabilities of relevant personnel in DHUP, DPWT, and OPWT to ensure sustainable operation of GIS-PF <p>[Medium to Long Term Plan]</p> <ul style="list-style-type: none"> Applying project outcomes and activities on a wide scale through urban development and the introduction of advanced technologies utilizing GIS-PF Conducting comprehensive research and review of technical manuals and guidelines related to urban development, infrastructure planning, and structural design Continuation of promoting the use of GIS-PF in regional cities
DPWT	<ul style="list-style-type: none"> Securing an annual budget to support the O&M and updating of GIS-PF Sustaining network enhancements to promote the seamless integration of permit data between DPWT and OPWT Implementing improvements and expansions to databases across a wider range of regions Enhancing the integrated systems of MPWT, DPWT, and OPWT

Organization	Action Plans
	<ul style="list-style-type: none"> Improving the backup system to support all types of data Promoting the use of GIS-PF among the general public and ensuring accessibility to urban information Continuing capacity building for relevant staff Streamlining the inspection process by promoting understanding and cooperation between DPWT and OPWT

Source: JICA Expert Team

The feedback to project activities from the action plans based on the lesson learned in each Japan Training Tour is shown in Table 2-13.

Table 2-13: Feedback for Project Activities

Output	Action Plan	Feedback for Project Activities
Output 1 UMP, GIS-PF	<p>[UMP]</p> <ul style="list-style-type: none"> Continuation of UMP implementation <p>[GIS-PF]</p> <ul style="list-style-type: none"> Securing maintenance and management budget (2025 and beyond) Continuation of promotion for use in regional cities Ensuring accessibility for general users Expansion and nationwide deployment of GIS-PF Collection of nationwide urban data Evaluation of urban planning implementation on a national scale 	<ul style="list-style-type: none"> For the continued implementation of UMP, discussions were held on specific methods of collaboration with donor agencies and universities, and the 9th UMP was conducted under the management of the counterparts (C/P). Within DHUP, a budget for the maintenance and management of GIS-PF was secured, and adjustments were made towards signing a maintenance and management contract with an IT consultant. Regarding the promotion of GIS-PF utilization, discussions were held on methods of private sector collaboration based on the Susono City example. Although the nationwide deployment of GIS-PF is outside the scope of this project, the JICA expert team provided advice on public relations activities in local cities, and the counterparts (C/P) prepared promotional materials.
Output 2	<ul style="list-style-type: none"> Continued expansion and improvement of permit data. Expansion of permit data into the integrated system of DPWT and OPWT. Strengthening the network for integrated use. Improvement of the data backup system. Streamlining and improving the review process for construction permits. 	<ul style="list-style-type: none"> Supported DPWT in expanding and improving permit data within this project. While the system expansion to OPWT is considered a medium- to long-term response, OPWT actively participated in related seminars to promote understanding of permit data. Developed an operational manual for construction permits to streamline and improve the construction permit review process.
Output 3	<ul style="list-style-type: none"> Consider establishing an urban planning committee and encourage the participation of various organizations, including both public and private sectors. 	<ul style="list-style-type: none"> Actively conducted proposals and discussions on organizational structures and the roles of various agencies to support the examination of responsibilities of each agency in the consideration of business schemes and the formulation of guidelines, to promote public-private partnership in community development.
Output 4	<ul style="list-style-type: none"> Approval of B/C within 2024. Development of technical guidelines for B/C operations. Request donor support for local staff training for B/C operations. Establishment of a qualification system for architects and engineers. 	<ul style="list-style-type: none"> Held a public seminar on B/C at the end of April 2024 and responded to comments, finalizing approval by the C/P. Although the operation and technical guidelines for B/C are outside the scope of this project, the JICA expert team provided advice and materials upon the C/P's request. Regarding the qualification system, provided the relevant Japanese laws to the C/P and offered advice and other

Output	Action Plan	Feedback for Project Activities
		support as requested by the C/P.
Common	<ul style="list-style-type: none"> Coordination and strengthening of response among central and local related agencies. Comprehensive review of technical manuals and guidelines in various fields. 	<ul style="list-style-type: none"> Collaborated with the C/P to hold a B/C public seminar and strengthened coordination and response among central and local related agencies. Developed a construction permit operational manual and community development guidelines as one of the review targets for the C/P.

Source: JICA Expert Team

(4) Challenges, Innovations, and Lessons from Japan Training Tours

The challenges, innovations and lessons learned from each Japan Training Tour are shown in Table 2-14.

Table 2-14: Challenges, Innovations, and Lessons from Japan Training Tours

Item	Contents
Challenges	<p>[Pre-Session Coordination with Lecturers]</p> <ul style="list-style-type: none"> In the 1st Japan Training Tour, inadequate pre-session coordination with the lecturers led to insufficient lecture materials and explanations, resulting in some instances where trainees did not fully understand the content. Due to time constraints for translating lecture materials from Japanese to Lao, it was not possible for the JICA expert team to request corrections or additions to the materials prepared by the lecturers. <p>[Translation]</p> <ul style="list-style-type: none"> Lao is a rare language, and translators from Japanese to Lao are limited. As a result, the translation accuracy of the lecture materials in the 1st Japan Training Tour was low due to insufficient translation time, making it difficult for both trainees and interpreters to understand the content.
Innovations	<p>[Pre-Session Coordination with Lecturers]</p> <ul style="list-style-type: none"> For the 2nd Japan Training Tour, pre-session meetings with the lecturers were conducted more than two months in advance, with detailed outlines provided by the JICA expert team. This ensured adequate preparation time for materials and effective communication of intentions. As a result, despite the lecturers being in a busy period at the end of the fiscal year, the sessions were well-conducted, and the feedback from trainees was positive. <p>[Translation]</p> <ul style="list-style-type: none"> For the 2nd Japan Training Tour, the number of translators was increased from one (as in the first session) to two, and local experts were engaged for proofreading technical terms, which improved the accuracy of the lecture material translations. Additionally, the translation period was set to begin one month before the training started, ensuring sufficient time for translation.
Lessons	<ul style="list-style-type: none"> During the lectures, there were instances where questions were raised about Japan's administrative structure (e.g., ministry system, local government structure), urban planning system, and land system. Although the lecture content was specialized, a lack of understanding of these basic topics sometimes hindered the effectiveness of the lectures. As a lesson learned, it is necessary to prepare materials that outline basic information about Japan's urban planning, land system, and administrative structure in advance, and provide explanations during the pre-training briefing. As previously mentioned, during the translation process from Japanese to Lao, there were situations where specialized terms lacked appropriate equivalents in Lao, making them difficult to understand. Trainees even requested lecture materials in English. As a lesson learned, it is effective to prepare English materials as supplementary aids for understanding, especially for documents with many specialized terms.

Source: JICA Expert Team

Chapter 3. Achievement of Output 1

3.1 Summary

(1) Objective of Output 1

There are several issues on information sharing for urban management in Vientiane Capital. For government agencies, there are mainly three issues: i) the need to promote paperless work, ii) the time taken to collect data and information from other agencies, and iii) the need for integrated information for policy-making and urban planning.

For business operators, the issues are the time taken to collect necessary information for construction, the need to request information from multiple agencies, and the need for digital data for design and planning. For citizens, the issues include difficulty accessing government plans and documents, a lack of understanding of rules and regulations, and limited awareness of government activities.

The objectives of Output 1 are to establish a mechanism for the discussion and sharing of views on the policies and issues of urban development.

(2) Activity and Achievement of Output 1

The activity of Output 1 aims that the mechanism for the discussion and sharing of views on the policy and issues of urban development is established. The summary of progress of the Output 1 activities is shown in Table 3-1.

Table 3-1: Summary of Output 1

Activities and Work Items	Achievements
1.1 To establish a stakeholders' meeting for urban development	<ul style="list-style-type: none"> UMP was established in February 2022.
1-2. To hold stakeholders' meetings	<ul style="list-style-type: none"> Totally nine UMP meetings were held during CDUDCP, and C/P took over the UMP after CDUDCP.
1-3. To visualize Vientiane's urban status using GIS data	<ul style="list-style-type: none"> Theme for visualizing urban status were discussed and developed in WGs. Integrated map on urban information in Vientiane Capital was published in VirGo.
1-4. To introduce GIS platform in Vientiane	<ul style="list-style-type: none"> The GIS platform named VirGo was launched to the public at 4th UMP in September 2023. Dissemination activities of VirGo were conducted through UMP meetings, media, and introduction video.
1-5. To conduct training for GIS platform	<ul style="list-style-type: none"> Operational trainings of VirGo, ToT (training of trainers) sessions for operation and maintenance of VirGo were conducted in December 2023. Capability of C/Ps were monitored through WGs and improved by follow-up activities.
1-6. To organize a series of seminars on urban issues	<ul style="list-style-type: none"> Three large-scale seminars and nine small-scale seminars were conducted.
1-7. To analyze and discuss the improvement of urban development control and promotion systems	<ul style="list-style-type: none"> Cross-sectoral discussions on urban development issues and information sharing were conducted in UMP meetings.

Source: JICA Expert Team

3.2 Urban Management Platform (UMP)

In Output 1, the Urban Management Platform (UMP) was established with the aim of promoting the sharing of information and recognition of issues among stakeholders involved in urban development. UMP also facilitated the discussions of activity policies and the reporting of results for the "Urban" and "Building" Working Group (WG). Both UMP and Urban WG were established and supported by the JICA Long-term Experts even before the commencement of this project. The JICA Expert Team participated in and jointly operated these platforms after the beginning of the project. Additionally, the main activities related to Outputs 2 to 4 were reported to UMP, promoting information sharing, dissemination, and discussion among stakeholders.

The UMP meetings were held as shown in Table 3-2.

Table 3-2: UMP and Topics

No.	Date	Agenda	Points and Result of Discussion
#1	February 2, 2022	<ul style="list-style-type: none"> Objectives and TOR of Urban Management Platform Introduction of current activities Publication of Newsletters and dissemination 	<ul style="list-style-type: none"> Established and discussed the ways forward of UMP Shared respective current situation and activities Exchanged of view for Urban Development
#2	July 27	<ul style="list-style-type: none"> National level Digital Government Policy, Plan, Guideline, Capacity Development and related activities Data and System integration challenges Current situation and activities utilizing digital technology 	<ul style="list-style-type: none"> Shared current situation and activities on Urban Management utilizing ICT and Digital technology Networked related organizations as stakeholders for Urban Development
#3	December 3	<ul style="list-style-type: none"> Introduction of basic idea and objective of M/P for GUP, Transport and Land management Keynote speech: Urban Collaborative Development and Best Practice Panel discussion: Urban Collaborative Development and key phrase for Vientiane in the future 	<ul style="list-style-type: none"> Shared M/P Exchanged of view for Urban Collaborative Development in Vientiane Capital Networked the related organizations as stakeholders for urban development
#4	September 26, 2023	<ul style="list-style-type: none"> Held as 1st large-scale open seminar Introduction of GIS-PF GIS-PF exercise session Panel discussion for understanding and sharing ideas for GIS-PF 	<ul style="list-style-type: none"> The GIS-PF was officially launched and Introduced for the public and private sector Understood GIS-PF's usability and effectiveness for public and private sectors Discussed the upgrading of data and information in GIS-PF
#5	September 28	<ul style="list-style-type: none"> What is Urban Planning? Give it a go, VirGo (Exercises) Think about the future city, Vientiane 	<ul style="list-style-type: none"> Learnt Basic idea of Urban Planning Provided opportunities to think about the Urban Planning Showed students how enjoy Urban planning and initiative
#6	January 23-25, February 6, 2024	<ul style="list-style-type: none"> Held as the 2nd large-scale open seminar Vision for urban development Construction permit for our city 'Ban Hao' Building Code for our city 'Ban Hao' Building permit process and VirGo 	<ul style="list-style-type: none"> Held at 6 districts: Xaythany, Xaysettha, Chanthabouly, Naxaiythong, Sisattanak, and Sikhottabong chaired by the head and deputy of each district. Video on construction permit and Building

No.	Date	Agenda	Points and Result of Discussion
			Code were screened to explain relevant provisions in an easy-to-understand manner for the participants.
#7	March 27	<ul style="list-style-type: none"> • Held as the 2nd Seminar on Collaborative Urban Development • Summary of 1st seminar and result of questionnaire survey • Area concept plan of pilot area and project list • Draft of project scheme of collaborative urban development 	<ul style="list-style-type: none"> • Understood the importance of collaborative urban development. • Shared issues and actions with each other.
#8	May 23	<ul style="list-style-type: none"> • Held as the 3rd large-scale open seminar • Guidelines of Collaborative Urban Development project in Vientiane • Sustainable Operation and Utilization of GIS-PF • Way forward for Operation of UMP 	<ul style="list-style-type: none"> • Introduced the guideline of collaborative urban development for private business operator • Introduced the VirGo and the dissemination activity for the sustainability • Confirmed revised TOR of UMP for C/P's sustainable operation
#9	May 28-30	<ul style="list-style-type: none"> • Introduction of VirGo in National University of Laos • Introducing how to use the VirGo • VirGo workshop for university students 	<ul style="list-style-type: none"> • Introduced the VirGo for university students • Educated utilization method of the VirGo

Source: JICA Expert Team

(1) 1st UMP

The 1st UMP was held on February 2, 2022. The objective of establishment and future directions of UMP were discussed, and the current status of each output in the project was shared. Table 3-3 shows TOR of UMP.

Table 3-3: TOR of UMP

Article	Title	Contents
Article 1	Purpose	<ul style="list-style-type: none"> • These Terms of Reference (TOR) define the necessary provisions for the Urban Management Platform (UMP), established to address urban development issues in a cross-sectoral initiative, for promotion sustainable urban development that is open and transparent to citizens.
Article 2	Definition	<ul style="list-style-type: none"> • UMP is the mechanism for discussion and sharing the views on the policy and issues of urban development not only with the public sector but also with other stakeholders such as citizens, private companies, and institutions. This includes holding meetings and seminars as well as developing ICT-based information sharing system. • UMP is established by MPWT and administrated by Urban and Building Working Groups on CDUDCP, by the decree of the minister of MPWT No. 13043/PWT on July 3, 2021.
Article 3	Policy toward Urban Development	<ul style="list-style-type: none"> • The government promotes urban development by supporting the necessary budget, facilities, capacity building to the staff of urban planning. • The government promotes the internal and external economic sectors in the investing urban development to realize urban planning and detailed planning as well as technical and social infrastructures in order to implement the general and detailed urban plan. • The government promotes the public economy sectors for accessing to budgets in order to develop the urban planning, capacity building, ensure that the urban development contributing to the graduated, stable and greened socio-economic development.

Article	Title	Contents
Article 4	External and International Cooperation	<ul style="list-style-type: none"> The government promotes open external, regional, and international cooperation concerning urban planning by sharing experiences, information and scientific, technologies, technical capacity building, investment and implementation of agreement and international convention that Lao PDF ratified.
Article 5	Organization	<p>Under the direction of MPWT, the organization of UMP consists of:</p> <ul style="list-style-type: none"> Chairperson: Deputy Director, PTI Vice Chairperson: Deputy Director, DHUP Member: Deputy Director of Vientiane Cabinet, Representative of Ministry of Finance, Representative of Ministry of Planning and Investment, Representative of Department of Natural Resources and Environment of Vientiane Capital, Representative of DPWT, and Secretary of JCC of CDUDCP
Article 6	Rights and Duties of Urban Management Platform	<p>The UMP is subjected to the following rights and duties:</p> <ul style="list-style-type: none"> To lead and report on the outcomes of duties and authorities implementation of UMP to the superior for consideration and approval To propose to the superior for appointing additional/temporary members of UMP upon agreement of the UMP members To share information and discuss of urban development issues beyond sectors, fields, local authorities and other organization concerned To research and study on issues on urban development and urban management To propose the information sharing mechanism for urban development To hold seminars for urban development To publicize Newsletters of UMP and disseminate urban development <p>The execution of the right and duties in the above activities shall be conducted by cooperation with both members of central and local levels.</p>
Article 7	Meeting of Urban Management Platform	<ul style="list-style-type: none"> The meeting of UMP shall be held 8 times including open seminars during the period. Notwithstanding the foregoing, a special meeting may be held as needed. The Chairperson shall call meetings and become a chair of the meetings of the UMP. The Secretariat shall take minutes of the meetings of UMP. If the Chairperson and/or the Secretariat are/is not available to attend a meeting or meetings for any reason whatsoever, a Member or Members, who has/have been appointed by the Chairperson, shall take over the duties of the unavailable officer(s). The member who shall not perform his/her duties could be dismissed by unanimously. A quorum shall consist of the Chairperson, the Secretariat, total 10 of Member(s). The decisions of matters presented/discussed at a meeting shall be carried by a majority.
Article 8	Minutes and Newsletters	<ul style="list-style-type: none"> Minutes of a meeting shall be prepared by the Secretariat, and shall be circulated and approved by unanimously in the sequential meeting. The approved minutes shall be posted in the internal webpage etc. Minutes shall be kept for the period of 3 years. The summary of meeting shall be reported in the newsletters, which shall be published after reviewing its contents.
Article 9	Amendments or Cancellation	<p>Any amendment, revision, or cancellation of the Terms of Reference shall be approved by Ministry of Public Work and Transport for the Terms of Reference upon agreement of the core members of UMP.</p>

Source: TOR of UMP (approved on January 31, 2022)

(2) 2nd UMP

On July 27, 2022, the 2nd UMP was held by C/P. The current situation and activities on urban management utilizing ICT and digital technology and network of related organizations for urban development were strengthened through presentations and discussions. Also, it was informed that

newsletter ‘Ban Hao’ will be published by the UMP Secretariat.

(3) 3rd UMP

On December 23, 2022, the 3rd UMP was held by C/P with the main theme of urban collaborative development. The session introduced the basic idea, objectives, and best practices of urban collaborative development. In the panel discussion session, current challenges, the way forward for urban collaborative development in Vientiane Capital, and future vision of the pilot area were discussed.

(4) 4th UMP (as 1st Large-scale Open Seminar)

The 4th UMP was held on September 26, 2023, as the first large-scale open seminar. It focused on promoting the GIS-PF for both public and private sectors with the subject “Open! Urban Development – GIVE IT A GO, GIS-PLATFORM, VirGo”. The objectives of the 4th UMP are as follows:

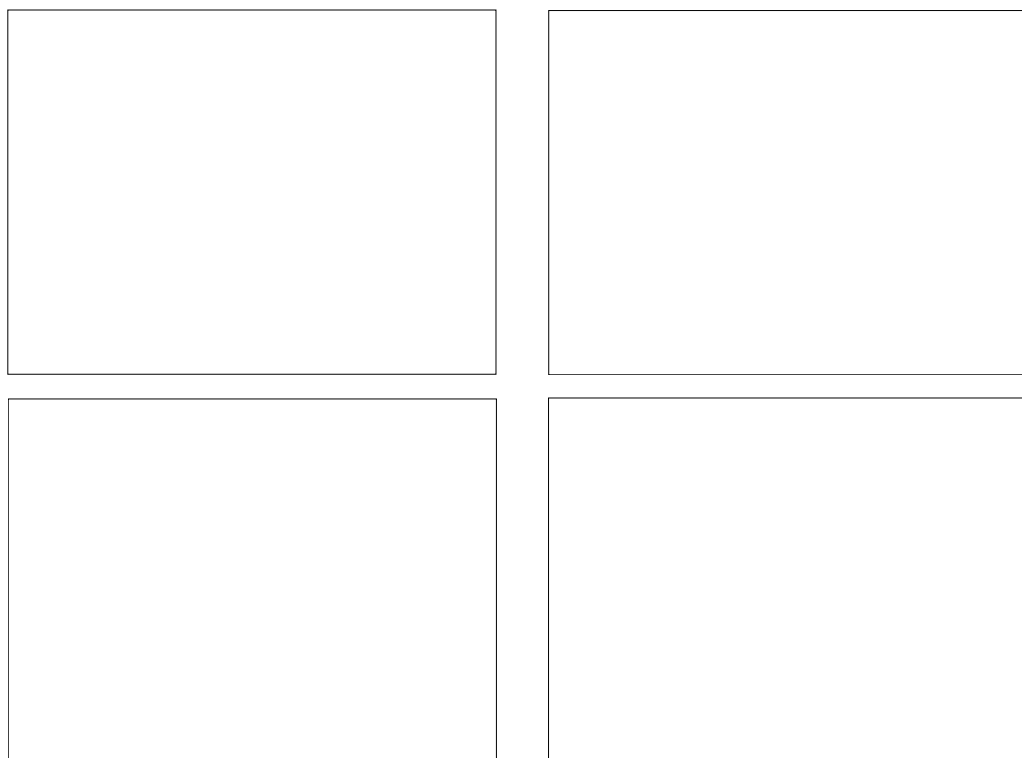
- To introduce GIS-PF for public and private sectors;
- To understand GIS-PF’s usability and effectiveness for public and private sectors; and
- To discuss the upgrading of data and information in GIS-PF.

The agenda is shown in Table 3-4. In the beginning, the official name of the GIS-PF was introduced as “VirGo”, which is the abbreviation of Vientiane Integrated Urban Information GIS-based Opendata Platform. In the exercise session, the instruction on how to use the GIS-PF was lectured to the participants by Mr. Vasaly from the Department of Housing and Urban Planning (DHUP). In the panel discussion session, four panelists from the design consultant company, Xaysettha, the Office of Public Works and Transport (OPWT), DHUP, and the JICA Expert Team expressed their experiences using the VirGo. Based on their presentations, opinions on the utilization, operation and maintenance (O&M), and future extension of the VirGo were exchanged among the participants.

Table 3-4: Agenda of the 4th UMP

Time	Topics	Presenter
9:00 – 9:10	Welcome Remarks	Mr. Chanthavangso OUDOMDETH, Deputy Director General, PTI
9:10 – 9:35	Introduction of GIS-PF	Mr. Minoru MATSUI, JICA Expert
9:35 – 9:55	GIS-PF Exercise Session	Mr. Vasaly SISAVATH, Technical staff, Division of Urban Planning
9:55 – 10:00	Photo Session	All participants
10:00– 10:15	Coffee Break	All participants
10:15 - 11:40	Pannel Discussion Session Objective: · To understand GIS-PF’s usability and effectiveness · To sharer idea of new data and information to be added in GIS-PF	Facilitator: - Mr. Nalongxay MIVAPADITH, Deputy Director General, DHUP Panelists: - Mr. Athitphathay CHANTHABOUALA, Project Manager, PiSECCON (Lao) Co., Ltd. - Mr. Aloundeth PHANTHAMALY, Head of Housing Unit, OPWT Xaysettha - Mr. Dao KEOSOUKAN, Director, Division of DHUP as administrator of GIS-PF - Mr. Minoru MATSUI, JICA Expert
11:40 –11:45	Remark on the 4th UMP	Prof. Bounliem SISOULATH, President, Council of Lao Architect and Civil Engineer
11:45 –11:50	Conclusion	Mr. Nalongxay MIVAPADITH, Deputy Director General, DHUP
11:50 - 12:00	Closing Remarks	Mr. Nalongxay MIVAPADITH, Deputy Director General, DHUP

Source: JICA Expert Team



Source: JICA Expert Team

Figure 3-1: Photos of the 4th UMP

(5) 5th UMP

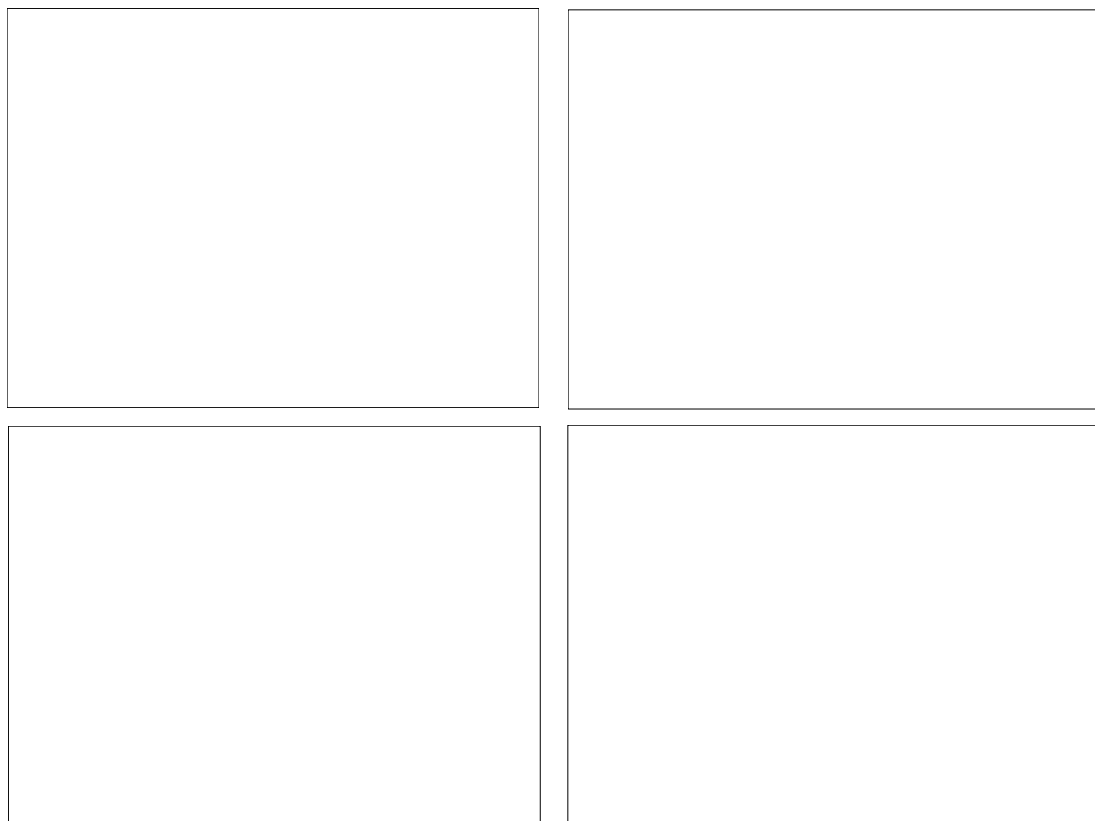
The 5th UMP was held on September 28, 2023, at Vientiane High School. The objectives of the meeting were to educate on urban planning and urban development utilizing the VirGo for high school students and to discuss future urbanization of Vientiane. The meeting comprised two sessions, one in the morning and another in the afternoon. The agenda is shown in Table 3-5.

Table 3-5: Agenda of the 5th UMP

Time (Morning and Afternoon Sessions)	Topics	Presenter
9:15 – 9:20 (13:00 – 13:05)	Opening Remarks	Representative of Vientiane High School
9:20 – 9:30 (13:05 – 13:15)	Introduction	Ms. Larphet DOUANGKHEMTHORNG, Deputy Director, Division of Urban Planning
9:30 – 9:50 (13:15 – 13:35)	What is Urban Planning?	Mr. Somchit CHERSOUATHOR, Acting Deputy Director, Division of Technical Research for Housing and Urban Planning, PTI
9:50 – 10:10 (13:35 – 13:55)	Give it a go, VirGo (Exercises) Access to VirGo by their Smartphone or Prepared PC and Operate under the Instruction	Mr. Vasaly SISAVATH, Technical Staff, Division of Urban Planning, DHUP Mr. Sonpaseuth PHOTHISAN, Technical Staff, Division of Housing-Urban Planning and Environment, DPWT Assistants (Support participants)
10:10– 10:15 (13:55 – 14:00)	Wrap-up and Orientation of the Next Work	Ms. Larphet DOUANGKHEMTHORNG, Deputy Director, Division of Urban Planning

10:30 - 11:00 (14:15 – 14:45)	(work) Think about the Future City, Vientiane	Facilitator: - Ms. Larphet DOUANGKHEMTHORNG, Deputy Director, Division of Urban Planning - Mr. Seepiest PHOTHISAN, Technical Staff, Division of Housing- Urban Planning and Environment - Assistants (Support participants)
11:00 –11:25 (14:45 – 15:10)	Presentation (three representatives)	Mr. Somchit CHERSOUATHOR, Acting Deputy Director, Division of Technical Research for Housing and Urban Planning, PTI
11:25 –11:30 (15:10 – 15:15)	Wrap-up	Mr. Vasaly SISAVATH, Technical Staff, Division of Urban Planning
11:30 – 11:35 (15:15 – 15:20)	Closing Remarks	Representative of Vientiane High School

Source: JICA Expert Team



Source: JICA Expert Team

Figure 3-2: Photos of the 5th UMP

(6) 6th UMP (as 2nd Large-scale Open Seminar)

The 6th UMP was held across six districts in Vientiane Capital over four days: from January 22 to 25 and February 6, 2024, organized by the C/Ps with support of the JICA Long-term Experts. This UMP served as the 2nd large-scale open seminar for dissemination of construction permits. The objectives of the 6th UMP were as follows:

- To introduce the General Urban Plan (GUP) and construction permit system for urban safety;
- To introduce the Building Code for building safety; and
- To deepen understanding of comfortable and safe urban development in Vientiane Capital by

knowing of the rules of construction.

For more details, see Chapter 4, Section 4.8 Dissemination of Construction Permit.

(7) 7th UMP (as 2nd Seminar on Collaborative Urban Development))

The 7th UMP meeting was held in Vientiane Capital on March 27, 2024, by C/P with support from JICA Long-term Experts. It was held as the 2nd seminar on collaborative urban development. The objectives of the 7th UMP were as follows:

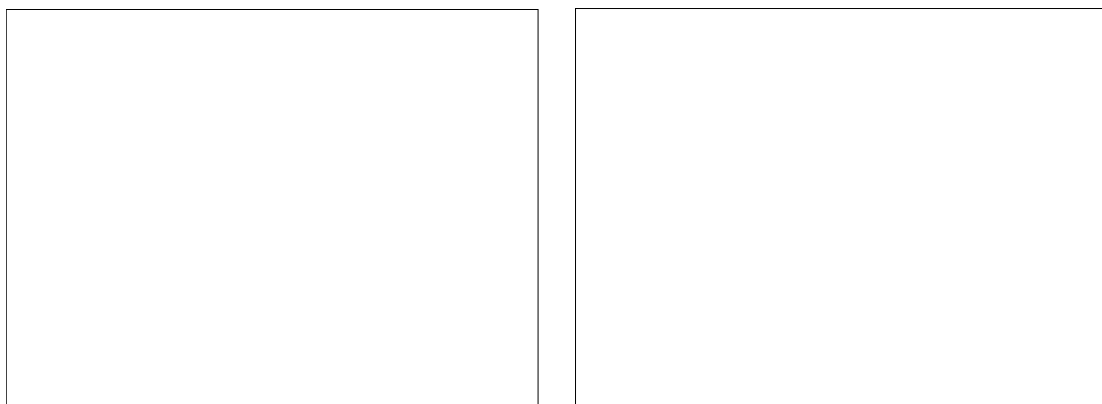
- To share the results of the 1st seminar and questionnaire survey; and
- To discuss on business scheme of collaborative urban development to realize Area Concept Plan in pilot area in Vientiane.

The agenda of the 7th UMP is shown in Table 3-6.

Table 3-6: Agenda of the 7th UMP

#	Time	Agenda	Organization
1	09:00 – 09:10	Opening Remarks	Mr. Nalongxay MYVAPADITH, Deputy Director General, DHUP
2	09:10-09:30	Summary of 1st Seminar and Result of Questionnaire Survey	Mr. Akihito Muto, JICA Expert Team
3	09:30-10:10	Area Concept Plan of Pilot Area and Project List	Mr. Desa PHOMMASAK, Deputy Director, OPWT, Mr. Minoru MATSUI, JICA Expert Team
	10:10-10:25	Coffee Break	
4	10:25-11:00	Draft of Project Scheme of Collaborative Urban Development	Mr. Akihito Muto, JICA Expert Team
5	11:00-11:40	Discussion	All participants Facilitator: Mr. Nalongxay MYVAPADITH, Deputy Director General, DHUP
6	11:40-11:55	Wrap-up	Mr. Minoru MATSUI, JICA Expert Team
7	11:55 - 12:00	Closing Remarks	Mr. Nalongxay MYVAPADITH, Deputy Director General, DHUP

Source: JICA Expert Team



Source: JICA Expert Team

Figure 3-3: Photos of the 7th UMP

(8) 8th UMP (as 3rd Large-scale Open Seminar)

The 8th UMP meeting was held on May 23, 2024. It served as the 3rd large-scale open seminar on collaborative urban development to share the guidelines for promotion of collaborative urban development and make a consensus on the sustainable operation of UMP and GIS-PF. The objectives of the 8th UMP were as follows:

- To share the guidelines for the promotion of collaborative urban development; and
- To make a consensus on sustainable operation of UMP and GIS-PF.

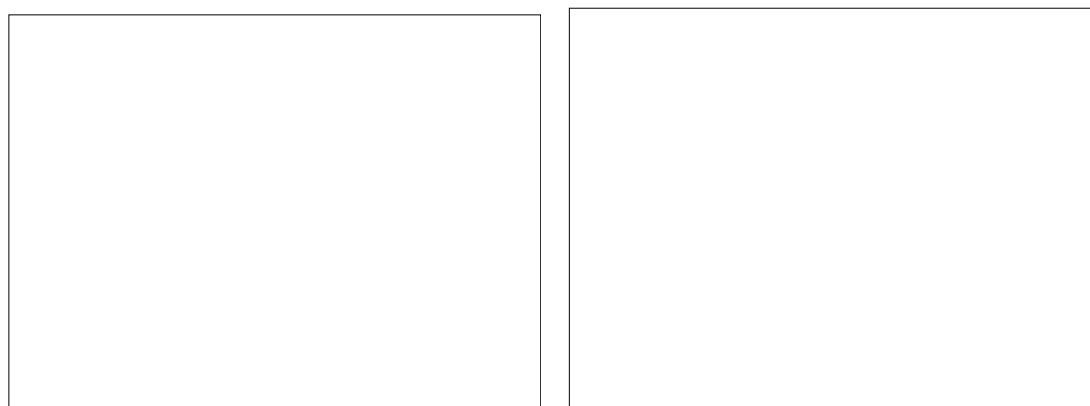
The agenda of the 8th UMP is shown in Table 3-7.

For the sustainable operation of the UMP, the revised TOR for C/Ps was confirmed.

Table 3-7: Agenda of the 8th UMP

#	Time	Agenda	Organization
	8:00 - 8:30	Registration	
1	8:30 - 8:40	Opening Remarks	Mr. Chanthavangso OUDOMDETH, Deputy Director General, PTI
2	8:40 - 9:10	Guidelines of Collaborative Urban Development	Mr. Somchit CHERSUANTHOR, Deputy Director, Secretariat of CLACE
3	9:10 - 9:40	Next Actions for Collaborative Urban Development project in Vientiane	Mr. Sonepaseuth PHOTHISA, Technical staff, Division of Housing-Urban Planning and Environment
4	9:40 - 10:00	Sustainable Operation and Utilization of GIS-PF	Mr. Vasaly SISAVATH, Deputy Director, Division of Urban Planning
5	10:00 - 10:10	Photo session	All participants
6	10:10 - 10:30	Coffee break	
7	10:30 - 11:15	Discussion	All participants
8	11:15 - 11:45	Way forward for Operation of UMP	Mr. Dao KEOSUKAN, Director, Division of Urban Planning
9	11:45 - 11:55	Closing Remarks	Mr. Chanthavangso OUDOMDETH, Deputy Director General, PTI

Source: JICA Expert Team



Source: JICA Expert Team

Figure 3-4: Photos of the 8th UMP

(9) 9th UMP

The 9th UMP meeting was held from May 27 to 29, 2024, at the National University of Laos. The objectives of the 9th UMP were as follows:

- To introduce the VirGo to university students; and
- To educate how to use the VirGo through the workshop.

The 9th UMP was prepared and organized by C/P themselves as a trial based on the capacity development through the past UMPs. The meeting invited approximately 150 students from three faculties: Architecture, Social Science, and Engineering. The agenda of the 9th UMP is shown in Table 3-8.

Table 3-8: Agenda of the 9th UMP

#	Time	Agenda	Organization
1	09:00 – 09:10	Opening remark	Professors of each faculty of NUOL
2	09:10 – 09:30	Introduction of VIRGO	Mr. Vasaly SISAVATH, Mr. Somchit CHERSUATHOR, Mr. Sonepaseuth PHOTHISAN
3	09:30 – 09:50	Introducing the overall use of the VIRGO system	Mr.Thavisack PHENGMALA Ms. Phattharavady OUDOMDETH
	09:50 – 10:00	Coffee break	
4	10:00 – 11:30	VIRGO WORKSHOP	Mr.Thavisack PHENGMALA Ms. Phattharavady OUDOMDETH
5	11:30 – 11:45	Discussion	All participants
6	11:45 – 12:00	Wrap-up and Closing Remark	Mr. Vasaly SISAVATH, Mr. Somchit CHERSUATHOR, Mr. Sonepaseuth PHOTHISAN

Source: DHUP



Source: DHUP

Figure 3-5: Photos of the 9th UMP

(10) Achievement and Issues on Implementation of UMP

The achievement of each UMP, as well as challenges and lessons learned through preparation and implementation, are summarized below.

a) Achievement of UMP

The UMP was implemented to be held sustainably by C/P as a forum for discussion and exchange of opinions to share information and issues related to urban development with various stakeholders such as government agencies, citizens and private companies. The achievements through nine UMP meetings are summarized below.

In terms of sharing information and issues with stakeholders, UMP invited participants from various stakeholders involved in (or potential in the future) urban development depending on theme, such as relevant ministries and agencies, private companies, representatives of residents, and university and high school students, and was able to share information and issues among wide range of institutions and generations.

Regarding theme of UMP, overall pictures of urban development management, current status and issues and action plan of urban development management in Vientiane Capital were discussed and shared from the 1st to the 3rd UMP. After the 4th UMP, themes of UMP were more closely related to each output of the project. Through sharing current issues as premise of each output, introducing activities and intermediate results of each output, exchanging opinions on these topics, and promoting and disseminating activities, UMP was able to share detail information and issues on C/P's current efforts.

As for perspective of improvement of C/P's capabilities for sustainable UMP management, most of the presentations and facilitations were conducted by C/Ps as possible throughout overall UMP, and their capabilities were gradually improved. Although C/Ps were in charge of presentations in the first three UMPs, it seemed that C/P's awareness were that the management of UMP would be led by Japanese side. The opportunity for C/P's independent was the 4th UMP which was themed on the GIS-PF, and the 5th UMP held two days after by the 4th UMP. Though the GIS-PF had just completed in that time, C/Ps proactively prepared and managed the 4th and the 5th UMPs for the first opportunity to introduce a 'visible tool' that C/P had been involved in development to the public. This successful experience of C/P was also utilized in the 6th UMP which was held as a large-scale seminar on theme of construction permit. In the 6th UMP, video contents with C/P's proposal were screened and disseminating poster on construction permit was developed by C/P's initiative as well. As an integration of C/P's experience of UMP management, the 9th UMP was entirely planned and managed by C/P themselves, and it was confirmed that C/P's capabilities of UMP management were improved.

In addition, in order to transfer the lead of UMP management to C/P, the 8th UMP was held on May 23, 2024, and amendment of the TOR of UMP was approved on the same day.

b) Issues on Implementation of UMP

The issues in planning, preparing and hosting UMP in the project are summarized below.

The coordination of schedule and participants was especially hard for the 6th UMP which was held in six districts in Vientiane Capital. It took much time to confirm the schedule of village leader or deputy leader who owned chair of each meeting and to coordinate within each district. As a result, five of six districts were held in schedule, while Sikottabong district was held a few days late, if consecutive meetings are to be held in wide area, it is necessary to prepare enough leading time for preparation.

In addition, regarding theme setting, though all outputs of the project were covered through nine UMPs, it is an issue that inclusion of other fields related to urban development management and promotion was lacked. Specifically, these included collaboration with public transportation, environmental conservation, infrastructure development and management, and smart city. It would have been possible to hold UMP in combined theme with these topics in collaboration with other projects or donors.

Furthermore, securing budget for holding UMP and theme setting were considered as expected issues for C/P to continue UMP after completion of the project. Regarding expenses of UMP, it is possible to consider hosting UMP with not only MPWT's budget but also joint hosting UMP in collaboration with other donors. As for theme setting, it is desirable to share information and issues in wide range of fields, including other fields related to urban development management, for example.

3.3 Development of the GIS Platform (GIS-PF)

(1) Objective of the GIS-PF

According to the SWG members, C/Ps are struggling in the digital innovation for administrative work. The main issue identified is the lack of digitization, which aims to convert from analog data to digital data. For example, procedures of construction permit application still rely on paper-based documents. In response, the JICA Expert Team proposed to focus on digitalization (utilization of digitized data to simplify work process) as the main target of the GIS-PF, which represents advanced stage from digitization. They explained a policy where development of the GIS-PF would accelerate digitization to be the digital data source sharing in the GIS-PF (see Figure 3-6).

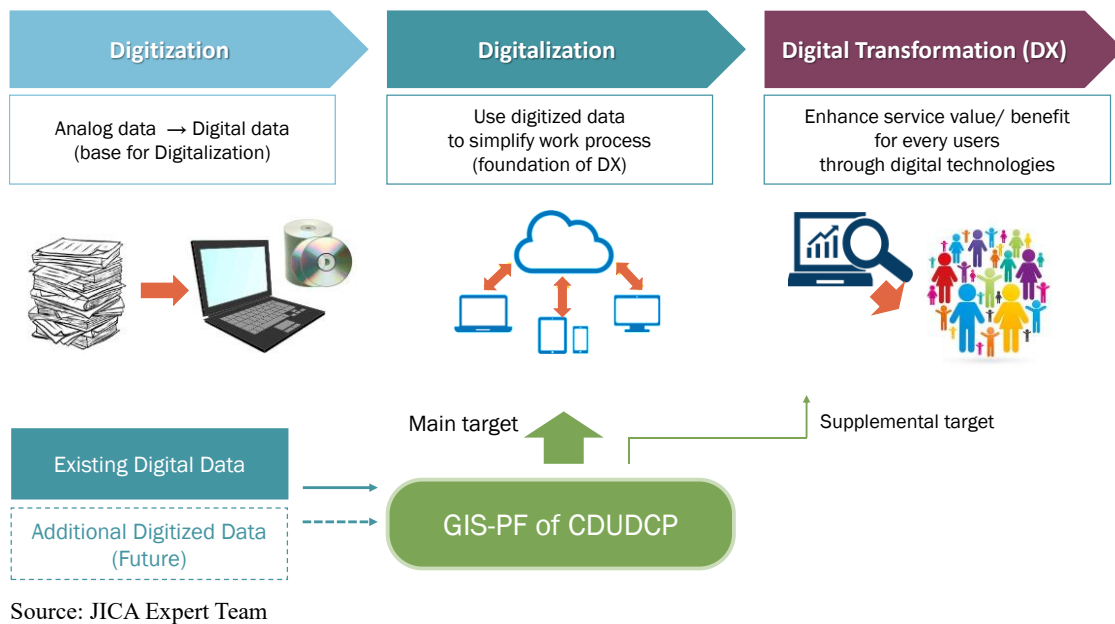
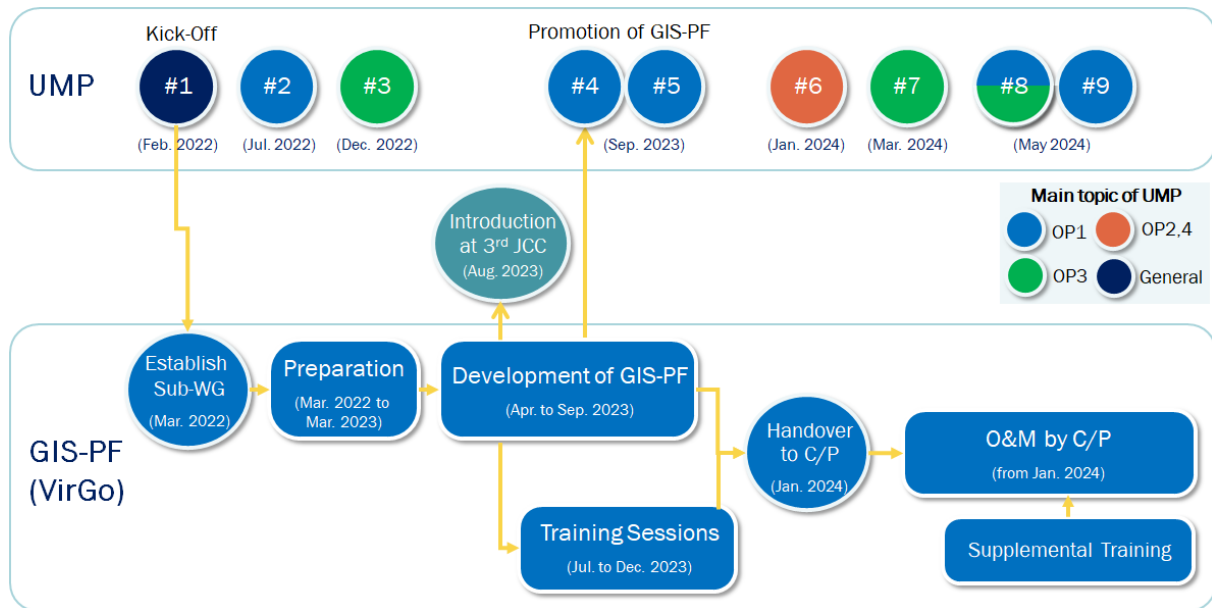


Figure 3-6: Target of GIS-PF for Digital Innovation

(2) Overview of Activity of the GIS-PF Development

Figure 3-7 shows the overall activity of development of the GIS-PF. The subcontract work on the development of the GIS-PF was carried out from April 20 to December 15, 2023. A demo version of the GIS-PF was introduced at the 3rd JCC in August 2023, and the full version of the GIS-PF named VirGo (<https://virgo.mpwt.gov.la>) was launched to the public at the 4th UMP in September 2023.



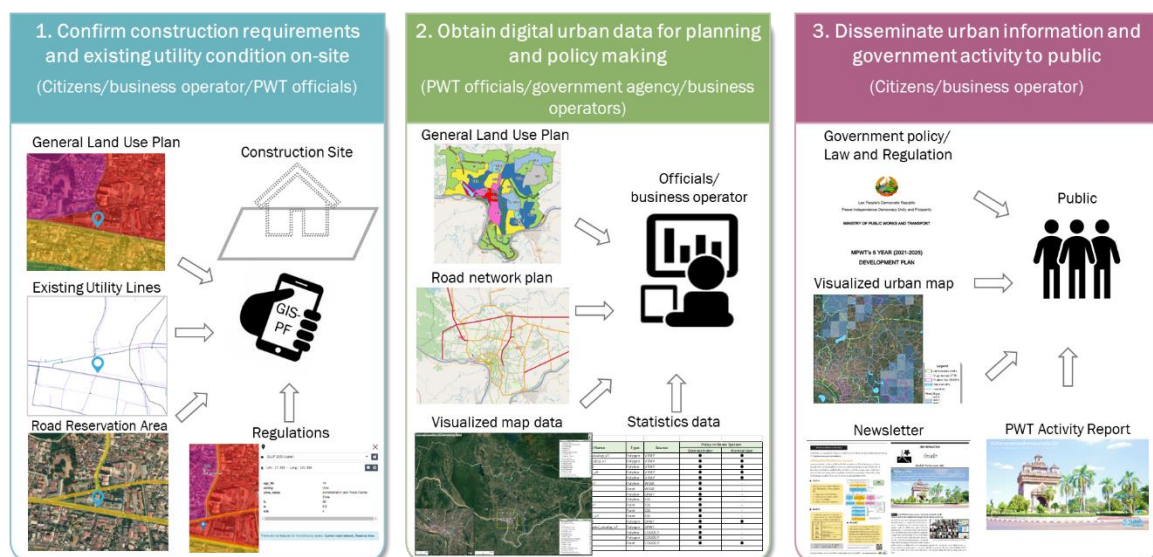
Source: JICA Expert Team

Figure 3-7: Overview of Activity of GIS-PF Development

(3) Use Cases of the GIS-PF

Assumed main target users of the GIS-PF include OPWT officials, other agencies, and ordinary users such as citizen and private companies. Figure 3-8 shows illustrations of typical use cases of the GIS-PF, confirming construction requirements and existing utility condition on-site, obtaining digital urban data for planning and policy making, and disseminating urban information and government activity to the public. Through GIS-PF, each user enables to easily access necessary urban information and data and use it for their own purposes.

- Use case 1: Conforming necessary data and information for construction design such as land use zoning and technical infrastructure network by the mobile phone devices in construction site
- Use case 2: Utilizing raw digital data of existing land use, land use plan, analyzed maps and statistic data for analysis for urban planning and policy making
- Use case 3: Publishing government information such as law and regulation, newsletter and activity report for citizen and private business operators



Source: JICA Expert Team

Figure 3-8: Typical Use Cases of the GIS-PF

(4) GIS Sub-WG

In March 2022, the GIS Sub-WG (GIS-SWG) was established to discuss about the theme of the GIS platform (GIS-PF). Table 3-9 shows the members list of the GIS-SWG, and Table 3-10 shows the summary of the agenda and result of discussion of the GIS-SWG. Through the GIS-SWG activities, the C/P acquired basic knowledge and procedure for the development of web-based GIS system including data collection, budgeting, and procurement of subcontractor. Following the development of the GIS-PF, the C/P's capabilities for operation and maintenance of the GIS-PF were enhanced with training sessions.

Table 3-9: Members List of the GIS Sub-WG

Organization	Full Name
DHUP	<ul style="list-style-type: none"> - Mr. Vasaly SISAVATH, Technical staff, Division of Urban Planning (Leader) - Mr. Thavisak PHENGMALA, Technical staff, Division of Urban Planning - Mr. Souksavanh HANEPHOM, Technical Staff, DHUP
PTI	<ul style="list-style-type: none"> - Mr. Somchit CHERSUANTHOR, Deputy Head of the Secretariat of the Lao Council of Architects and Civil Engineers - Mr. Bounpon SHISAWAT, Technical staff, Division of Technical Research on Civil Engineering and Transportation - Ms. Phattharavady OUDOMDETH, Technical staff, Division of Technical Research on Civil Engineering and Transportation
DPWT	<ul style="list-style-type: none"> - Mr. Sonepaseuth PHOTHISA, Technical staff, Division of Housing-Urban Planning and Environment - Mr. Vientihane BANTHONGXAY, Technical staff, Division of Housing-Urban Planning and Environment - Mr. Sinthanou PHANTHAVONG, Technical staff, Division of Housing-Urban Planning and Environment

Source: JICA Expert Team

Table 3-10: GIS Sub-WG and Topics

No.	Date	Agenda	Points and Result of Discussion
#1	March 11, 2022	<ul style="list-style-type: none"> • Kick-off of GIS Sub-WG • Discussion on the concept of Sub-WG 	<ul style="list-style-type: none"> • Introduction of GIS-SWG members • Goal of SWG activity was indicated.
#2	March 18	<ul style="list-style-type: none"> • Answer the questions from GIS Sub-WG member • Confirm status of GIS 	<ul style="list-style-type: none"> • Concept of the GIS-PF was shared. • Questionnaire for members were discussed.
#3	April 1	<ul style="list-style-type: none"> • Workshop on Contents Management System 	<ul style="list-style-type: none"> • Image of contents management system was shared. • Result of questionnaire to the members was reported.
#4	May 30	<ul style="list-style-type: none"> • Understanding the concept of digital Innovation 	<ul style="list-style-type: none"> • Follow-up of previous SWG • Preparation of the GIS-PF (contents, user)
#5	June 8	<ul style="list-style-type: none"> • Concept of GIS Platform and confirmation of its available data 	<ul style="list-style-type: none"> • Introduction of prototype Web-GIS • Preparation of the GIS-PF (available data)
#6	June 16	<ul style="list-style-type: none"> • Discussion in DONRE 	<ul style="list-style-type: none"> • To recognize current situation of DONRE
#7	June 27	<ul style="list-style-type: none"> • Answer on the available data from C/P 	<ul style="list-style-type: none"> • Sharing information of actual data to be installed in the GIS-PF
#8	July 20	<ul style="list-style-type: none"> • Draft framework of GIS-PF 	<ul style="list-style-type: none"> • Comments for draft framework by members were collected.
#9	August 25	<ul style="list-style-type: none"> • Updated framework and O&M of GIS-PF • Concept of construction permit 	<ul style="list-style-type: none"> • Necessity of interview with IT company was confirmed. • To be discussed more for construction permit database
#10	September 8	<ul style="list-style-type: none"> • Updated framework and draft TOR of subcontract work • Status of available data 	<ul style="list-style-type: none"> • Necessity to collect more quotations from IT companies for clarifying maintenance cost was confirmed. • Prepare official letter to obtain available data.
#11	November 21	<ul style="list-style-type: none"> • Result of cost estimation of GIS-PF • Data to be installed in GIS-PF • Updated schedule related to GIS-PF 	<ul style="list-style-type: none"> • Annual maintenance cost for the GIS-PF was cleared. • Necessity to update status of available data proposed by C/P was confirmed. • The schedule of development of the GIS-PF that it will take 2-3 months to develop draft version of the GIS-PF after contract with subcontractor was confirmed.
#12	January 16, 2023	<ul style="list-style-type: none"> • Discussion on framework and cost estimation of GIS-PF 	<ul style="list-style-type: none"> • The updated framework and cost estimation was shared and discussed.
#13	February 27	<ul style="list-style-type: none"> • RFP of GIS-PF • Status of data collection 	<ul style="list-style-type: none"> • Roles of each C/P regarding operation and maintenance activities of the GIS-PF were clarified and to be discussed. • Status of data collection was confirmed.
#14	March 24	<ul style="list-style-type: none"> • Evaluation of proposal • Status of data collection • Format of GIS data in GIS-PF • Tasks and roles for O&M of GIS-PF 	<ul style="list-style-type: none"> • Result of evaluation of proposals submitted by candidate companies of subcontract work were explained. • Status of data collection was updated. • Draft formats of obtained GIS data were discussed. • Detailed tasks and roles of each C/P for operation and management of the GIS-PF were confirmed.
#15	April 20	<ul style="list-style-type: none"> • Kick-off meeting with the subcontractor for the development of GIS-PF • Status of data collection 	<ul style="list-style-type: none"> • Introduction of the subcontractor and members. • Work plan for development of GIS-PF was explained by the subcontractor. • Status of data collection was updated and shared to the subcontractor.
#16	May 17	<ul style="list-style-type: none"> • Status of data collection • Format of GIS data in GIS-PF • Visualization of urban information in GIS-PF 	<ul style="list-style-type: none"> • Status of data collection was updated. • Draft formats of GIS data were updated and discussed. • Methodology and candidate theme on visualization of urban information were explained and discussed.
#17	June 6	<ul style="list-style-type: none"> • Progress of GIS-PF 	<ul style="list-style-type: none"> • Progress of subcontract work was reported.

No.	Date	Agenda	Points and Result of Discussion
		<ul style="list-style-type: none"> development Status of data collection Visualization of urban information 	<ul style="list-style-type: none"> Status of data collection was updated, and it was confirmed that some data should make agreement for data publishment with data providers. Three themes for C/P's trial work for visualized data development were selected.
#18	June 13	<ul style="list-style-type: none"> Training session for visualization of urban information (#1) 	<ul style="list-style-type: none"> Explanations and practices on how to create data and develop visualized map on three themes were conducted.
#19	June 20	<ul style="list-style-type: none"> Training session for visualization of urban information (#2) 	<ul style="list-style-type: none"> Practices on how to create data and develop visualized map on three themes were conducted by using QGIS.
#20	June 27	<ul style="list-style-type: none"> Presentation of GeoNode Preparation for GIS-PF 	<ul style="list-style-type: none"> Presentation of GeoNode, key technology of GIS-PF, was conducted by the subcontractor. Detailed work plan, which at least three cycles of agile development will be conducted was confirmed.
#21	July 11	<ul style="list-style-type: none"> Training session on GeoNode (#1) 	<ul style="list-style-type: none"> Training on GeoNode was conducted by the subcontractor. Seven participants from the C/P learned basic operations of GeoNode.
#22	July 13	<ul style="list-style-type: none"> Training session on GeoNode (#2) 	<ul style="list-style-type: none"> Training on GeoNode was conducted by the subcontractor. Seven participants from the C/P learned how to upload contents in GeoNode.
#23	July 19	<ul style="list-style-type: none"> Demonstration of GIS-PF 	<ul style="list-style-type: none"> Demonstration scenario for the consultation meeting and the 3rd JCC was explained and discussed.
#24	July 26	<ul style="list-style-type: none"> Preparation for 3rd JCC 	<ul style="list-style-type: none"> Modification points of the GIS-PF for the 3rd JCC were confirmed and discussed with members and the subcontractor. Migration to the new domain (urbangis.mpwt.gov.la) was successfully completed.
#25	August 21	<ul style="list-style-type: none"> Proposal of logo and color image of the GIS-PF Report issue on data security Discussion on trial operation and updating of the GIS-PF 	<ul style="list-style-type: none"> Color image was decided, and logo will be decided by C/P. Importance and countermeasure for data security were confirmed. Progress and necessary action for data updating and GIS-PF were confirmed.
#26	September 1	<ul style="list-style-type: none"> Training on upload GIS datasets to the GIS-PF 	<ul style="list-style-type: none"> C/P has exercised uploading dataset to the GIS-PF by themselves with assistance of the JICA Expert Team.
#27	October 17	<ul style="list-style-type: none"> Modification of the GIS-PF Training plan for O&M Outline of O&M manual 	<ul style="list-style-type: none"> Modification points of the GIS-PF for finalization were illustrated and discussed. Training plan for O&M was confirmed. Outline of O&M manual except for the manual developed by the subcontractor was explained.
#28	November 22	<ul style="list-style-type: none"> Training on re-upload GIS datasets to the GIS-PF 	<ul style="list-style-type: none"> C/Ps have learned how to upload datasets to the GIS-PF (VirGo) and set status of each dataset with practical works.
#29	November 28	<ul style="list-style-type: none"> Training session on GeoNode (#3) 	<ul style="list-style-type: none"> Training on GeoNode was conducted by the subcontractor. C/Ps have learned rest of the functions installed in VirGo and Q&A session for the subcontractor has conducted.
#30	December 8	<ul style="list-style-type: none"> Training of trainers (ToT) session #1 	<ul style="list-style-type: none"> C/Ps have learned necessary tasks for operating VirGo by the JICA Expert Team with O&M manual.
#31	December 12	<ul style="list-style-type: none"> Training of trainers (ToT) session #2 	<ul style="list-style-type: none"> C/Ps have learned necessary tasks for operating VirGo by the JICA Expert Team with O&M manual. C/Ps have conducted re-upload datasets to VirGo in the afternoon of the same day.

No.	Date	Agenda	Points and Result of Discussion
#32	December 14	<ul style="list-style-type: none"> • Training of trainers (ToT) session #3 	<ul style="list-style-type: none"> • C/Ps have learned necessary tasks for operating VirGo by the JICA Expert Team with O&M manual. • Questionnaire for #1-3 ToT sessions is distributed by the JICA Expert Team on 19 December.
#33	December 26	<ul style="list-style-type: none"> • Training of trainers (ToT) session #4 	<ul style="list-style-type: none"> • C/Ps have learned necessary tasks for operating VirGo by the JICA Expert Team with O&M manual. • Questionnaire for #4 ToT session is distributed by the JICA Expert Team at the end of the session.
#34	January 30, 2024	<ul style="list-style-type: none"> • Progress of O&M activities of VirGo 	<ul style="list-style-type: none"> • Modification points of monitoring sheets were suggested by C/P.
#35	February 27	<ul style="list-style-type: none"> • Progress of O&M activities of VirGo • Individual capability for O&M VirGo • Demonstration of access analysis 	<ul style="list-style-type: none"> • Monthly O&M activities were reported by each C/P. • Supplemental training for improving capability for O&M was confirmed. • Access analysis with Google Analytics was demonstrated as additional training.
#36	March 28	<ul style="list-style-type: none"> • Progress of O&M activities of VirGo • Individual capability for O&M VirGo 	<ul style="list-style-type: none"> • Monthly O&M activities were reported by each C/P. • Menu and schedule of supplemental training sessions were discussed.
#37	April 25	<ul style="list-style-type: none"> • Progress of O&M activities of VirGo • Video for introducing VirGo 	<ul style="list-style-type: none"> • Monthly O&M activities were reported by each C/P. • Storyboard of the video for introducing VirGo to be screened at 9th UMP was discussed.
#38	June 6	<ul style="list-style-type: none"> • Report on incident and daily status • Capability checking 	<ul style="list-style-type: none"> • Monthly O&M activities were reported by each C/P. • Incident, daily status and capability checking were discussed.

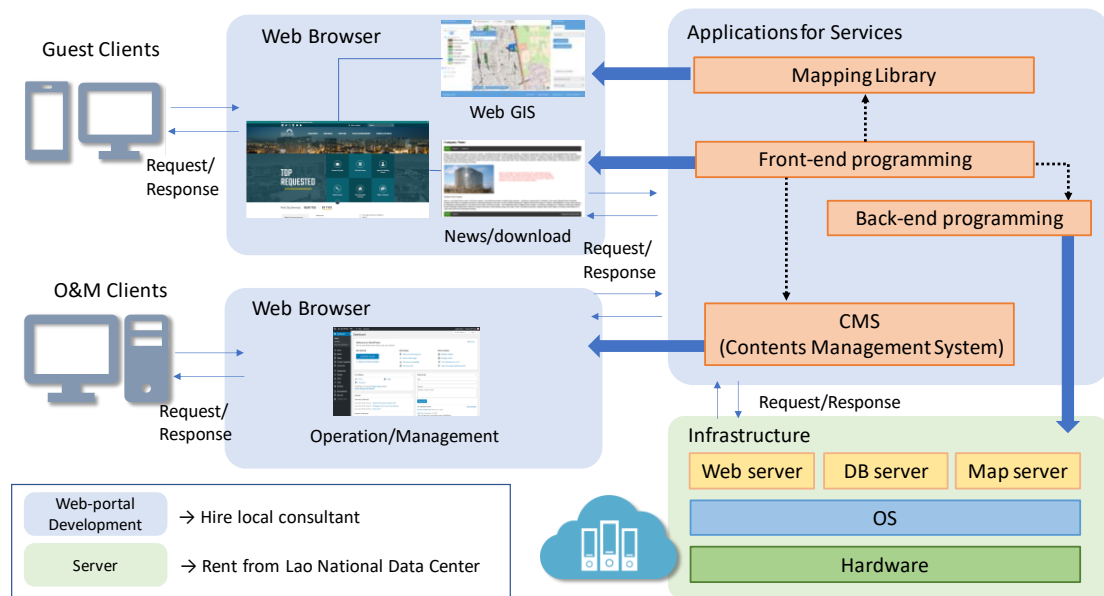
Source: JICA Expert Team

(5) Procurement of Subcontractor for Development of the GIS-PF

a) Preparation of Subcontract

The JICA Expert Team held interviews with seven IT companies in Lao from August to September 2022 and collected the quotations for development of the GIS-PF from four of them. The JICA Expert Team also held meetings with the Lao National Data Center to confirm the price for utilization of network service.

Through the interviews, the JICA Expert Team and C/P agreed that the GIS-PF will be provided as a web portal site which will be equipped with web map and data sharing functions (see Figure 3-9).



Source: JICA Expert Team

Figure 3-9: Structure of the GIS-PF

b) Selection of Subcontractor

The JICA Expert Team prepared the terms of reference (TOR) for the development of the GIS-PF and sent the Request for Proposal (RfP) to six candidate IT companies (see Table 3-11) on February 28, 2023, and collected two proposals by March 17, 2023. The JICA Expert Team confirmed the other four companies about the reason why they did not submit the proposals. All of them responded that it would be difficult to implement the subcontract work within the expected price (USD 15,000) stated in the RfP.

Table 3-11: List of Candidate IT Companies (Alphabetical Order)

No.	Company Name	Send RfP	Submit Proposal
1	Innova Fortuna Sole Co., Ltd.	✓	✓
2	Lailaolab ICT Solutions Co., Ltd.	✓	
3	LAO PHENIX CONSULTING CO., LTD.	✓	✓
4	Network Solution Service	✓	
5	Sysmatik IT Solution Co., Ltd.	✓	
6	Systory Co., Ltd.	✓	

Source: JICA Expert Team

The JICA Expert Team evaluated the proposals by using five criteria and selected Innova Fortuna Co., Ltd. as the subcontractor in early April 2023. The JICA Expert Team requested to Innova Fortuna Co., Ltd. to submit updated work plan which was evaluated as ‘poor’ at the contract negotiation and received updated one.

Table 3-12: Result of Evaluation

No.	Company Name	Experience of the Company	Work Plan	Development Plan	Experience of the Leaders	Quotation
1	Innova Fortuna Sole Co., Ltd	Excellent	Poor	Moderate	Moderate	Within budget
2	LAO PHENIX CONSULTING CO., LTD.	Excellent	Moderate	Excellent	Excellent	Much higher than budget

Source: JICA Expert Team

c) Summary of Subcontract Work

Table 3-13 shows the summary of the subcontract work including the cost, period, and name of subcontractor. The subcontract work for the development of the GIS-PF was originally scheduled to the end of September 30, 2023. However, since C/Ps were unable to secure training schedules, the contract period was extended until December 15, 2023.

After the completion of the development contract of the GIS-PF, the JICA Expert Team made another negotiated contract on maintenance of the GIS-PF with Innova Fortuna Co., Ltd. from December 15, 2023 to July 31, 2024.

Moreover, the JICA Expert Team made additional negotiated contract on development of mirror site of the GIS-PF with Innova Fortuna Co., Ltd. from June 14 to July 12. The details of the mirror site are described in Section 3.3(13) Establishment of Mirror Site of the GIS-PF in MPWT.

Table 3-13: Summary of Subcontract Work



Contract Name	Period	Cost	Contractor
Development of GIS-PF for Project for Capacity Development on Urban Development Control and Promotion in Laos (CDUDCP)	From 11 April 2023 To 30 September 2023 (Amendment to December 15, 2023)	13,910 USD	Innova Fortuna Co., Ltd.
Maintenance of the GIS Platform for Project for Capacity Development on Urban Development Control and Promotion in Laos (CDUDCP)	From 15 December 2023 To 31 July 2024	2,500 USD	Innova Fortuna Co., Ltd.
Formulation of Mirror Site of the GIS Platform for Project for Capacity Development on Urban Development Control and Promotion in Laos (CDUDCP)	From 14 June 2024 To 12 July 2024	3,000 USD	Innova Fortuna Co., Ltd.

Source: JICA Expert Team

(6) Corporate Color and Name of the GIS-PF

During the 25th GIS-SWG on August 21, 2023, the JICA Expert Team proposed the corporate color, name, and logo for the GIS-PF. Following the discussion with C/Ps, these were finalized and decided during the 38th Urban WG, as shown in Table 3-14.

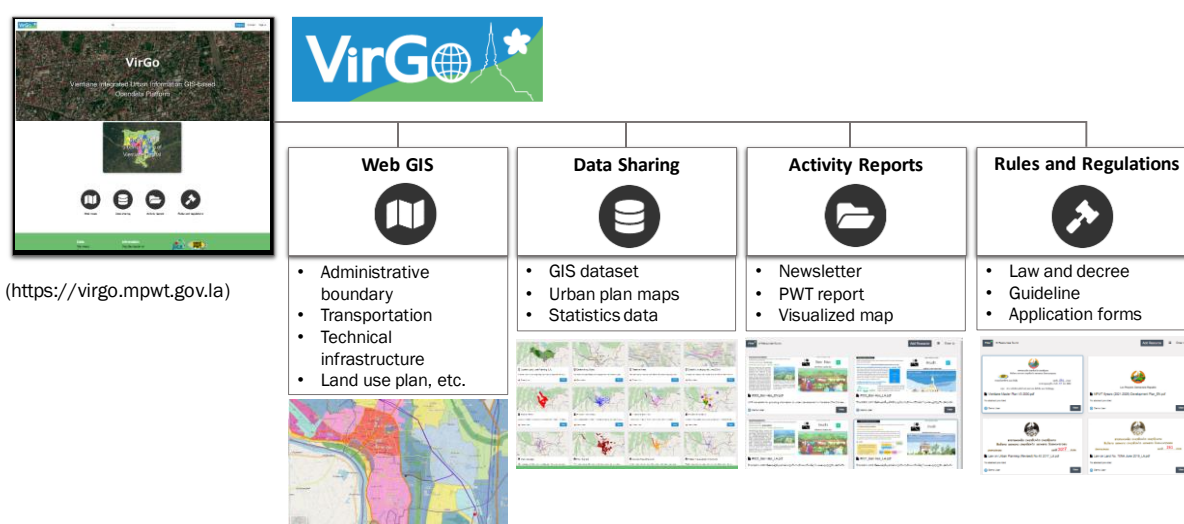
Table 3-14: Corporate Color, Name, and Logo of the GIS-PF

Corporate Color	Name	Logo
	VirGo: Vientiane Integrated Urban information GIS-based Opendata platform	

Source: JICA Expert Team

(7) Structure and Contents of the GIS-PF

The GIS-PF (VirGo) consists of four main contents, namely: Web Maps, Data Sharing, Activity Reports, and Rules and Regulations, as shown in Figure 3-10. VirGo has a responsive design so that both laptop and mobile (smartphone, tablet) users can access and use VirGo using their own devices.



Source: JICA Expert Team

Figure 3-10: Contents of VirGo

Table 3-15 and Table 3-16 show the list of GIS data and PDF documents currently installed in VirGo. To collect data, the C/P prepared the official letter to organizations of data provider and held a meeting with responsible person and technical staff of each organization. In addition, the details of the publication level are shown in Table 3-17.

Table 3-15: List of GIS Data in VirGo

Category	Layer Name	Type	Source	Publication Level
Administrative Boundary	Province boundary	Polygon	Transport and road sector of DPWT	Level 6
	District boundary	Polygon		Level 6
	Village boundary	Polygon		Level 1
Land Use Plan	General land use plan	Polygon	DPWT	Level 6
Land Use Category	Land Use Category	Polygon	Department of Land (MONRE)	Level 6

Category	Layer Name	Type	Source	Publication Level
Transportation	Current road network	Polyline	Transport and road sector of DPWT (developed in VTMP)	Level 6
	Future road network	Polyline		Level 4
	Public transportation network	Polyline		Level 6
Technical Infrastructure	Water supply pipeline	Polyline	Water Supply State Enterprise	Level 4
	Fire hydrant	Point		Level 6
	Main Sewage line	Polyline	EDL	Level 6
	Transmission line	Polyline		Level 6
	Electric line	Polyline		Level 6
	Substation	Point		Level 6
	Electric Pole	Point		Level 6
	Underground line	Polyline		Level 6
Construction Permit	Determining Road	Polyline	DPWT	Level 6
	Reserve Area	Polygon		Level 6
Others	Government office	Point	CDUDCP team	Level 6

Source: JICA Expert Team

Table 3-16: List of PDF Documents in VirGo

Contents	File Name	Type	Published Year	Source	Language	Publication Level
Activity Reports	#001_Ban Hao	PDF	2022	UMP	EN/LA	Level 6
	#002_Ban Hao	PDF	2023	UMP	EN/LA	Level 6
	#003_Ban Hao	PDF	2023	UMP	EN/LA	Level 6
	#004&5_Ban Hao	PDF	2023	UMP	EN/LA	Level 6
	#006_Ban Hao	PDF	2024	UMP	EN/LA	Level 6
	List and Location of Determining Road	PDF	2023	DPWT	EN	Level 6
Rules and Regulations	Regulations of Land Use (based on GLUP)	PDF	2023	CDUDCP	EN/LA	Level 6
	ROW of determining road	PDF	2023	CDUDCP	EN/LA	Level 6
	Law on Urban Planning (2017)	PDF	2017	National Assembly	LA	Level 6
	Law on Land (2019)	PDF	2019	National Assembly	LA	Level 6
	Permission request form	PDF	2023	MPWT	LA	Level 6
	The 9th Five-Year National Socio-Economic Development Plan (2021-2025)	PDF	2020	Vientiane Capital	LA	Level 6
	MPWT's 5 YEARS (2021-2025) DEVELOPMENT PLAN	PDF	2020	MPWT	EN	Level 6
	DPWT's 10 Years Strategy Plan (2016-2025)	PDF	2016	DPWT	LA	Level 6
	Vientiane M/P V3 2030	PDF	2022	Vientiane Capital	LA	Level 6
Detailed-GLUP-2030	PDF	2023	DPWT	EN/LA	Level 6	

Source: JICA Expert Team

(8) Data Security Management for the GIS-PF

The data publication level was established to prevent data leak. The O&M team of VirGo must confirm with the data providers about the publication level for each provided data. The uploaded data tagged with the publication level is controlled for viewing and/or downloading by the user type. The matrix table of the data publication level is shown in Table 3-17.

Table 3-17: Data Publication Level for GIS-PF

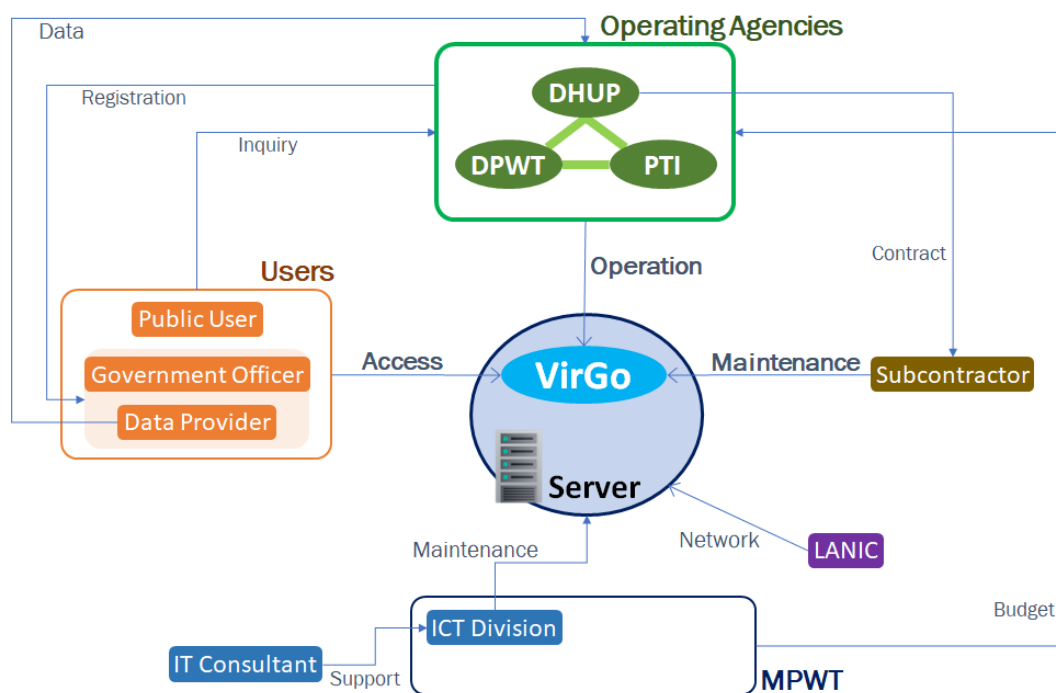
Publication Level		PWT Officials		Government Officers		Public	
		View	Download	View	Download	View	Download
Level 1	Only PWT officials can View	○	NG	NG	NG	NG	NG
Level 2	Open for PWT officials	○	○	NG	NG	NG	NG
Level 3	Government officer can view	○	○	○	NG	NG	NG
Level 4	Open for government officer	○	○	○	○	NG	NG
Level 5	Public user can view	○	○	○	○	○	NG
Level 6	Open for the public (Full Open)	○	○	○	○	○	○

Source: JICA Expert Team

(9) Operation and Maintenance of the GIS-PF

a) Role of Organization for O&M of the GIS-PF

Figure 3-11 shows the role of the C/P agencies (DHUP, PTI and DPWT) and other related agencies for operation and maintenance of VirGo.



Source: JICA Expert Team

Figure 3-11: Role of Organizations for O&M of VirGo

b) Assignments of C/Ps for O&M of the GIS-PF

Table 3-18 shows the list of personnel in-charge of operating VirGo. A total of 11 individuals were assigned from the DHUP, PTI, and DPWT during the handover ceremony on January 17, 2024, where the O&M manual was distributed to the staffs at the ceremony. The manual describes that the members of the O&M staffs shall be reviewed every December, and new staffs will be assigned after conducting trainings by the training manager.

Table 3-18: List of Personnel in-charge of VirGo

Role	Position	Name	Organization	Task of the position
Information Manager (IM)	General Manager (1)	Mr. Nalongxay MYVAPADITH	DHUP	Chief executive of VirGo, assignment of operators (SA, CM and TM), approval of activity plan, issuance of letter
System Administrator (SA)	Leader (1)	Mr. Dao KEOSUKAN	DHUP	Chairperson for O&M of VirGo and leader of SA
	Sub-Leader (1)	Mr. Vasaly SISAVATH	DHUP	Deputy chair and leader of SA
	Support Staff (1-2)	Mr. Thavysack PHENGMALA	DHUP	Support staff with practical work
Mr. Souksavanh HANEPHOM				
Contents Manager (CM)	Leader (1)	Mr. Somchit CHERSUANTHOR	PTI	Leader of CM in PTI, collaboratively operating VirGo with chair
	Leader (1)	Mr. Sonepaseuth PHOTHISA	DPWT	Leader of CM in DPWT, collaboratively operating VirGo with chair
	Support Staff (1-2)	Mr. Bounpon SHISAWAT	PTI	Support Staff with practical work in PTI
		Ms. Phattharavady OUDOMDETH		
Support Staff (1-2)	Mr. Vientiane BANTHONGXAY	DPWT	Support Staff with practical work in DPWT	
	Mr. Sinthanou PHANTHAVONG			
Training Manager (TM)	Leader (1)	Mr. Somchit CHERSUANTHOR	PTI	Leader of training (planning, arrangement)
	Sub-Leader (1-2)	Mr. Bounpon SHISAWAT	PTI	Sub-leader of training
Ms. Phattharavady OUDOMDETH				
Maintenance	IT Consultant	Innova Fortuna Co. Ltd.		Defined on the contract

Source: JICA Expert Team

c) Activity Plan for O&M of the GIS-PF

The activity plan for O&M of VirGo was developed through discussions and trainings with the JICA Expert Team and the C/Ps. The C/P's role and annual activity schedule for O&M of VirGo are shown in Table 3-19 and Figure 3-12, respectively.

Table 3-19: C/P's Role for O&M of VirGo

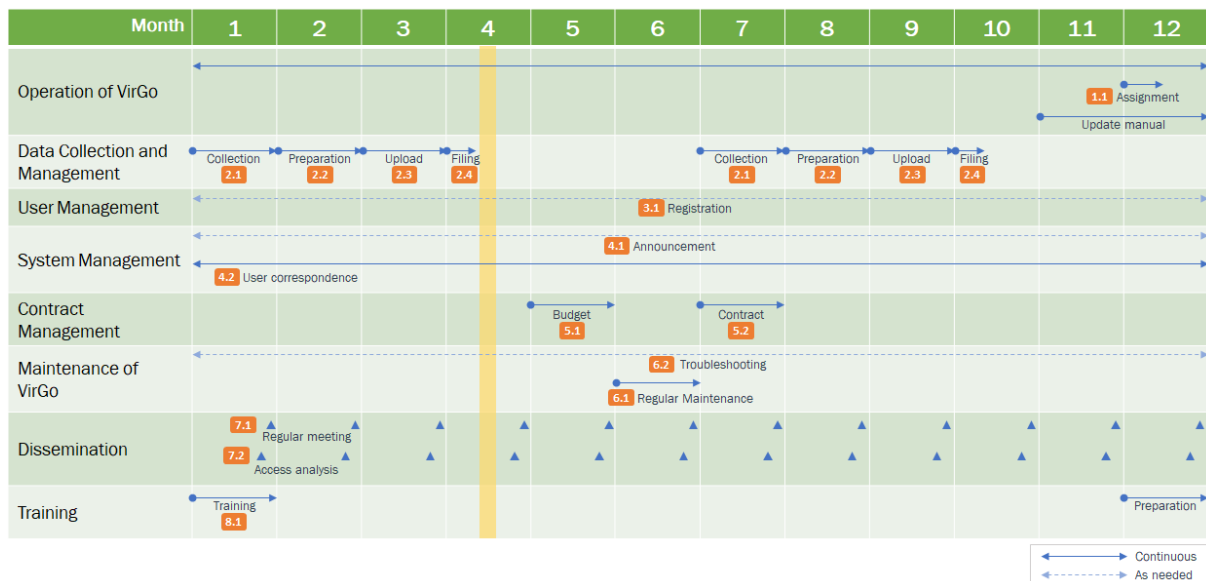
Category	Task	Role				Frequency	Period
		IM	SA	CM	TM		
Data Collection and Management	2.1 Data Collection	✓	✓✓	✓✓		Once (twice) a year	In January (July)
	2.2 Data Preparation	✓	✓	✓✓		Once (twice) a year	In February (August)
	2.3 Upload/Update Contents	✓	✓	✓✓		Once (twice) a year	In March (September)
	2.4 File Management		✓✓	✓		Once (twice) a year	In April (October)
User Management	3.1 User Registration	✓	✓✓			As needed	-
System Management	4.1 Announcement	✓	✓✓			As needed	-
	4.2 User Correspondence	✓	✓✓			Every morning	Monday to Friday
Contract Management	5.1 Budget Management	✓	✓✓			Once a year	In May
	5.2 Contract Management	✓	✓✓			Once a year	In July
Maintenance of VirGo	6.1 Regular Maintenance	✓	✓✓			Once a year	In June

Category	Task	Role				Frequency	Period
		IM	SA	CM	TM		
	6.2 Troubleshooting	✓	✓✓	✓		As needed	-
Dissemination	7.1 Regular Meeting	✓	✓	✓	✓	Once a month	Last Thursday
	7.2 Access Analysis			✓✓		Once a month	Before 7.1
Training	8.1 Training	✓	✓	✓	✓✓	Once a year	In January

✓✓: Mainly responsible role ✓: Related to the task

IM: Information Manager SA: System Administrator CM: Contents Manager TM: Training Manager

Source: JICA Expert Team



Source: JICA Expert Team

Figure 3-12: Annual Activity Schedule for O&M of VirGo

d) Cost Allocation for Development and O&M of the GIS-PF

Table 3-20 shows the cost allocation for the development and maintenance of VirGo during and after the CDUDCP. The JICA Expert Team bore all cost for development and maintenance until the end of July and the C/Ps need to secure budget for the maintenance cost every year from August 2024. The securing of the maintenance cost by C/Ps was confirmed in the 45th Urban WG.

Table 3-20: Cost Allocation of the GIS-PF

Items	Organization	During CDUDCP (until July 2024)			After CDUDCP (from Aug. 2024)
		Development (Apr. – Sep. 2023)	Operation/Training (Jul. – Dec. 2023)	Maintenance (Jan. – Jul. 2024)	Maintenance
GIS-PF Development (hire local consultant)	JICA Expert Team	\$13,910		\$3,000 (mirror site)	–
O&M of GIS-PF	JICA Expert Team	–	Free (included in development cost)	\$2,500	–
	C/P	–	–	–	\$2,500 (per year)

Source: JICA Expert Team

(10) Training for Operation and Maintenance of the GIS-PF

Table 3-21 shows trainings related to the operation and maintenance of the GIS-PF for the C/P. The JICA Expert Team conducted data upload trainings, training of trainee sessions, supplemental trainings as follow-up of monitoring, and incident training during the CDUDCP.

Table 3-21: Trainings for the GIS-PF

No.	Type	Period	Trainer	Training Program
1	GeoNode Presentation	June 2023	Subcontractor	Functions of GeoNode
2	GeoNode Training	3 times in 2023	Subcontractor	Exercise of GeoNode, Operation of VirGo
3	Data Upload Training	3 times in 2023	JICA Expert	Upload and setup dataset in VirGo, Create web map
4	ToT Sessions (O&M Training)	4 times in Dec. 2023	JICA Expert	Roles and necessary tasks for O&M of VirGo (O&M manual in English and Lao)
5	Monitoring and Follow-up	Once a month since Jan. 2024	JICA Expert	Monitoring O&M activity and capability, follow-up (supplemental training)
6	Cyber Security Training	May 2024	LANIC	Learn information security (3 half days)
7	Incident Training	May 2024	JICA Expert	Role playing for incident case
8	GeoNode Training	2 times in July 2024	Subcontractor	User management, Data upload (with mirror site)

Source: JICA Expert Team

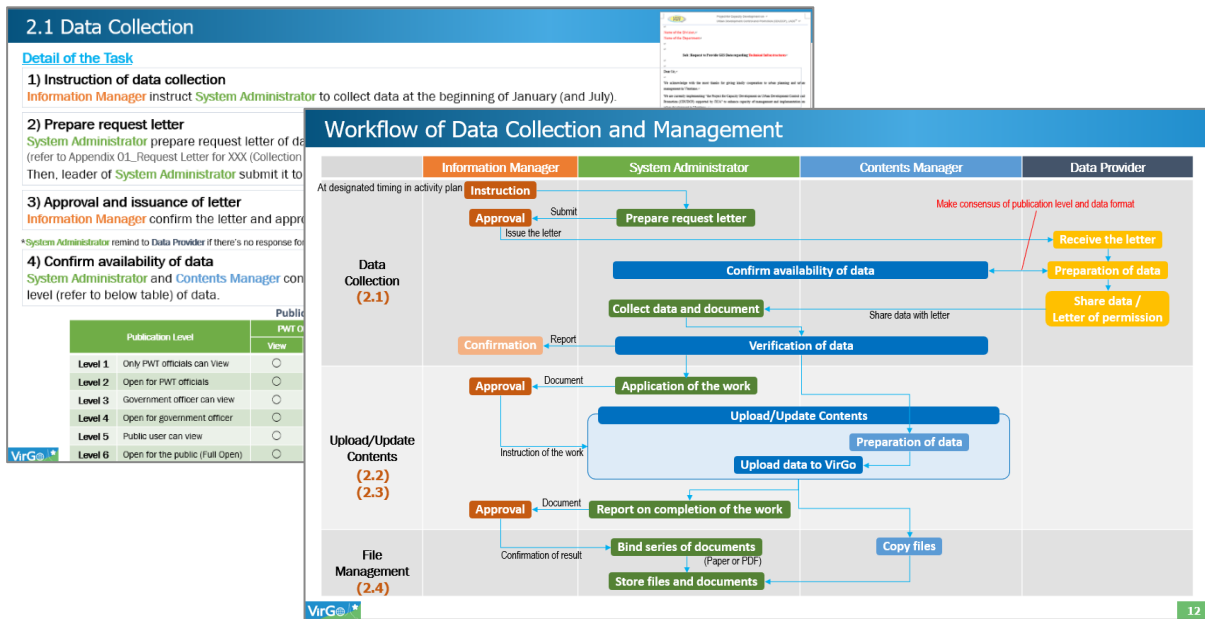
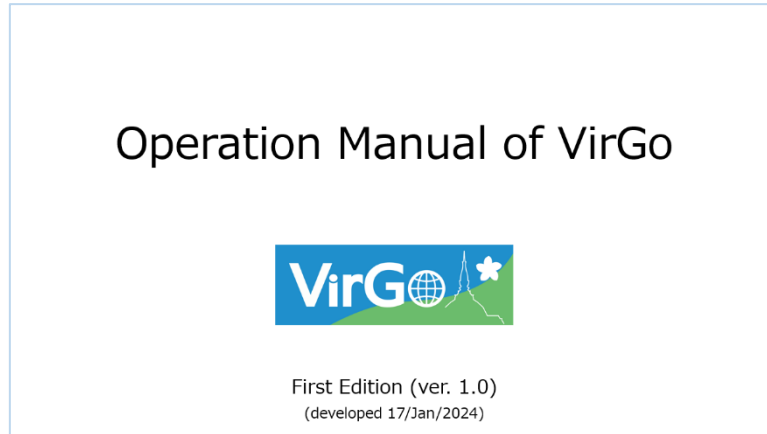
(11) Development of O&M Manual

The JICA Expert Team developed the O&M manual covering all the expected O&M tasks which the C/P should carry out for the O&M of the GIS-PF. Table 3-22 shows the table of contents (TOC) of the O&M manual and Figure 3-13 shows the image of the manual. The JICA Expert Team conducted training sessions for the C/Ps based on the O&M manual. The final version of the manual was delivered to the O&M members at the handover ceremony which was held in January 2024.

Table 3-22: Table of Contents of the O&M Manual

Chapter (Category)	Section (Task)	Page	Outline of the Task
1. Role of Operating Agencies	1.1 Role for Operating VirGo	8	Assignment of Information Manager and Operators of VirGo
	1.2 Activity Plan	9	Development of annual activity plan
2. Data Collection and Management	2.1 Data Collection	13	Procedure for data collection from data provider
	2.2 Data Preparation	16	Cleansing of GIS data and preparation of PDF documents before uploading
	2.3 Upload/Update Contents	19	Upload/update contents to VirGo
	2.4 File Management	25	Store master copy of uploaded contents
3. User Management	3.1 User Management	28	Registration and management of users
4. System Management	4.1 Announcement	34	Announcement for user of VirGo
	4.2 User Correspondence	38	Collection of e-mail from contact form and correspondence
5. Contract Management	5.1 Budget Management	42	Procedure for acquiring budget of maintenance in the next fiscal year
	5.2 Contract Management	45	Contract with the outsourcer (developer)
6. Maintenance of VirGo	6.1 Regular Maintenance	49	Request for maintenance defined in the contract
	6.2 Troubleshooting	51	Procedure in case of any trouble occur
7. Dissemination	7.1 Regular Meeting (Monitoring)	56	Report progress of each task, discuss on activity plan, etc.
	7.2 Access Analysis	59	Analysis of access log and consideration of dissemination of VirGo
8. Training	8.1 Training	66	Training for users and administrators

Source: JICA Expert Team



Source: JICA Expert Team

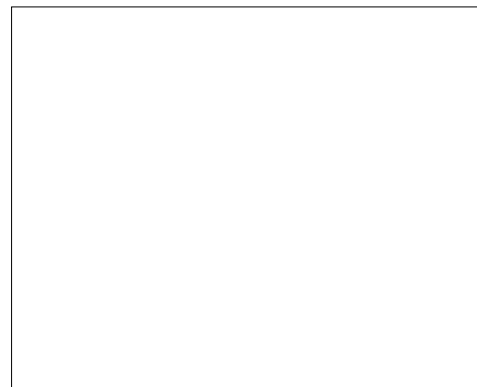
Figure 3-13: Image of the O&M Manual

(12) Handover of the GIS-PF to C/P

On January 17, 2024, a handover ceremony was held to transfer the ownership of the GIS-PF from the JICA Expert Team to the C/P. During the ceremony, a transfer agreement with the following conditions was made between the leader of the JICA Expert Team and the Deputy Director General of DHUP:

- DHUP properly operates and maintains VirGo in cooperation with the Public Works and Transport Institute (PTI) and the Department of Public Works and Transport of Vientiane Capital (DPWT).
- DHUP assigns proper staffs for the operation and maintenance of VirGo in coordination with PTI and DPWT.
- DHUP certainly secures the budget for the operation and maintenance of VirGo
- The JICA Expert Team continuously provides technical assistance for DHUP, PTI and DPWT for the monitoring of the operation of VirGo, capacity enhancement of the human resources, and dissemination of VirGo until July 11, 2024.

The result of the handover ceremony was posted in the Facebook page of the JICA Laos Office and released in the Vientiane Times.



Lao and Japanese officials pose for a photo at the website handover ceremony in Vientiane on Wednesday.

JICA hands over digital information sharing system to public works ministry

Advertorial Desk

A new website for a digital information-sharing system, namely VirGo (<https://virgo.mpw.gov.la>), was handed over to the Ministry of Public Works and Transport on January 17.

The event took place at the ministry and was attended by representatives of the ministry's Department of Housing and Urban Planning, the Public Works and Transport Institute, Vientiane Department of Public Works and Transport, the Japan International Cooperation Agency (JICA) Laos Office, and the JICA expert team of the Current Condition Survey in Pilot Area for Project for Capacity Development on Urban Development Control and Promotion in Laos (CDUDCP).

The VirGo website has been developed under the

CDUDCP project, supported by JICA from March 2022.

The website has been created to share information about urban planning and urban development, not only for government agencies, but also for citizens and private business operators.

Through the website, users can easily access various official data and information such as land use plans, infrastructure network maps, laws and regulations

at any time, using a personal computer or smartphone.

VirGo is an achievement of the Ministry of Public Works and Transport's challenge to incorporate digital innovation in the field of urban management.

The developers hope the website will improve the administrative work of government officials and strengthen public service delivery for citizens and private business operators.

LAOViet Bank		Exchange Rate	
35 of January 16, 2024			
Foreign Currencies		Buying	Selling
US Dollar	USD	20.640	20.741
Vietnamese Dong	VND	0.8449	0.8621
Thai Baht	THB	635.67	642.10
Euro	EUR	22.047	22.268
Renminbi Yuan	CNY	2.912	2.942

Source: Vientiane Times

Figure 3-14: Article of the Handover Ceremony in Newspaper

(13) Establishment of Mirror Site of the GIS-PF in MPWT

In April 2024, the C/P requested the JICA Expert Team to support the establishment of the complementary operation environment for VirGo (called Mirror Site hereinafter) in MPWT. The mirror site aims to be used for the following purposes:

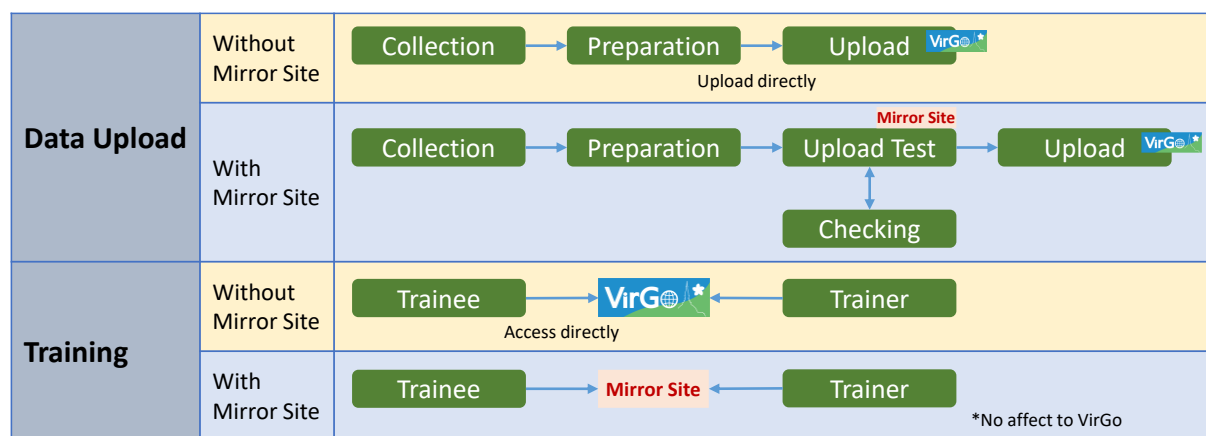
- Testing environment for data uploading to avoid data leaking incidents.
- Utilization for operational training without affecting the original data of VirGo.
- Stable operation of VirGo by the C/Ps in case the current IT consultant suspends O&M service.

Figure 3-15 shows the image of utilization of the mirror site of VirGo.

Through discussion with DHUP and the ICT division, it was confirmed that the mirror site is built on the server in MPWT which is already used for the original VirGo site, considering operation under the

same OS environment.

For the establishment, the JICA Expert Team amended the current contract with the IT consultant for O&M to add USD 3,000. The establishment work was completed in July 2024.



Source: JICA Expert Team

Figure 3-15: Image of Utilization of Mirror Site of VirGo

(14) Dissemination Activities of VirGo

The JICA Expert Team and the C/Ps disseminated VirGo to the public through the UMP, SNS, and newspaper. Table 3-23 shows the outline of the dissemination activities.

Table 3-23: Dissemination Activities of VirGo

Means of Dissemination	Period	Details of Activities
Urban Management Platform (UMP)	5 th UMP on September 26, 2023	<ul style="list-style-type: none"> Disseminate VirGo to high school students
	9 th UMP on May 28-30, 2024	<ul style="list-style-type: none"> Disseminate VirGo to university students of NUOL (3 sessions for 3 faculties) Introducing the operation of VirGo by the video contents
Facebook of JICA Lao Office	After JCC in August 2023 and handover ceremony in January 2024	<ul style="list-style-type: none"> Posted in Facebook page
Vientiane Times	After JCC in August 2023 and handover ceremony in January 2024	<ul style="list-style-type: none"> Released in the News Paper

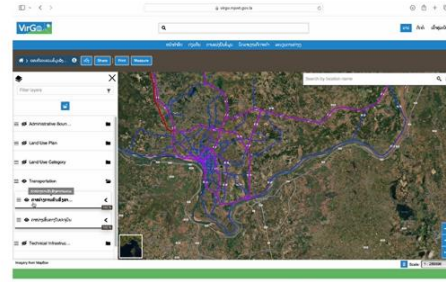
Source: JICA Expert Team

(15) Video for Introduction of VirGo

The JICA Expert Team created an introduction video as a tool to introduce VirGo to the Public (refer to Figure 3-16). This video was directly created by the JICA Expert Team by using video creation tools in accordance with the request from C/P and was screened at the 9th UMP held in May 2024. The mp4 format data of the video will be stored as Annex 16-2.



ສະບາດີ ມີນີ້ເຮົາຈະມາແນະນຳໃຫ້ທ່ານຊາກັນເວບໄຊ້ VirGo ແລະ ວິທີການເຂົ້າເຖິງຂໍ້ມູນໃນ VirGo
Sabaidee, today we would like to present the useful website and data accessibility method "VirGo"



ເຮົາສາມາດເປີດ ຫຼື ປິດຂໍ້ມູນພ້ອມກັນ
We can also open/close the main button "toggle group visibility" to display all sections altogether

Source: JICA Expert Team

Figure 3-16: Screenshots of the Introduction Video

(16) Issues and Countermeasures for Development of the GIS-PF

Table 3-24 shows issues and countermeasures arose in development of the GIS-PF in the project.

Table 3-24: Issues and Countermeasures for Development of the GIS-PF

Issues	Countermeasures
<ul style="list-style-type: none"> JICA Expert Team began collection of GIS data early to know necessary storage volume for data in GIS-PF before start of subcontract work. However, it took much time to obtain data than expected and it was one reason for the delay of GIS-PF development. 	<ul style="list-style-type: none"> JICA Expert Team had requested data collection through C/P in Urban WGs and GIS-SWGs, but it would be better to support C/P's work; prepare letters which they will send and attend meetings with data providing organizations. In the actual case, when C/P held a meeting with data providing organization based on prototype of the GIS-PF, the data was provided relatively smoothly.
<ul style="list-style-type: none"> It took a long time to decide specification of the GIS-PF and training schedule. Most C/P members were too busy since they were joining not only GIS-SWG but also Urban WG and Urban Promotion Working Team (UP-WT, mentioned in chapter 5) except for their regular works. 	<ul style="list-style-type: none"> JICA Expert Team showed way forward and schedule of coming meetings in every GIS-SWGs and Urban WG, shared materials of each WG in advance, and sent reminders about one week before. These countermeasures seemed to have a certain effect. For critical events, JICA Expert Team enhanced rate of participation by sending letter with agenda from team leader to DDG of each division. However, JICA Expert Team avoided to send letter frequently, because the letter may force them to change their original schedule, and it would be decreasing motivation of members.
<ul style="list-style-type: none"> Since the GIS-PF will be operated by C/P with MPWT's budget after completion of the project, there were initial technical and budgetary constraints for development of the GIS-PF. For example, it was difficult to choose GIS applications which requires subscription fee, such as ArcGIS Online. Therefore, it was admirable to use open-source software for development, and it was necessary to find local IT companies with necessary technologies for the subcontractor. 	<ul style="list-style-type: none"> JICA Expert Team had interviewed with several IT companies in advance to obtain quotation for annual maintenance fee of the GIS-PF and obtained approval in Urban WG before sending RfP to candidate companies. JICA Expert Team and C/P positioned GIS-PF as a web portal site, and squeezed main functions of the GIS-PF for displaying web maps and sharing data to reduce the development cost of the GIS-PF.
<ul style="list-style-type: none"> Since there is no information management section in C/P's department, it was concerned about cyber security management with operation of the GIS-PF, especially for data publication. 	<ul style="list-style-type: none"> The procedures of data collection were clearly described in O&M manual. When C/P collecting data, publication level must be confirmed with data provider and record in the authorized document

Issues	Countermeasures
	<ul style="list-style-type: none"> Series of cyber security seminar were held by JICA Long-term Expert and an incident management training was provided by JICA Expert Team for GIS-SWG members.

Source: JICA Expert Team

3.4 Seminar Series on Urban Issue

(1) Summary of Seminar Series

The JICA Expert Team supported to hold the seminar series on urban issue to enhance understanding of government agency and citizens on urban issue in Vientiane Capital. The seminar series consist of two types of small-scale seminar for mainly members of Urban WG and large-scale open seminar for various stakeholders including citizen and private business operators. During the project period, a total of eight seminars on urban issues were held for related government agencies and the citizen to deepen their understanding of urban issues in Vientiane Capital. The JICA Expert Team supported these seminars by considering the issues raised by C/Ps, providing data, introducing case studies, offering topics for discussion and presentations, and assisting in the preparation and summarizing of results.

a) Small-scale seminars

The small-scale seminars on urban issues were held nine times to discuss various topics relating to urban issues, urban planning, GIS, construction permit, urban development, and building code. The outline of each seminar is shown in Table 3-25.

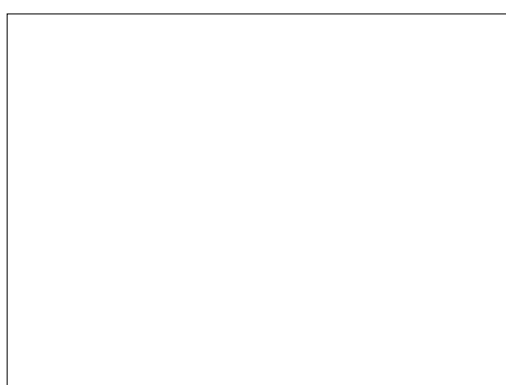
Table 3-25: Small-scale Seminar Series on Urban Issue

No.	Date	Agenda	Points and Result of Discussion	Note
#1	July 22, 2022	<ul style="list-style-type: none"> Introduction of Seminar Series on Urban Issues/ Management Visualization and analyses of current urban status by GIS Current GIS utilization for urban management and the issue (from DHUP, PTI, DPWT) Content before Group Work in 1st seminar on urban issues Group work on review current urban situation in Vientiane Capital Presentation for the results of group work and discussion 	<ul style="list-style-type: none"> Expected schedule of seminar series was introduced. Examples of visualized maps and analysis results in Vientiane Capital with existing data were introduced. Current situation of GIS utilization and issues of counterparts were shared. Discussion in work group was facilitated. Useful GIS data, current GIS work, and issues for promote GIS usage in were considered in each group. Results of group work were shared. 	
#2	Oct. 21	<ul style="list-style-type: none"> Introduction of current condition of pilot area Orientation of methodology of current condition analysis, visioning and urban structure plan Group work on analysis, visioning and urban structure plan Presentation for the results of group 	<ul style="list-style-type: none"> Necessary data and information for current condition analysis were introduced. Methodology of SWOT analysis was indicated. Vision and urban structure plan based on result of the current condition analysis were created. 	

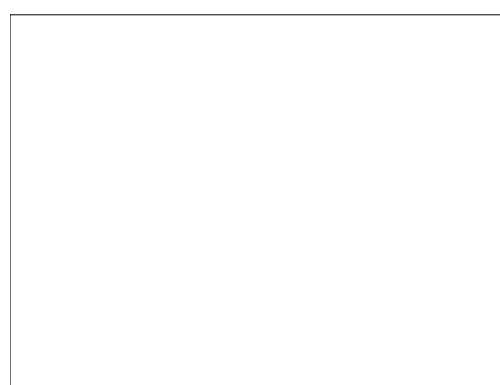
No.	Date	Agenda	Points and Result of Discussion	Note
		work and discussion	<ul style="list-style-type: none"> Brainstorming for visioning and urban structure planning in pilot area was implemented. 	
#3	Feb 14, 2023	<ul style="list-style-type: none"> Orientation of Workshop Objective of JICA CDUDCP and Area Concept Plan Activity Current Condition of Pilot Area Orientation for Questionnaire Sheet 	<ul style="list-style-type: none"> Good/favorable points and issue/dissatisfied points in land use and infrastructure were summarized by the sticky notes session of the workshop. Opinions for future urbanization and land use were collected. 	As the 1st Stakeholder Workshop in Pilot Area
#4	Feb. 24	<ul style="list-style-type: none"> Presentation for line ministries and professional architects/ engineers Objective and contents of Lao B/C 	<ul style="list-style-type: none"> Comments from related ministries and technical experts were collected. Analyze the comments and consider correcting the B/C. 	As the 2nd Lao B/C Seminar
#5	May 9	<ul style="list-style-type: none"> To understand the current situation and result of community opinion survey in the pilot area To develop draft of the Vision and Area Concept Plan of the pilot area Participants: 16 representatives from four villages 	<ul style="list-style-type: none"> Draft of vision and urban structure plan was developed through the group work session 	As the 2nd Stakeholder Workshop in Pilot Area
#6	May 11	<ul style="list-style-type: none"> Background and objective of Lao B/C Structure safety, wind load and seismic force Fire safety of Lao B/C 	<ul style="list-style-type: none"> The minimum requirements of the American Concrete Institute (ACI) Code was provided. Wind and seismic load factors for each zone / district were defined. Figures and specifications in the chapter on fire safety were agreed with the determination. Considering ALACE for the determination of structural safety factor, wind load, and seismic load factor was requested. Adding definitions of technical terms were agreed. 	As the 1st round-table meeting on Lao B/C
#7	Jul. 24	<ul style="list-style-type: none"> Introduce outline of CDUDCP and the activity Introduce current condition and pilot area and the draft Area Concept Plan 	<ul style="list-style-type: none"> For the stakeholder involvement, private sectors and landowners are crucial for enhancing urban collaborative activities. Understanding socio-economic factors like demography, land prices, and infrastructure is essential. The project's aim to boost property values and assured no concessions or resettlements. 	As the 3rd Stakeholder Workshop in Pilot Area
#8	Dec. 22	<ul style="list-style-type: none"> Concept of Collaborative Urban Development Area Concept Plan of Pilot Area Case Study of Collaborative Urban Development Discussion on Collaborative Urban Development in Laos 	<ul style="list-style-type: none"> Participants had a lively exchange of opinions as shown below. All private business operators are interested in collaborative urban development, especially in some fields of urban development However, when collaborative urban development is implemented, private business operators pointed out some 	As the 1st Seminar on Collaborative Urban Development

No.	Date	Agenda	Points and Result of Discussion	Note
			challenges • Private business operators expressed their willingness to have further discussions with the government to implement collaborative urban development.	
#9	Mar 29, 2024	• Issues of current construction permit system • Countermeasure of institutional improvement of construction permit system	• Current issues of construction permit system and the improvement points were discussed with DPWT and OPWT.	

Source: JICA Expert Team



1st Small-scale Seminar on Urban Issue



2nd Small-scale Seminar on Urban Issue

Source: JICA Expert Team

Figure 3-17: Small-scale Seminar on Urban Issue

b) Large-Scale Open Seminar

The large-scale seminars on urban issues were held three times to discuss GIS-PF, construction permit, building code, and collaborative urban development. The outline of each seminar is shown in Table 3-26.

Table 3-26: Large-scale Open Seminar on Urban Issue

No.	Date	Agenda	Points and Result of Discussion	Note
#1	Sep.26, 2023	• Introduction of GIS-PF • GIS-PF exercise session • Panel discussion for understanding and sharing ideas for GIS-PF	• The GIS-PF was introduced for the public and private sector • To disseminate GIS-PF's usability and effectiveness for the public and private sectors • Upgrading of data and information in the GIS-PF was discussed.	As the 4th UMP
#2	Jan.22 to 25 and Feb.6,	• Vision for urban development • Construction permit for our city 'Ban Hao' • Building Code for our city 'Ban	• Held at 6 districts: Xaythany, Xaysettha, Chanthabouly, Naxaiythong, Sisattanak, and Sikhottabong chaired by the head and deputy of each district.	As the 6th UMP

No.	Date	Agenda	Points and Result of Discussion	Note
	2024	Hao' • Building permit process and VirGo	• Video on construction permit and Building Code were screened to explain relevant provisions in an easy-to-understand manner for the participants.	
#3	May 23	• Guidelines of Collaborative Urban Development project in Vientiane • Sustainable Operation and Utilization of GIS-PF • Way forward for Operation of UMP	• The guideline of collaborative urban development for private business operator was introduced. • VirGo and the dissemination activity for the sustainability were introduced. • Revised TOR of UMP for C/P's sustainable operation was agreed.	As the 8th UMP

Source: JICA Expert Team

(2) Achievements and Challenges of Seminar Series on Urban Issues

The achievements realized by Seminar Series on Urban Issues, as well as the challenges and lessons learned through the preparation and holding of those seminars, are summarized in Table 3-26.

Table 3-26: Achievements and Challenges of Seminar Series on Urban Issue

Category	Achievements	Challenges and Lessons Learned
Overall for Seminar Series on Urban Issues	<ul style="list-style-type: none"> • 12 seminars in total, including 9 small-scale seminars and 3 large-scale open seminars were held as planned originally. • In terms of themes, a wide range of themes covering whole of project outputs were discussed and shared, including Output 1 (1 small session, 3 large sessions), Output 2 (1 small session, 1 large session), Output 3 (5 small sessions, 1 large session), and Output 4 (2 small sessions, 1 large session). • Participants were different depending on the theme, but a wide range of stakeholders, including relevant government ministries and agencies, private businesses (construction and other), resident representatives, and universities, were involved. 	<ul style="list-style-type: none"> • The number of seminars held has achieved the target planned, but 6 of the 9 small seminars were held as necessary meetings for each output activity, and all large seminars were held concurrently with UMP, with only 3 being held as completely independent seminars. • C/P was mainly responsible for arranging the schedule and participants, but due to the heavy burden on the C/P, who also had to attend various meetings on the activities of each output and Urban WG, as well as their regular work, they had no choice but to hold the event in a joint manner, as mentioned above. • Large-scale seminars were held concurrently with UMP since it was difficult to separate them from UMP in terms of content and schedule. Small-scale seminars were held on themes that needed to be discussed and shared within each output activity, but it would have been better to plan these seminars as forums for discussion on each output in the first place, and it seems that there was less necessity to hold them as independent seminars.
Large-scale Open Seminar on Urban Issue	1st large-scale open seminar was held after the completion of the demonstration version of the GIS-PF, and it was the first time to open the GIS-PF to the public, with the aim to promote its use and to exchange opinions for further improvements. In particular, opinions such as expectations for the GIS-PF and ideas for its use were expressed by private businesses, which contributed to the popularization and improvement of the GIS-PF.	A professor from NUOL was scheduled to participate in the panel discussion. However, the professor cancelled attendance in the last minutes, then Team Leader of JICA expert Team took his place instead. Since his schedule could be predicted unfixable when the team made an offer to him, it was necessary to take measures such as preparation of video message in advance.

Category	Achievements	Challenges and Lessons Learned
	<p>2nd large-scale open seminar was held for totally 5 days in 6 districts of Vientiane Capital, with the aim of popularization of the construction permit system and introduction of B/C currently being formulated. Video movie was used to introduce the construction permit system and issues, such as practical work for construction permit and current unauthorized construction, were discussed, and it was able to share residents to learn about construction permit system and its importance.</p> <p>In addition, chairing of the meetings was shared and rotated among DHUP, PTI, and DPWT, and as the meetings had been accumulated, this arrangement contributed to improve their capability to explain and manage the seminars.</p>	<p>Although an original plan of the seminar was to hold the seminar in 6 districts over 3 consecutive days in the mornings and afternoons, due to difficulties in schedule coordination, the schedule was changed to hold over 5 days. It caused in longer commitments for C/P, which likely placed a heavy burden on them.</p> <p>On the other hand, a good lesson learned was that the utilization of video contents was extremely effective in holding similar seminars multiple times. Video contents not only allowed for consistent information among participants, but also helped reduce the burden of C/P for proceeding discussions.</p>
	<p>3rd large-scale open seminar was held to realize or ensure sustainability of the three themes, urban collaborative development, GIS-PF, and UMP.</p> <p>The collaborative urban development guideline and completion version of the GIS-PF were introduced as outcomes of the project, and the efforts to realize projects and use cases of the GIS-PF were shared.</p>	<p>Since the meeting was held in the end of the project, three agendas were set for the main theme of sustainability after completion of the project. But the agenda became too crowded. In addition, the theme of transition of UMP to C/P was not an interesting topic for the participants from private sector. It is recommended to examine the agenda more carefully and focus on the issues to be shared to the participants in order to ensure smooth discussion progress.</p>

Source: JICA Expert Team

3.5 Capacity Enhancement through the Activities of Output 1

Through the activities of Output 1, capacity enhancement of C/Ps was achieved as shown in Table 3-27.

Table 3-27: Achievement of Capacity Enhancement through Activity of Output 1

Category of Activity		Capacity Enhancement of C/Ps
UMP		<ul style="list-style-type: none"> Understanding of purpose and significance of UMP Common recognition with relevant agencies for issues on urban development through UMP activities Autonomous organization of UMP meeting by C/P
GIS-PF	Development	<ul style="list-style-type: none"> Understanding of procurement process for GIS-PF development Understanding of management of GIS-PF development Understanding of technical functions of GIS-PF
	O&M	<ul style="list-style-type: none"> Understanding of roles and tasks of C/Ps for O&M Data collection and the security management Operation and maintenance of GIS-PF including incident management Understanding importance of cyber security
	Dissemination	<ul style="list-style-type: none"> Teaching skill for GIS-PF utilization Preparation and organization of workshop for citizen and private sector Understanding private sector's demand on official data sharing

Source: JICA Expert Team

Chapter 4. Achievement of Output 2

4.1 Summary

(1) Objective of Output 2

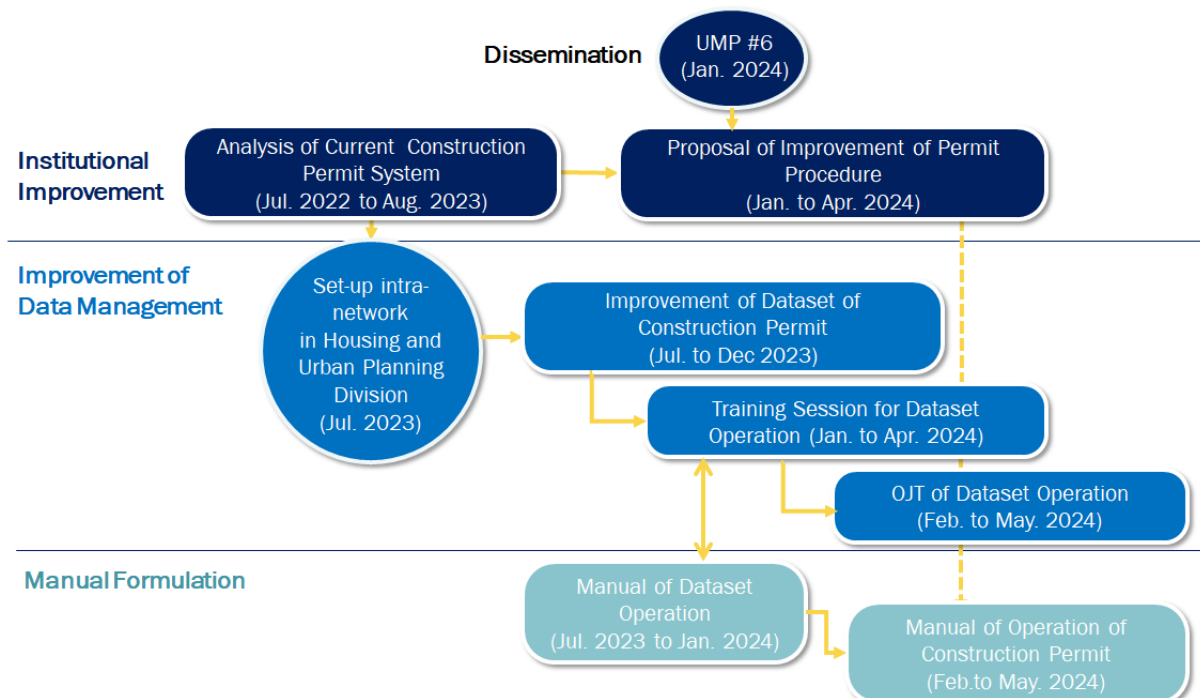
Output 2 aims to enhance the capacity of urban development management.

As the background of Output 2, there are operational issues and on-site issues in the administrative work of construction permits in Vientiane Capital. Currently, construction permits management is operated through paperwork by storing all related documents in paper form. For this, permit data cannot be utilized in policy making and planning due to the lack of data management. There are significant issues in on-site construction such as construction without permit, buildings not complying with regulation or permitted design, and obstruction to reservation area for roads and canals.

The activity of Output 2 aims to solve these issues through the optimization of administrative work and improvement of the institutional system.

(2) Overview of Activity of Output 2

The activity of Output 2 consists of four components: i) institutional improvement, ii) improvement of data management, iii) manual formulation, and iv) dissemination. The overview of activities actually carried out is shown in Figure 4-1.



Source: JICA Expert Team

Figure 4-1: Overview of Activity of Output 2

(3) Achievement of Output 2

The summary of achievement of Output 2 activities based on the PDM is shown in Table 4-1.

Table 4-1: Summary of Achievement of Output 2

Activities and Work Items	Achievements
2.1 To review existing permission systems for urban development (hereafter: development permission)	<ul style="list-style-type: none"> In the phase 1, detailed information of the current administrative work and forms and examples of permission documents were collected and reviewed.
2.2 To assess capacity of counterparts on operating development permission	<ul style="list-style-type: none"> Operational issues on work process of existing permit system and current data management were analyzed. On-site issues which have been causing in construction site were identified and the factors were analyzed.
2.3 To propose improvement of urban development permission procedures	<ul style="list-style-type: none"> GIS based permit data management system in DPWT was improved and the operation training was conducted. Institutional improvement towards operational and on-site issues was proposed.
2.4 To formulate manuals for operating development permission system	<ul style="list-style-type: none"> The manual on operation of development permit including data management and proposal of institutional improvement was formulated. The manual was approved by DG of DPWT on 26 July 2024.
2.5 To disseminate and promote development permission system	<ul style="list-style-type: none"> Development permit system was disseminated and discussed with public in 6th UMP GUP and documents relating to development permit were disseminated to public by the GIS-PF.
2.6 To conduct on-the-job training	<ul style="list-style-type: none"> On-the-job training for permit data management system was conducted.

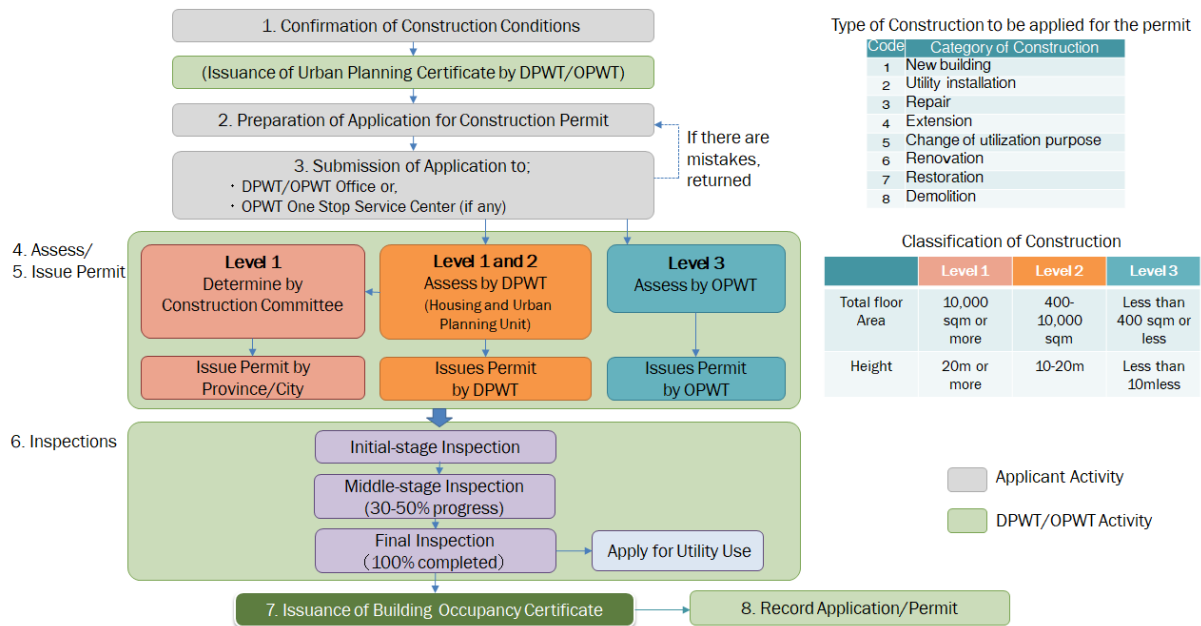
Source: JICA Expert Team

4.2 Outline of Current Construction Permit System

The construction permit system in Laos is carried out in accordance with the Construction Law (No. 159 of 2009) and the Construction Management Regulations (MPWT Ministerial Approval No. 2241 of 2019). The Construction Management Regulations was revised in 2019.

Construction permit is required for constructing new building or related infrastructure facilities, as well as renovating, repairing, and demolishing existing buildings or infrastructure facilities for the purpose of expansion, remodeling, or change of usage. The flowchart of construction permit system is shown in Figure 4-2.

Responsible organization for inspection and permission is different depending on levels of building size (level 1: large, level 2: medium, level 3: small). DPWT has responsibility for inspection and permission of level 1 (large-scale) and level 2 (medium-scale) building sizes, and OPWT has responsibility for inspection and permission of level 3 (small-scale) building size. In case of level 1, the final inspection is conducted by the Construction Management Committee established in prefecture or city.



Source: JICA Expert Team

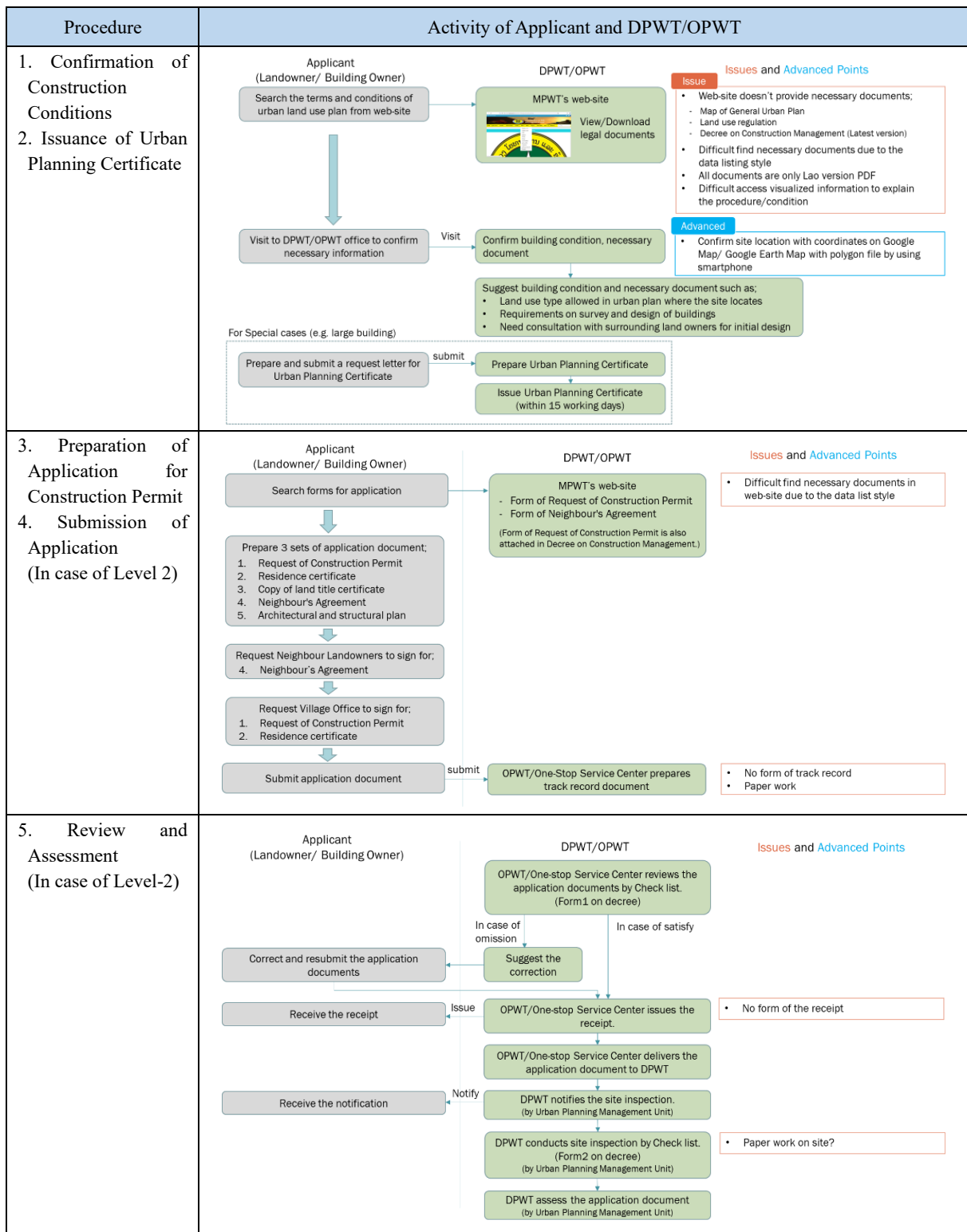
Figure 4-2: Flowchart of Current Construction Permit System

4.3 Current Issues on Construction Permit

(1) Review of Existing Procedure of Development Permit

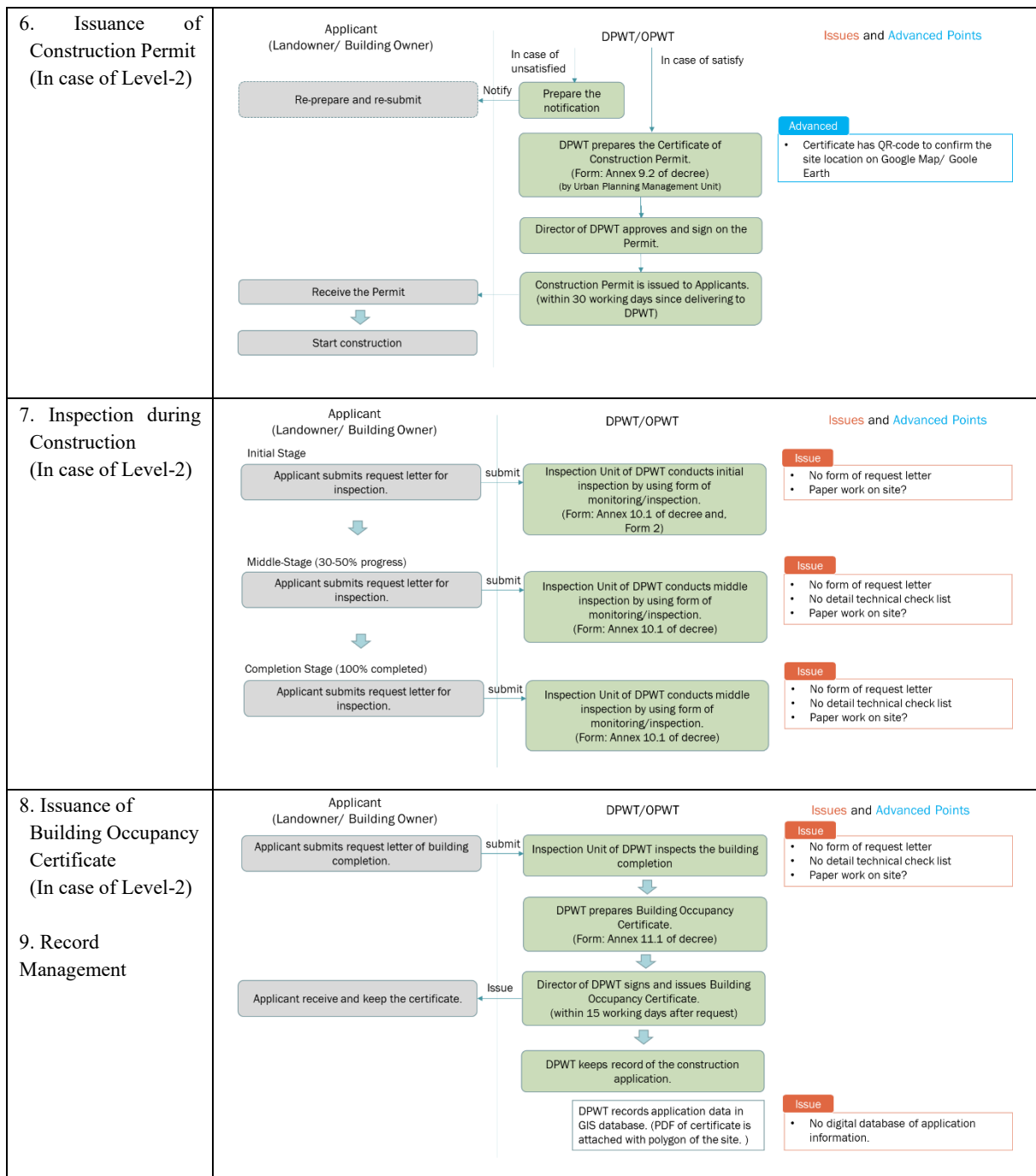
The JICA Expert Team conducted a further review of the existing construction permit process by breaking it down into the activities of the applicant and DPWT/OPWT, based on the current regulation and interviews with DPWT. The JICA Expert Team collected forms and examples of applications, inspection sheets, and certificates for the permits from DPWT. The results of the review are shown in Table 4-2 and Table 4-3. The results of analysis of current issue on construction permit including reviewing of existing procedure are summarized in the section of 4.3 (2).

Table 4-2: Current Procedure of Construction Permit (1/2)



Source: JICA Expert Team

Table 4-3: Current Procedure of Construction Permit (2/2)



Source: JICA Expert Team

(2) Analysis of Issues on Current Operation of Construction Permit

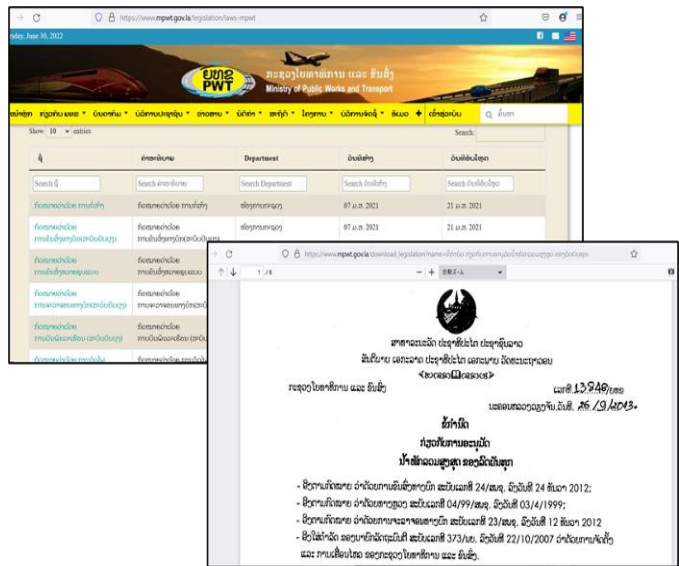
Based on the review of existing permit process and the examples of application documents, the JICA Expert Team analyzed the issues on the current operation of construction permit and actual construction site. The identified operational and on-site issues are summarized below.

[Operational Issues]

Issue 1: Lack of Applicant's Usability of MPWT Website

According to the Department of Public Works and Transport (DPWT), the MPWT website is providing information on the permission procedure and forms for the application of development permit. However, it is difficult for users to find the necessary information and documents due to the data listing style of the web interface (see Figure 4-3).

In addition, most of the documents on the website are only Lao version PDF and no English document, and the website does not provide necessary information and documents such as urban plan, land use regulation, latest legal documents, forms, and visualized contents to explain the process and condition.



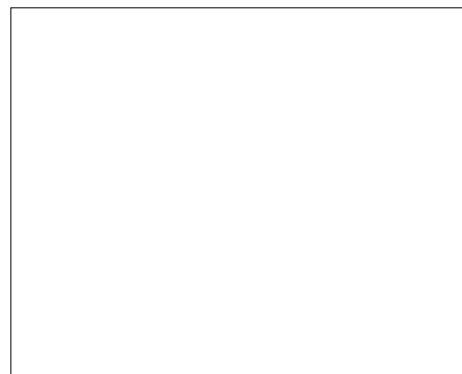
Source: MPWT website (<https://mpwt.gov.la/en>)

Figure 4-3: Data Searching Page on the MPWT Website

Issue 2: Lack of Common Use and Data Items of Current Permit Dataset

DPWT is storing permit data in their own GIS dataset after issuance of the certificate of construction permit. The GIS dataset has the polygon of the land area of the construction site which is attached with the permit information and scanned PDF documents. However, the GIS dataset is an independent system without intranet connection and operated by a staff in DPWT.

Moreover, it was confirmed that the GIS data lack the permit information such as purpose and level of construction, land use zoning category, and designated numerical building controls (BCR, FAR, height).



Source: JICA Expert Team

Figure 4-4: GIS Database for Permit Data in DPWT

Issue 3: Less Utilization of Digital Data

Currently, official documents such as certificates are developed using digital work such as MS Word. However, some administrative works are still depending on paper-based work like confirmation of construction condition in land use regulation and on-site inspection. Although permit data is recorded into the GIS database of DPWT after issuance of the permit certificate, the data is not effectively utilized for the administrative work on construction management.

Issue 4: Lack of Official Forms for Administrative Work

Most official forms are attached in the Ministerial Decision of Construction Management (No.2241 of 2019). However, the following forms are not provided:

- Urban Planning Certificate
- Request letters from applicant and the receipts
- Technical check list for inspections during construction and completion

[On-site Issue]

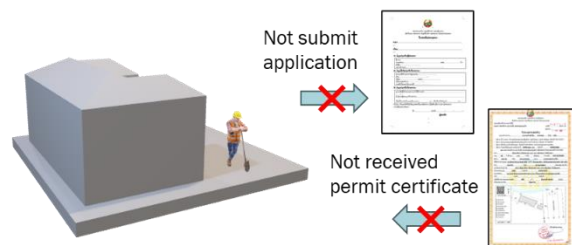
Issue 5: Constructions without Application for the Permit

Constructions without the application for a permit mostly occur at level 3 construction (small-scale building) for which OPWT is in charge. In case of level 1 and level 2 constructions (large/medium-scale building) overseen by DPWT, there are fewer construction cases without permit. This is cause the construction owner offers the building design and the design companies of large to medium scale construction recognize the permit procedure.

These illegal constructions are detected by the observation patrol of OPWT and village office.

As the factors causing the issue, the following reasons were identified through the discussion with DPWT and OPWT:

- Unclear obligation on level 3 construction to install signboard (Decision on Construction Management obligates all construction to install signboard. However, the sample of signboard is provided for level 1 and level 2 construction only)
- Construction owner's demand to avoid cost of design company fee and permit fees
- Amount of technical service fee for permit application is different among districts because the price is decided by the District Mayor and the price list is not published.



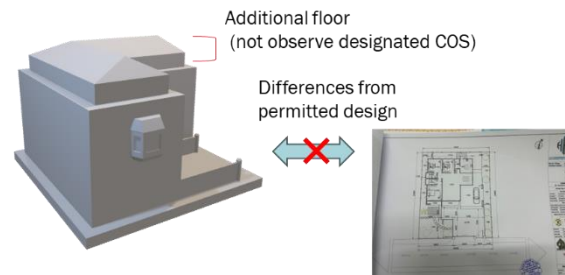
Source: JICA Expert Team

Figure 4-5: Image of Construction without Permit

Issue 6: Constructions which do not Comply with Regulations/Permitted Design

In unintentional cases, incorrect designs and constructions occur due to the lack of capability of the designer and builder. For these cases, the construction can be corrected through the suggestion of DPWT and OPWT.

In intentional cases, violations occur such as building beyond the permitted building line or extension of building without revising the permit. One of the factors of these cases is the difficulty in confirming the exact building line on site due to the absence of coordinate information for the land boundary in the application documents.

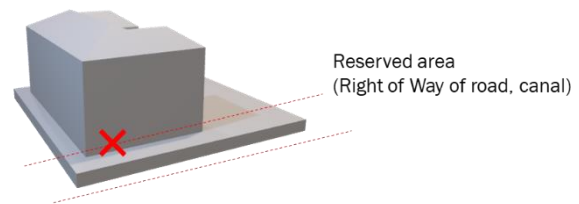


Source: JICA Expert Team

Figure 4-6: Image of Construction which do not Comply with Regulations/Permitted Design

Issue 7: Obstruction of Reservation Area

There are cases where a building intentionally or unintentionally covers a reservation areas for roads and canals. One of the factors is the lack of coordinate information for the land boundary in the application documents, same as issue 6. Another factor is the unclearness of coverage of reservation areas of alley roads. The road reservation area is stipulated in DPWT's Technical Guideline (No: 2536/DPWT, 2021). However, it is difficult to clarify the reservation area by the definition.



Source: JICA Expert Team

Figure 4-7: Image of Obstruction of Reservation Area

Table 4-4: Definition of Reservation Area of Alley Road

Type of Road	Beginning – Ending Point	Width of Reserve Area (m)
Alley road > 50 m	Designated the reserve area following the urban plan management	6
Alley road < 50 m	Designated the reserve area following the urban plan management	4

Source: DPWT Technical Guideline (No. 2536/DPWT, 2021)

Issue 8: Suspended Construction

There are the cases where construction starts but is suspended, mostly due to financial shortage. The current Decision on Construction Management stipulates permit revocation for constructions without any activity for six months after permit issuance. However, there is no regulation for the suspended cases. Suspended construction basically does not cause social and environmental problems. However, if the construction violates regulations, it is difficult to suggest the re-design and re-construction.

4.4 Proposal of Improvement of Construction Permit Procedures

(1) Improvement of Construction Permit Dataset Management System

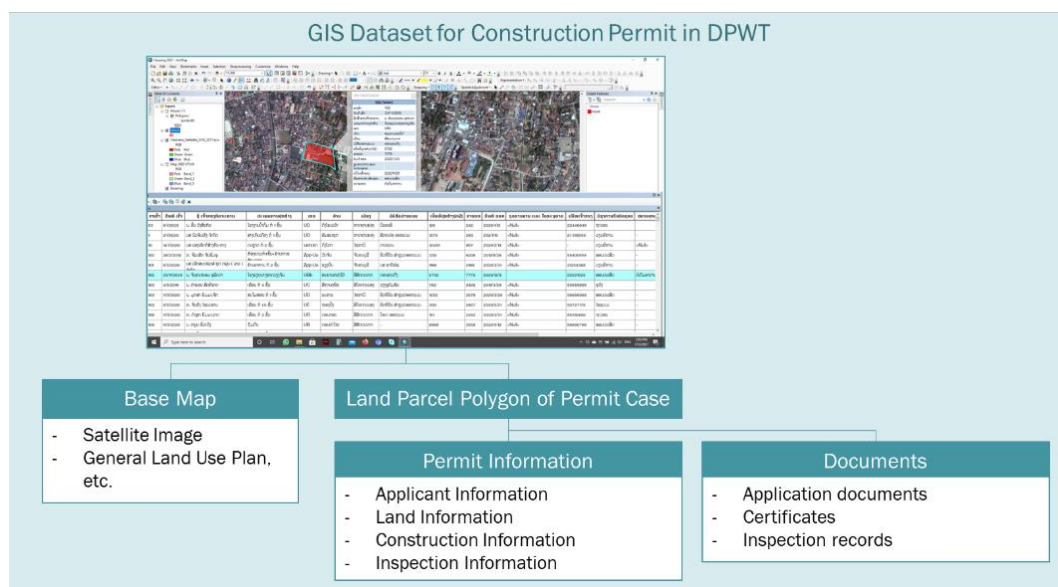
a) Objective of Improvement

Based on the result of analysis of operational issue of current development permit, the JICA Expert Team proposed the improvement of the current permit dataset management system to enhance the administrative works for the construction permit work. The proposed system aims the following:

- Promote paperless work
- Efficiency of administrative work
- Utilization of digital data for policy making and planning

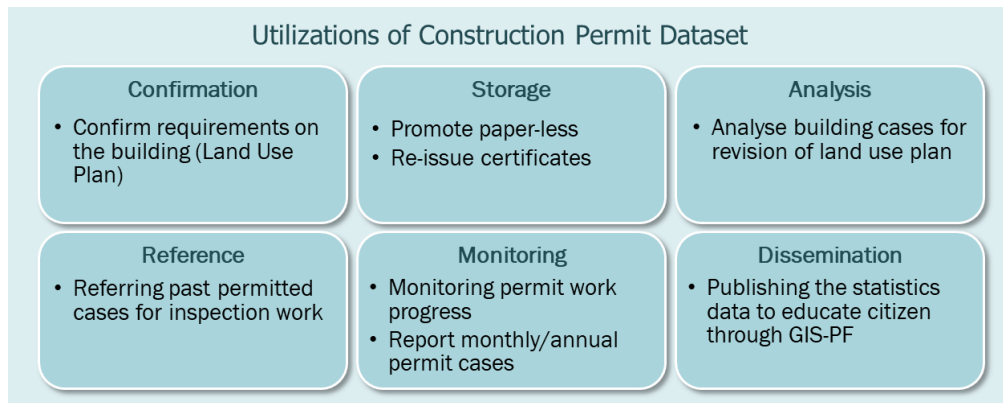
The outline and concept of utilization of construction permit dataset system are shown in Figure 4-8 and Figure 4-9. The key points of improvements of the system were to replace current system which operated by only one person to the new system which can be shared by entire organization, to add necessary items for the management and analysis of construction permit to the existing GIS data, and to convert analog documents in administrative work to digital data (PDF or other formats) in order to promote paperless work.

The JICA Expert Team initially considered a web system with functions for inputting, managing and analyzing construction permit data and sharing application forms into the GIS-PF developed in output 1 to address issues 1, 2 and 3. However, JICA Expert Team gave up the idea because the development costs for the entire GIS-PF would far exceed the budget. Therefore, it was agreed with C/P that improvement of construction permit system would be specialized for utilization only in DPWT, and that the GIS-PF would handle publication of application forms as the improvement of issue 1.



Source: JICA Expert Team

Figure 4-8: Outline of Construction Permit Dataset System



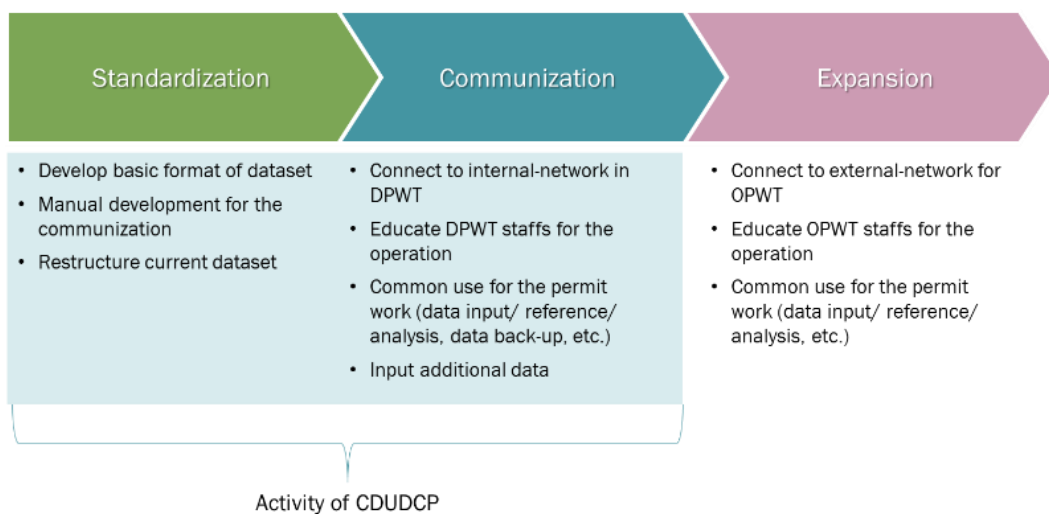
Source: JICA Expert Team

Figure 4-9: Concept of Utilization of Construction Permit Dataset System

b) Scope of Activity of Improvement of Construction Permit Dataset System

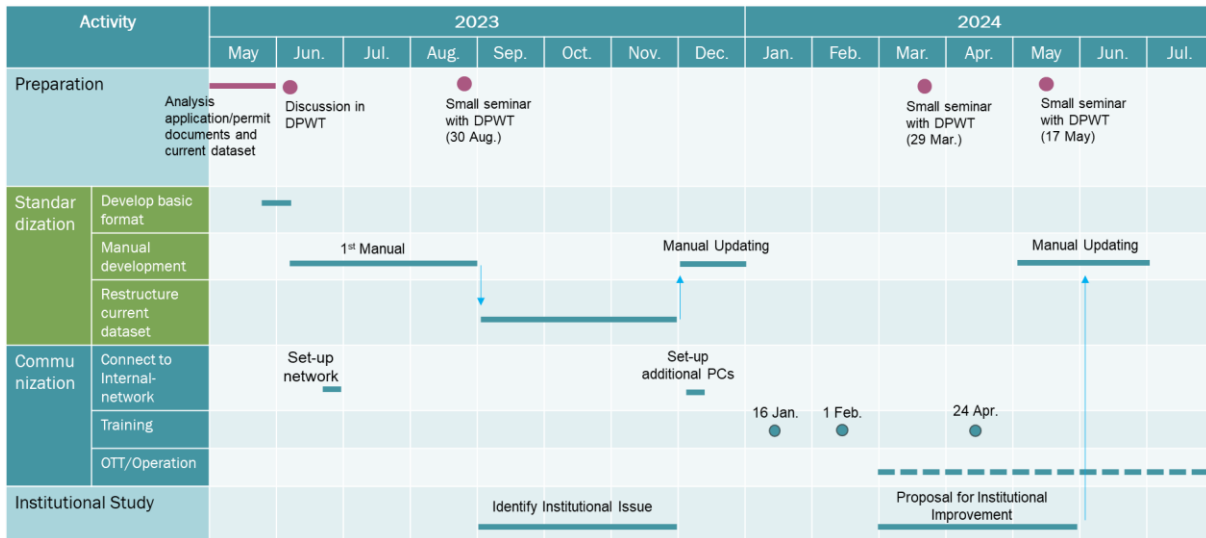
Figure 4-10 shows the proposed scope of activity for the improvement of construction permit dataset system. The JICA Expert Team supported the standardization and centralization of the management system of DPWT. The expansion to OPWTs will be implemented by the C/P in the future.

The schedule of the activity of standardization and communization is shown in Figure 4-11.



Source: JICA Expert Team

Figure 4-10: Scope of the CDUDCP Activity for the Improvement of Construction Permit Management System

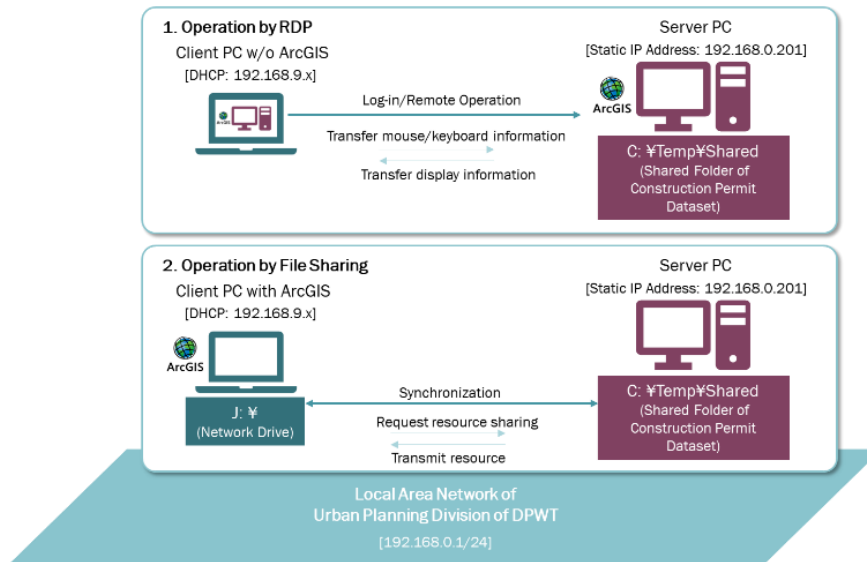


Source: JICA Expert Team

Figure 4-11: Schedule for the Improvement of Construction Permit Dataset System

c) Development of Internal Network in DPWT

The internal network in the Division of Housing and Urban Planning (DHUP) of the DPWT was developed through the support of the JICA Long-term Expert in June 2023. This network system provides the internal connection from the client PCs to the server PC, which hosts the construction permit dataset. Currently, the DPWT staff can use two types of connection methods, as shown in Figure 4-12.

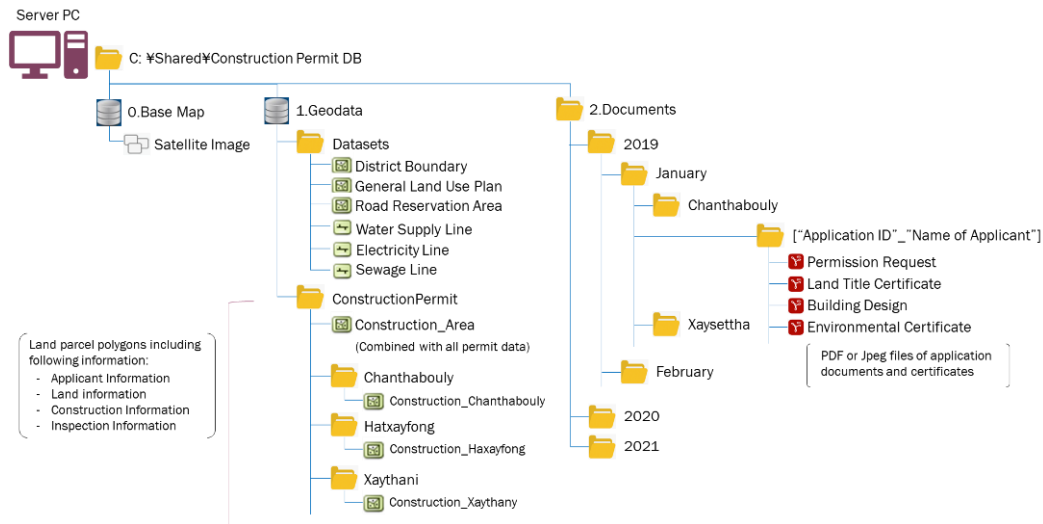


Source: JICA Expert Team

Figure 4-12: Developed Internal Network for Construction Permit Management System in DPWT

d) Improvement of Construction Permit Dataset in DPWT

The JICA Expert Team improved the data structure and data items of construction permit dataset based on the current dataset and analysis of necessary data items for permit management. The improvement work had been carried out through the discussion with DPWT and OPWT. The improved data structure and data items are shown in Figure 4-13 and Table 4-5, respectively.



Source: JICA Expert Team

Figure 4-13: Improved Data Structure of Construction Permit Dataset

Table 4-5: Improved Data Item of Construction Permit Dataset

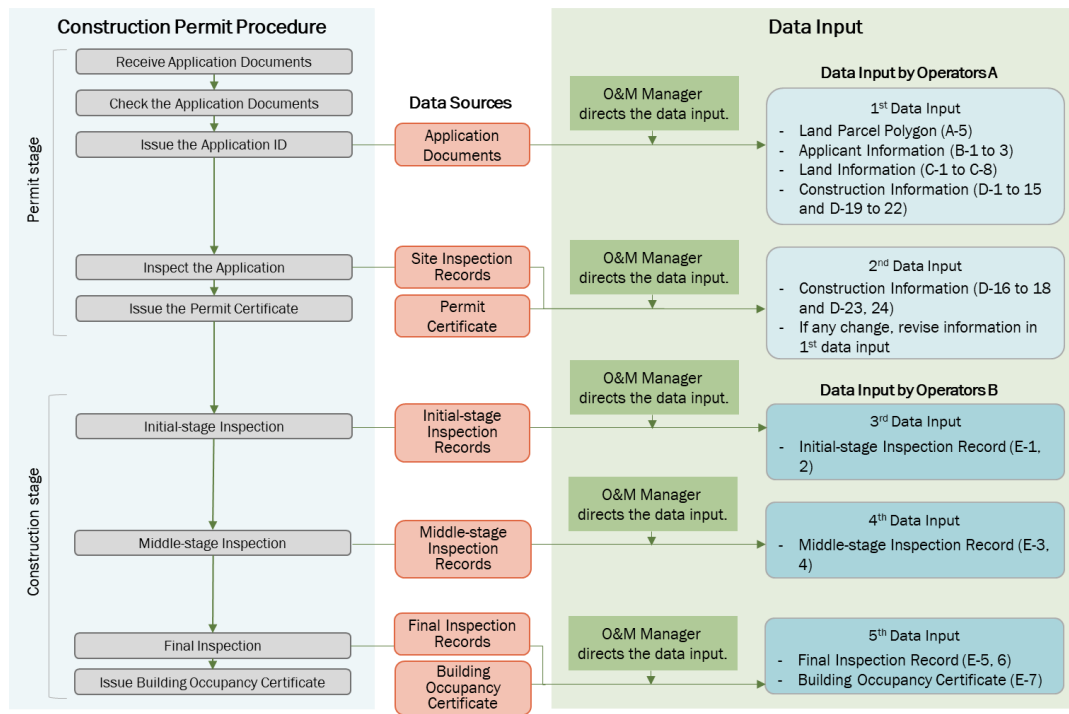
No	Items	Description
Base Map / Geodata		
A-1	Satellite Image	
A-2	District Boundary	
A-3	General Land Use Plan	
A-4	Road Reservation Area	Approved official Land use plan
A-5	Polygon of Land Parcel	ROW boundary of major road
A-6	Water Supply Line	Land Parcels of permit case
A-7	Electricity Line	
A-8	Sewage Line	
Applicant Information		
B-1	Citizenship ID	
B-2	Name	Name of applicant
B-3	Phone Number	
Land Information		
C-1	Registration ID	Land registration ID
C-2	Province ID	ID of province where the land locates
C-3	Address (province)	(link with province ID data)
C-4	District ID	ID of district where the land locates
C-5	Address (District)	(link with district ID data)
C-6	Village ID	ID of village where the land locates
C-7	Address (Village)	(link with village ID data)
C-8	Area of Land Right	Land area registered on the land certificate
C-9	Land Title Certificate	PDF
C-10	Land Conversion Certificate	PDF (if necessary)
Construction Information		
D-1	Application ID	Application ID which is issued by PWT official
D-2	Date of receipt	Date when PWT official received the application
D-3	Purpose of construction	New building, renovation, extension, etc
D-4	Type of use	Type of building use (e.g. residence, hotel, office)
D-5	Site area	Area of construction site(m2)

No	Items	Description
D-6	Type of construction	No. of stories of the building
D-7	Use Area	Building coverage area of the building (m2)
D-8	Total Floor Area	Total floor area of the building (m2)
D-9	Building Height	Height of the building (m)
D-10	Land Use Zone Category	Symbol of the zone category in GLUP (e.g.ZPP-Ua, UA)
D-11	Building Coverage Ratio	Designated BCR in GLUP when the application (%)
D-12	Floor Area Ratio	Designated FAR in GLUP when the application
D-13	Height Control	Designated Max. Building height in GLUP when the application (m)
D-14	Level of Construction	Category of permit procedure (Level 1,2 or 3)
D-15	Design Company Name	Name of designer or Design company of the building
D-16	ID of Construction Permit	ID of construction permit certificate which is issued by PWT official
D-17	Date of Issue	Date when PWT official issued the certificate
D-18	Responsible Name	Name of PWT official in charging of the permit
D-19	Permission Request	PDF
D-20	Building Design	PDF / Jpeg of drawing of building and land area
D-21	Environmental Certificate	PDF (if necessary)
D-22	Business Registration Certificate	PDF of certificate of Design Company
D-23	Record of site inspection	PDF
D-24	Construction Permit	PDF
Inspection information		
E-1	Date of initial stage inspection	Date of completion of initial stage inspection
E-2	Record of initial stage inspection	PDF
E-3	Date of middle stage inspection	Date of completion of middle stage inspection
E-4	Record of middle stage inspection	PDF
E-5	Date of final stage inspection	Date of completion of final stage inspection
E-6	Record of final stage inspection	PDF
E-7	Building Occupancy Certificate	PDF

Source: JICA Expert Team

e) Workflow of Operation of Permit Dataset System

The JICA Expert Team proposed the workflow of the operation of construction permit management system in the permit procedure as shown in Figure 4-14. The workflow shows the timing of data input in the entire period of the permit procedure at the permit stage and construction stage.



Source: JICA Expert Team

Figure 4-14: Workflow of Operation Construction Permit Dataset System in Permit Procedure

(2) Proposal of Institutional Improvement for Construction Permit Procedure

The JICA Expert Team proposed countermeasures for the strengthening of the construction permit procedure based on the analysis of operational and on-site issues in the current construction permit procedure. The summary of proposed countermeasure is shown in Table 4-6. Some countermeasures require revision of the Ministerial Decision on Construction Management and further coordination between DPWT and OPWT.

Table 4-6: Proposed Countermeasures for Strengthening of Construction Permit Procedure

Objective	Category	Proposed Countermeasure	Remarks
To promote citizen to apply permit	Dissemination/education	1. Distribute brochure and poster to explain objective and benefit of construction permit for citizen.	
	Application document	2. Provide PDF of application form through the VirGo.	
	Provide standard design for level 3 building	3. Share design data of standard house through the VirGo.	
	Fee for construction permit		4-1. Distribute list of permit fee and service fee for OPWTs and village offices.
4-2. Uniformization of service fee among districts.			Need coordinate among OPWT
To reduce obstruction to reservation area	Site area	5. Site Area Estimation Map as additional application document.	Need revise Ministerial Decision
	ROW of alley road	6. Define ROW of alley road.	Need define by C/P

Objective	Category	Proposed Countermeasure	Remarks
To identify illegal construction	Signboard	7. Add sample of signboard for level 3.	
To reduce load of administrative work	Middle-stage inspection	8. Clarify un-necessity for Level 3 construction.	Need revise Ministerial Decision

Source: JICA Expert Team

Detailed explanations of proposal No. 4-2 and No.5, which will be required discussions and adjustments within C/P in the future, are shown below. Since C/P can be handled by preparing data and list or by implementing procedures for other proposals, detailed explanations of other proposals are omitted here.

[Proposal No.4-2: Uniformization of Service Fee among Districts]

This proposal aims to encourage citizen to apply for the construction permit.

Applicant's fee burden for construction permits consists of two types of fees, i) permit fee and ii) technical service fee. The permit fee pricing is provided in the price list in Article 23 of the Presidential Decree on Technical Fees and Charges (No. 002, 2021). (see Figure 4-15) However, the technical service fee is determined based on the level of capacity to provide the technical services in each region. As a result, the technical service fee is different among district offices and is not disclosed with the price list for public.

In this proposal, district offices determine the common price of the technical service fee and publish the price list for the transparency of administrative work.

ລ/ດ	Type of construction	Fee (Kip)
01	ອາຄານເຮືອນພັກອາໄສ (ເອດເທດສະຍານເມືອງ:	
	- ເຮືອນໄມ້ ຫຼື ເຄິ່ງກໍ່ - ເຄິ່ງໄມ້	30.000
	- ເຮືອນກໍ່ແບບມາດຕະຖານ	50.000
	- ຕຶກແຖດ ຫຼື ອາຄານຊຸດ (ແສດ)	60.000
02	ອາຄານສະຖານທີ່ການສຶກສາ ຫຼື ສູນສາສະໜາ:	
	- ເຮືອນປ່າກະດັກ, ເຮືອນພັກພ່ອນ, ເຮືອນພັກສູ້ເຖົ້າ	50.000
	- ໂຮງຮຽນອະນຸບານ, ປະຖົມ ຫຼື ຄລິນິກ	70.000
	- ໂຮງຮຽນມັດທະຍົມ ຫຼື ໂຮງຮູ້	90.000
	- ສະຖາບັນສູນສູງ ຫຼື ມະຫາວິທະຍາໄລ	100.000
03	ອາຄານສຳນັກງານຂອງບໍລິສັດ ຫຼື ອົງການຕ່າງໆ:	
	- ເນື້ອທີ່ລວມສູນສູນ 500 ຕາແມັດລົງມາ	100.000
	- ເນື້ອທີ່ລວມສູນສູນຫລາຍກວ່າ 500 ຕາແມັດຂຶ້ນໄປ	150.000
04	ອາຄານກິລາ ຫລື ບັດທະນາສາ - ສັງຄົມ	
	- ອາຄານກິລາຫຼາຍປະເພດ	50.000
	- ຫໍວາງສະແດງ ຫລື ຫໍສະໝຸດ	70.000
	- ສະໂມສອນ, ສູນວັດທະນະທຳ ຫຼື ຫໍພິພາບ	90.000
	- ສູນປະຊຸມ, ໂຮງຮູບເງົາ ຫຼື ໂຮງລະຄອນ	150.000
05	ອາຄານການຄ້າ ຫລື ການບໍລິການ	
	- ສາງ, ສົນຄ້າ ຫລື ສົນອາຫານ ມີອອກກາງ	80.000
	- ເຮືອນສັບເຂກ ຫຼື ສົນອາຫານສະໜາດນ້ອຍ	100.000
	- ສູນການຄ້າ, ຫະນາຄານ ຫຼື ໂຮງແຮມ	150.000
06	ອາຄານສຳນັກງານ ຫລື ໂຮງງານອຸດສາຫະກຳ	
	- ອາຄານລົງສັດ ຫລື ປຸງແຕ່ງກະສິກຳຕ່າງໆ	50.000
	- ໂຮງຮາງຫັດຖະກຳ ຫຼື ໂຮງງານອຸດສາຫະກຳນ້ອຍ	50.000
	- ໂຮງຂີ້ເສັ້ນ ຫຼື ໂຮງງານອຸດສາຫະກຳຂະໜາດກາງ	100.000
07	- ໂຮງງານອຸດສາຫະກຳຂະໜາດໃຫຍ່	150.000
	- ສະຖານທີ່ຈອດລົດ, ສະຖານທີ່ຂົນສົ່ງ ແລະ ອື່ນໆ	
	- ລາຍຈອດລົດ ຫລື ສວມສາຍາລະນະ	70.000
	- ອາຄານຈອດລົດ ຫລື ສະຖານທີ່ຂົນສົ່ງ	100.000
08	ບໍານົກມັນ	
	- ຂະໜາດບັນຈຸ ແຕ່ 100.000 ລິດ ລົງມາ	100.000
	- ຂະໜາດບັນຈຸ ຫລາຍກວ່າ 100.000 ລິດ ຂຶ້ນໄປ	150.000
09	ການອອກໃບອະນຸຍາດຖິ່ນດິນ ເພື່ອປຸກສ້າງອາຄານປະເພດຕ່າງໆ:	
	- ບໍລິມາດຖິ່ນດິນ ແຕ່ 100 ແມັດກ້ອນ ລົງມາ	50.000 /ສະບັບ
	- ບໍລິມາດຖິ່ນດິນຫລາຍກວ່າ 100 - 250 ແມັດກ້ອນ	100.000/ສະບັບ
	- ບໍລິມາດຖິ່ນດິນ ຫລາຍກວ່າ 250 ແມັດກ້ອນ ຂຶ້ນໄປ	50.000/ສະບັບ
10	ການອອກໃບອະນຸຍາດເຮັດທາງເຂົ້າຕອນດິນ ຫລື ວາງທີ່ລະບາຍນ້ຳ	50.000 /ສະບັບ
11	ການອອກໃບອະນຸຍາດສັ່ມແປງ, ຕໍ່ເຕີມ, ຮັດຖອນ ຫຼື ເຄື່ອນຍ້າຍອາຄານ	100.000/ສະບັບ
12	ການອອກໃບອະນຸຍາດປຸງແປງຈຸດປະສົງໃນການນຳໃຊ້ອາຄານ	100.000/ສະບັບ
13	ການອອກໃບອະນຸຍາດກໍ່ສ້າງສະໜາມຈຳກັດຂີ້ເຫຍື້ອ	50.000/ສະບັບ
14	ການອອກໃບອະນຸຍາດກໍ່ສ້າງສະໜາມຈຳກັດອາຮົມ	50.000 /ສະບັບ
15	ການອອກໃບອະນຸຍາດ ຕັ້ງປ້າຍໂຄສະນາ	55.000/ສະບັບ

Source: Article 23 of the Presidential Decree on Technical Fees and Charges (No. 002, 2021)

Figure 4-15: Current Permit Fee for Construction Permit

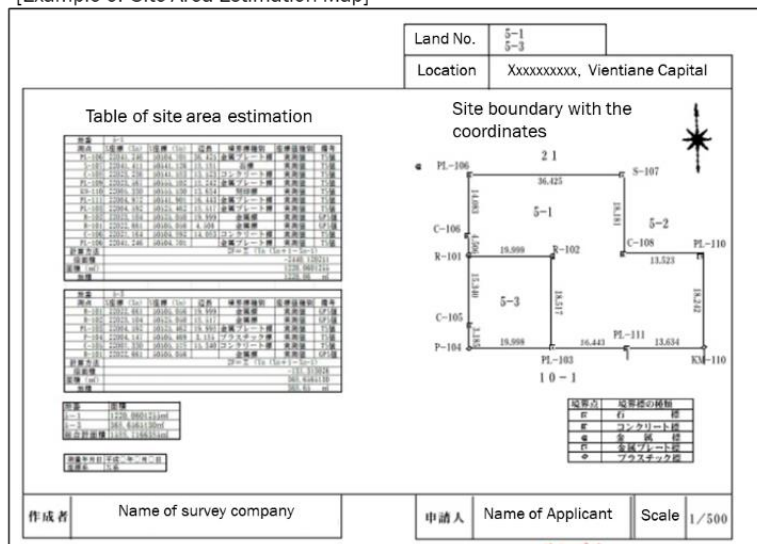
[Proposal No.5: Site Area Estimation Map as Additional Application Document]

This proposal aims to reduce construction which do not comply with the permitted design and obstruction to reservation area for road and canal.

In the current permit procedure, the applicant is required to submit the land title document of the construction site. However, the land title does not describe the coordinates of the land boundary. It is difficult to confirm the exact land boundary and building setback line in the construction site. This situation is one of the factors causing construction which do not comply with the permitted design and obstruction to reservation area.

In this proposal, the applicant is required to submit a map of the site area estimation to describe the boundary and the coordinates of the building site for confirmation of the site boundary and building setback line on the site. The example of site area estimation map is shown in Figure 4-16.

[Example of Site Area Estimation Map]



Source: JICA Expert Team

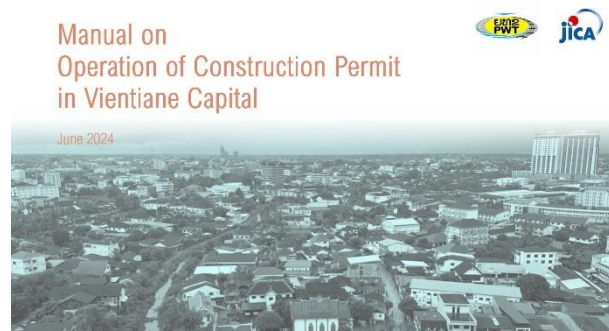
Figure 4-16: Proposal of Site Area Estimation Map as Additional Application Document

4.5 Formulation of Manual on Operation of Construction Permit

(1) Formulation of the Manual

The JICA Expert Team developed the draft manual on operation of construction permit in Vientiane Capital based on the analysis of the operation of the construction permit procedure, proposal of institutional improvement, and improvement of permit dataset system. The manual was developed as the provincial level manual to cover Vientiane Capital only.

The manual consists of two categories: i) construction permit procedure (from Chapters I to III) and ii) permit dataset operation (from Chapters IV to VI). The contents of the manual are shown in Table 4-7.



Source: JICA Expert Team

Figure 4-17: Cover Page of the Manual on Operation of Construction Permit

Table 4-7: Contents of Manual on Operation of Construction Permit

No	Items	Description
Chapter I. Introduction		
1-1	Background	<ul style="list-style-type: none"> • Overview of construction permit system in Laos • Activity of CDUDCP for improvement of construction permit
1-2	Objective of Manual	<ul style="list-style-type: none"> • Target user of manual • Outline of manual contents
Chapter II. Construction Permit System in Vientiane		
2-1	Legal Basis of Construction Permit	<ul style="list-style-type: none"> • Laws and regulations relating to construction permit
2-2	Outline of Construction Permit	<ul style="list-style-type: none"> • Type of Construction and Overall Process
2-3	Current Issues on Construction Permit	<ul style="list-style-type: none"> • Typical cases of current issue of construction permit
2-4	Benefit of Construction Permit for Citizen	<ul style="list-style-type: none"> • Objective and benefit of construction permit for citizen (secure human life, environment, accessibility. etc.)
Chapter III. Technical Guide for Construction Permit Procedure		
3-1	Outline of Technical Guide	<ul style="list-style-type: none"> • Outline of technical guide • Summary of proposal of countermeasure for strengthen of construction permit • Responsibility of applicants and PWT officers
3-2	Construction Permit Procedure and the Technical Guide	
(1)	Confirmation of Construction Conditions	Procedure including follows: <ul style="list-style-type: none"> • Virgo utilization to confirm land use plan and legal document
(2)	Preparation of Application Documents	Procedure including follows: <ul style="list-style-type: none"> • Site Area Estimation Map (include definition of Site Area) • Estimation of COS and E based on site area • Virgo utilization of data sharing of application form and design data of standard house • Definition of road reservation area • Permit fee and service fee
(3)	Submission of Application	
(4)	Review and Assessment	<ul style="list-style-type: none"> • Objective of site inspection • Checkpoints of site inspection • Form of check sheet for site inspection • Issuance of Permit Certificate
(5)	Issuance of Permit Certificate	
(6)	Inspection during Construction	<ul style="list-style-type: none"> • Objective of initial-stage inspection

No	Items	Description
		<ul style="list-style-type: none"> • Checkpoints of initial-stage inspection • Form of check sheet for initial-stage inspection
(7)	Middle-stage Inspection	<ul style="list-style-type: none"> • Objective of middle-stage inspection • Exclude Level 3 construction • Checkpoints of middle-stage inspection • Form of check sheet for middle-stage inspection
(8)	Issuance of Building Occupancy Certificate	<ul style="list-style-type: none"> • Objective of final inspection • Checkpoints of final inspection
(9)	Record Management	<ul style="list-style-type: none"> • Form of check sheet for final inspection • Procedure of utility connection • Issuance of Occupancy Certificate
Chapter IV. Outline of Construction Permit Dataset		
4-1	Objective of Construction Permit Dataset	<ul style="list-style-type: none"> • Objective and benefit of storing and utilization of digital data of construction permit
4-2	Persons in Charge of Permit Dataset Management	<ul style="list-style-type: none"> • Category of persons in charge. and the responsibility
4-3	System Structure	<ul style="list-style-type: none"> • Diagram of system structure in DPWT (describe connection among PC, intra-network, GIS dataset)
4-4	Outline of Construction Permit Dataset	<ul style="list-style-type: none"> • Outline of Dataset Structure
4-5	Folder & File Structure	<ul style="list-style-type: none"> • Folder & File Structure for Permit Dataset
4-6	Dataset Contents	<ul style="list-style-type: none"> • Contents for Permit Dataset
Chapter V. PC Set-up for Construction Permit Dataset		
5-1	Outline of PC Setup	<ul style="list-style-type: none"> • Outline of setting of Server PC and Client PC
5-2	Set-up Server PC (for file sharing)	<ul style="list-style-type: none"> • Methodology of set-up for Server PC
5-3	Set-up Client PC (for file sharing)	<ul style="list-style-type: none"> • Methodology of set-up for Client PC
5-4	Data back-up	<ul style="list-style-type: none"> • Methodology and frequency of data back-up
Chapter VI. Operation of Construction Permit Dataset		
6-1	Workflow of the Operation in Permit Procedure	<ul style="list-style-type: none"> • Timing and input data in Construction Permit Procedure
6-2	Access to Permit Dataset from Client PC	<ul style="list-style-type: none"> • Method to access from Client PC to server PC of Construction Permit Dataset in DPWT
6-3	Data Input - 1st Stage	<ul style="list-style-type: none"> • Method of data input in 1st stage (Issuance of Application ID)
6-4	Data Input - 2nd Stage	<ul style="list-style-type: none"> • Method of data input in 2nd stage (Issuance of Permit Certificate)
6-5	Data Input - 3rd to 5th Stages	<ul style="list-style-type: none"> • Method of data input in 3rd to 5th stages (Initial-stage inspection to final inspection)
6-6	Data Utilization	<ul style="list-style-type: none"> • Methodology of data analysis, data expert and visualization data export for monitoring, reporting, policy making
Appendix		
(1)	Code Tables for Permit Dataset	<ul style="list-style-type: none"> • Code Tables for Provinces, District in Vientiane, Villages in Vientiane, • Purpose of construction, level of construction and land use zone category

Source: JICA Expert Team

(2) Officialization of the Manual

The manual has been finalized through the discussion with DPWT. The final version was presented in the meeting with DPWT which was held on June 27, 2024.

Regarding the officialization procedure, the JICA Expert Team confirmed with the DHUP that the manual can be approved by the DG of DPWT as a provincial level manual.

The manual has been consulted with DD of DHUP on June 17, 2024, regarding the approval procedures. As the manual pertains to Vientiane Capital, the advice was received that approval could be obtained from the Director of DPWT, and MoM was exchanged on the same day regarding this advice.

Based on the above MoM, on July 8, 2024, the draft of the Manual on Operation of Construction Permit

and the approval documents have been submitted to DPWT. The manual was reviewed by the Division of Housing and Urban Planning of DPWT and approved by Director General of DPWT on 26 July 2024.

4.6 Training and Seminar on Construction Permit

For the activity on the permit dataset improvement and proposal of institutional improvement, small seminars and training session for DPWT and OPWT have been conducted by the JICA Expert Team. The summary of the small seminars and trainings is shown in Table 4-8.

Table 4-8: Summary of Small Seminars and Trainings on Construction Permit

No.	Date	Category	Agenda	Points and Result of Session
#1	June 8, 2023	Meeting with DPWT	<ul style="list-style-type: none"> Discussion with DPWT on the improvement of current permit dataset 	<ul style="list-style-type: none"> Proposed objective of the improvement was confirmed
#2	Jun. 19	Network setup	<ul style="list-style-type: none"> Set up internal network in DPWT 	<ul style="list-style-type: none"> Internal network in Urban Planning Division of DPWT was setup. Desktop PC, which has GIS dataset of construction permit was connected to the internal network system.
#3	Aug. 30	Small seminar	<ul style="list-style-type: none"> Discussion on the concept of improvement of permit dataset and the activity schedule 	<ul style="list-style-type: none"> Concept of dataset and additional data item were confirmed. Activity schedule was confirmed.
#4	Jan. 16, 2024	Training	<ul style="list-style-type: none"> Discussion with DPWT on detail contents of improvement of improved permit dataset system 	<ul style="list-style-type: none"> Additional improvement of dataset was confirmed.
#5	Feb. 1	Training	<ul style="list-style-type: none"> Training on operation of improved permit dataset system for Urban Planning Division of DPWT 	<ul style="list-style-type: none"> Operation skill was transferred to multiple staffs in DPWT.
#6	Mar. 29	Small seminar	<ul style="list-style-type: none"> Discuss with DPWT on current institutional issue in permit procedure 	<ul style="list-style-type: none"> Situation of issues and the factors were confirmed.
#7	Apr. 24	Training	<ul style="list-style-type: none"> Training on Arc GIS operation for permit dataset system for DPWT 	<ul style="list-style-type: none"> Operation skill of Arc GIS was enhanced among multiple staffs of DPWT.
#8	May 17	Small seminar	<ul style="list-style-type: none"> Discuss with DPWT on draft manual on operation of construction permit 	<ul style="list-style-type: none"> Improvement of permit procedure was discussed. Necessity of officialization of manual was confirmed

Source: JICA Expert Team

4.7 Implementation of On-the-Job Training (OJT)

After the training session for the operation of permit dataset held on February 1, 2024, on-the-job training (OJT) to operate construction permit dataset was started at DPWT. For the daily technical assistance and monitoring, DPWT provided a desk for the JICA Expert Team in their office.

During the OJT, the JICA Expert Team provided two laptop PCs due to the low capacity of some existing PCs at DPWT for ArcGIS operations. In addition, the JICA Expert Team conducted the training session

for basic operation skill of ArcGIS for GIS beginner staffs in DPWT on April 24, 2024.

4.8 Dissemination of Construction Permit

(1) Dissemination of Construction Permit

The 6th Urban Management Platform (UMP) for the dissemination of construction permit was held in six districts in Vientiane Capital for five days from January 22 to 25 and on February 6, 2024 by the C/Ps with the support of the JICA Long-term Experts. The objectives of the 6th UMP are as follows:

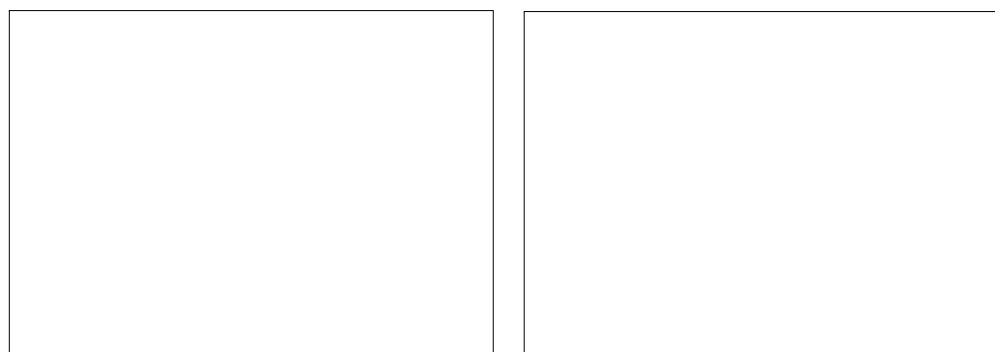
- To introduce GUP and construction permit system for urban safety.
- To introduce the Building Code for building safety.
- To deepen understanding of comfortable and safe urban development in Vientiane Capital by knowing the rules of construction.

For the 6th UMP, in order to disseminate construction permit system and building code on formulating, videos with messages from Directors of C/P's division and instruction of construction permit procedures on-site were introduced to the participants (see Figure 4-18). The number of participants is summarized as shown in Table 4-9.

Table 4-9: Number of Participant in the 6th UMP

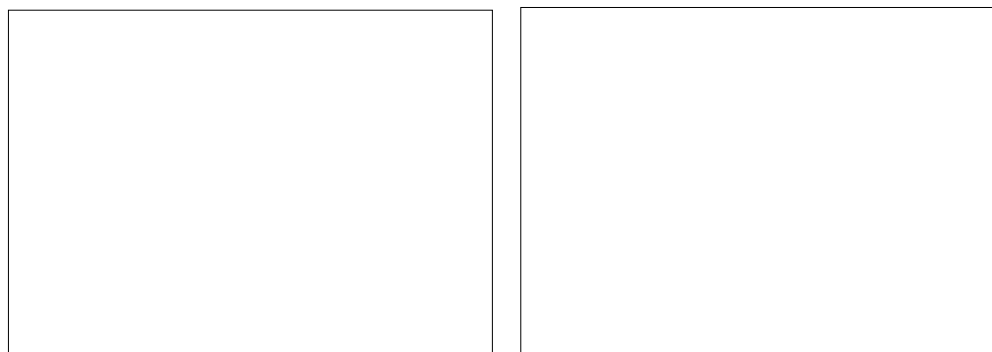
Date	District	Number of Participants			
		District Officer	OPWT	Village	Total
22 Jan. 2024	Xaythany	4	6	28	38
23 Jan. 2024	Xaysettha	7	5	34	46
24 Jan. 2024	Chanthabuly	1	6	31	38
25 Jan. 2024	Sisattanak	9	6	27	42
Ditto	Naxaythong	1	9	23	33
6 Feb. 2024	Sikottabong	8	9	69	86
	Total	30	41	212	283

Source: JICA Long-term Experts



Source: JICA Expert Team

Figure 4-18: Scenes of Development of Promotion Video on Construction Permit



Source: JICA Long-term Experts

Figure 4-19: Photos of the 6th UMP

(2) Dissemination of Data and Information Relating to Construction Permit

By using VirGo, data and information related to construction permits were released to the public. The published data and information are as follows:

- Land use zoning map of General Urban Plan of Vientiane Capital.
- List and map of road reservation area.
- Laws and regulations: Law of Construction, Ministerial Decision on Construction Management, Law on Urban Plan, Law on Environmental Protection, Law on Investment Promotion, Law on Land.
- Official permit request forms.

4.9 Capacity Development through the Activities of Output 2

Through the activities of Output 2, capacity enhancement of C/Ps on the operation of construction permits was achieved as shown in Table 4-10.

Table 4-10: Achievement of Capacity Enhancement through Activity of Output 2

Category of Activity	Capacity Enhancement of C/Ps
Improvement of Data Management	<ul style="list-style-type: none"> • Understanding of importance of digitalization of administrative work • Operation skill for Arc-GIS application • Understanding of system structure of Construction Permit Dataset System • Operation skill for Construction Permit Dataset System
Institutional Improvement	<ul style="list-style-type: none"> • Understanding of issues on current permit procedure • Understanding countermeasures for illegal construction • Utilization of GIS-PF for data sharing for applicant of permit • Clarify necessary action for legalization of proposed improvement
Manual Formulation	<ul style="list-style-type: none"> • Understanding proposed countermeasures in construction permit procedure • Understanding utilization of Construction Permit Dataset System in construction permit procedure
Dissemination	<ul style="list-style-type: none"> • Published official information (land use plan, legal documents) through VirGo • Common understanding of issues on construction permit • Understanding benefit of construction permit for citizen

Source: JICA Expert Team

Chapter 5. Achievement of Output 3

5.1 Summary

(1) Objective of Output 3

The activity of Output 3 aims that the capacity to promote urban development projects is enhanced.

The Output 3 primary support to develop the planning mechanism, discussed by the UMP, to create a vision for the area with active involvement from local residents and concerned private sectors.

In addition, the Output 3 secondary aims to propose mechanism of collaborative urban development project involving citizens and private business operators based on the Area Concept Plan. It aims to discuss the roles between the public and private sectors, including citizens, establish mechanisms of collaboration, and outline the proposed schemes and procedures necessary for the realization of these ideas.

(2) Activity and Achievement of Output 3

The summary of achievement of Output 3 activities is shown in Table 5-1.

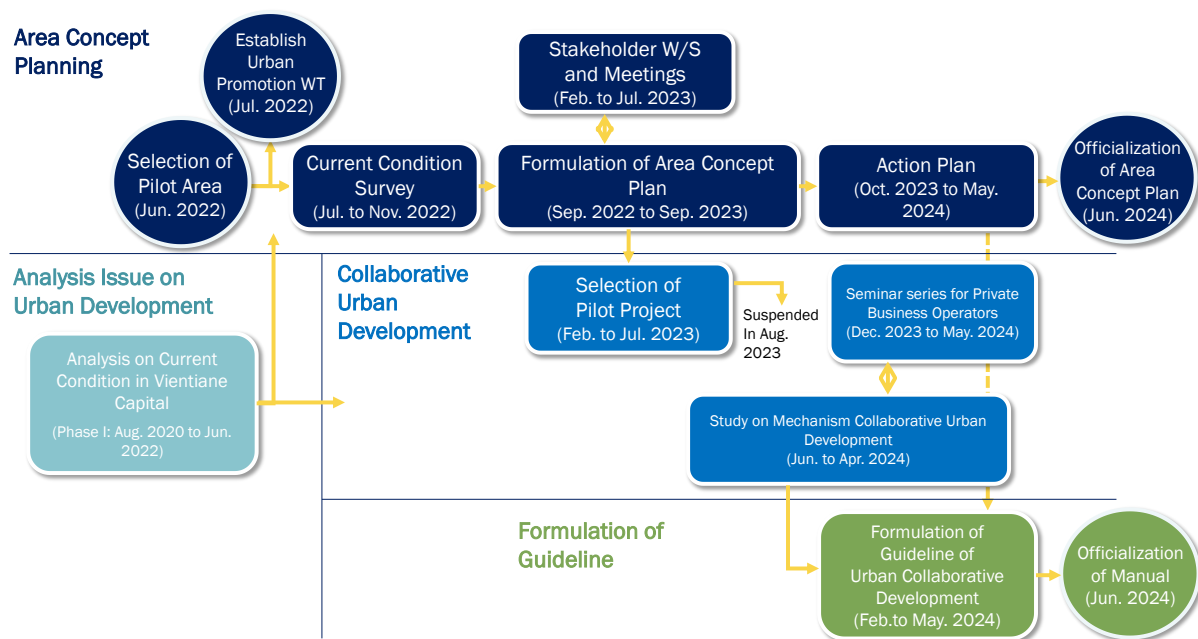
Table 5-1: Summary of Achievement of Output 3

Activities and Work Items	Results of Activities
3.1 To analyze current condition and situation of urban development projects in terms of the legal, financial, and implementation structure aspects in Vientiane	<ul style="list-style-type: none"> Completed in the phase 1.
3.2 To discuss the scope of model planning for promoting urban collaborative development projects	<ul style="list-style-type: none"> The scope of model planning was discussed and confirmed through the Urban WG and UP-WT.
3.3 To select a target area of model planning	<ul style="list-style-type: none"> Target area of model planning was selected in the 2nd JCC.
3.4 To conduct basic study and survey of pilot area	<ul style="list-style-type: none"> Topographical mapping and current condition survey for target area was completed.
3.5 To hold workshops for participatory planning and technical meetings with stakeholders	<ul style="list-style-type: none"> Stakeholder workshops and meeting were held seven times to discuss the Area Concept Plan.
3.6 To formulate Area Plan for target area	<ul style="list-style-type: none"> The Area Concept Plan was formulated and agreed by C/P.
3.7 To select the priority urban collaborative development projects for detail study and planning for priority activities based on the Area Plan	<ul style="list-style-type: none"> The pilot project was discussed, however, it was determined that it would be difficult to complete the implementation during the project period, and it was decided not to implement the pilot project without starting the project. This suspension of implementation was a consensus in the 3rd JCC meeting in August 2023. Pilot survey was conducted to collect market needs for collaborative urban development and to formulate assumed project scheme.
3.8 To have stakeholders meeting including community or private sectors on urban collaborative development projects by local government and private sector or community which are proposed as priority activities	<ul style="list-style-type: none"> Stakeholder seminar on collaborative urban development involving related agency and private business operator was held 2 times.
3.9 To formulate suggestions and guidelines for promoting urban collaborative development projects	<ul style="list-style-type: none"> Draft guideline for promotion of collaborative urban development was formulated. The guideline was approved by DG of DPWT on 26 July 2024.

Source: JICA Expert Team

(3) Overview of Activity of Output 3

Figure 5-1 shows the overall activity of area concept planning and issue analysis on urban development. The subcontract works for the current condition survey and topographical map formulation under the formulation of the Area Concept Plan were conducted from August 1 to November 15, 2022, and from July 25 to September 23, 2022, respectively. The formalization of the Area Concept Plan was consulted with Deputy Director of DHUP on June 17, 2024, and was received advice that the MoM signed by the directors of the C/Ps would be valid. The MoM regarding this advice was exchanged on the same day. Based on the above MoM, the MoM for the director’s agreement was drafted and submitted to DHUP on July 8, 2024, and the MoM was approved in August 2024 with signatures of the Director Generals of each C/P. regarding urban collaborative development, the pilot project was discontinued in August 2023, and a study was conducted to examine the business scheme, etc. as a summary of the results of the study, a guideline of urban collaborative development was formulated. The approval process for the guideline was initiated by DPWT in June 2024, and it was approved on July 26, 2024.



Source: JICA Expert Team

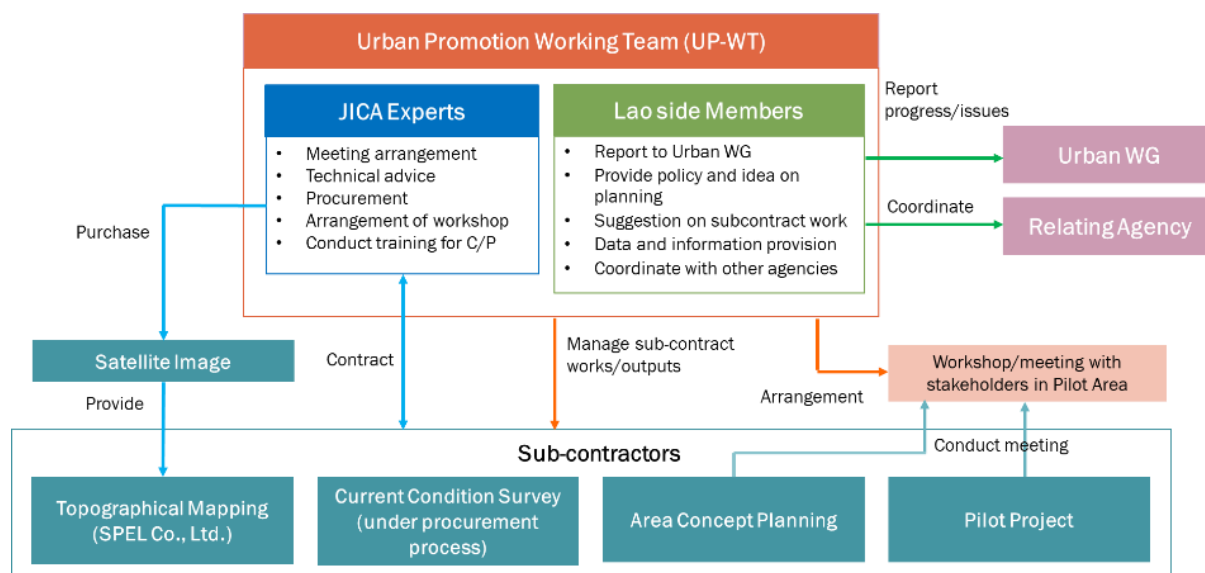
Figure 5-1: Overview of Activity of Output 3

5.2 Urban Promotion Working Team (UP-WT)

(1) Outline of UP-WT

For the effective and sustainable capacity development on the survey and study of the pilot area, the JICA Expert Team proposed to establish the Urban Promotion Working Team (UP-WT), which consists of technical staffs of C/Ps. The implementation structure is shown in Figure 5-2. Based on the proposal,

the Lao side assigned eight technical staffs from the DHUP, PTI, and DPWT as members. In addition, the JICA Expert Team proposed to invite the OPWT of Xaysetta District, where the pilot area is located, and the Urban WG agreed to the proposal. The 1st UP-WT meeting was held on July 29, 2022, to confirm objective and activities of the UP-WT. The members list of the UP-WT is shown in Table 5-2.



Source: JICA Expert Team

Figure 5-2: Implementation Structure of UP-WT for Survey and Study of Pilot Area

Table 5-2: Members List of Urban Promotion Working Team

Organization	Full Name		Position
PTI	1	Mr. Somchit CHERSUANTHOR, Technical staff	Leader
	2	Mr. Bounpone SISAVATH, Technical staff	
	3	Mr. Sinakhone DUANGPANYA, Technical staff	
DHUP	1	Mr. Vasaly SISAVATH, Technical staff, Division of Urban Planning	Co-leader and Coordinator
	2	Mr. Sulikorn XAYXANA, Technical staff, Division of Urban Planning	
	3	Mr. Phayboun SOUNAKEN, Technical staff, Division of Construction Control	
DPWT	1	Mr. Sonepaseuth PHOTHISA, Technical staff, Division of Housing and Urban Planning	
	2	Mr. Vientihane BANTHONGXAY, Technical staff, Division of Housing and Urban Planning	
OPWT of Xaysetta	1	Mr. Desa PHOMMASAK, Deputy Director	

Source: JICA Expert Team

The UP-WT meetings were held to discuss the activity plan, schedule, and study and planning. The agenda and discussion points of each UP-WT meeting are summarized as shown in Table 5-3.

Table 5-3: UP-WT Agenda and Discussion Points

No.	Date	Agenda	Points and Result of Discussion
#1	July 29, 2022	<ul style="list-style-type: none"> • Kick-off of UP-WT • Activity plan and current condition of pilot area • Work plan for topographic survey • Brainstorming for the pilot project 	<ul style="list-style-type: none"> • Introduction of the members • Confirmed activity plan and current condition of pilot area • Discussed idea of pilot projects
#2	August 11	<ul style="list-style-type: none"> • Site visit for pilot area • Discuss with village leader 	<ul style="list-style-type: none"> • Confirmed current situation of pilot site
#3	August 12	<ul style="list-style-type: none"> • Discuss with Lao Thai Railway Enterprise 	<ul style="list-style-type: none"> • Introduced CDUDCP and Railway project • Discussed on station area development
#4	August 30	<ul style="list-style-type: none"> • Report of topo survey and site visit • Brainstorming for area concept planning 	<ul style="list-style-type: none"> • Confirmed current progress • Confirmed activity for area concept planning
#5	September 7	<ul style="list-style-type: none"> • Report of topo survey and site visit • Case study of urban development promotion in Japan 	<ul style="list-style-type: none"> • Confirmed current progress • Understood role of government for urban development promotion
#6	October 6	<ul style="list-style-type: none"> • Report of outputs of topo survey • Report progress of current condition survey 	<ul style="list-style-type: none"> • Confirmed outputs and current progress
#7	October 20	<ul style="list-style-type: none"> • Report progress of current condition survey 	<ul style="list-style-type: none"> • Confirmed current progress
#8	November 14	<ul style="list-style-type: none"> • Report progress of current condition survey 	<ul style="list-style-type: none"> • Confirmed current progress
#9	December 19	<ul style="list-style-type: none"> • Progress and schedule of area concept planning • Discuss on draft vision of pilot area 	<ul style="list-style-type: none"> • Confirmed current progress and schedule • Understood draft vision
#10	February 9, 2023	<ul style="list-style-type: none"> • Confirmation of meeting preparation for community WS in pilot area • Discussion on person in charge and materials for community WS 	<ul style="list-style-type: none"> • Confirmed agenda, material and person in charge for community WS
#11	March 30	<ul style="list-style-type: none"> • Draft of pilot project scheme • Report of questionnaire survey for community WS in the pilot area • Draft of urban structure plan of the pilot area 	<ul style="list-style-type: none"> • Confirmed current progress and schedule • Confirmed result of questionnaire survey • Discussed on draft vision urban structure plan.
#12	April 28	<ul style="list-style-type: none"> • Preparation of second Community WS • Preparation of interview with private business operators for pilot project 	<ul style="list-style-type: none"> • Confirmed agenda, participant list and materials of second stakeholder workshop • Discussed on interview survey
#13	June 2	<ul style="list-style-type: none"> • Preparation of consultation meeting with villages and third Community WS • Preparation for pilot project 	<ul style="list-style-type: none"> • Confirmed date and agenda of consultation meeting and third stakeholder workshop • Discussed project scheme of pilot project
#14	June 12	<ul style="list-style-type: none"> • Preparation of consultation meeting with villages • Preparation for pilot project 	<ul style="list-style-type: none"> • Confirmed agenda, participant list, and materials of the consultation meeting
#15	July 14	<ul style="list-style-type: none"> • Preparation of third stakeholder workshop 	<ul style="list-style-type: none"> • Confirmed agenda, participant list and materials of third stakeholder workshop
#16	October 19	<ul style="list-style-type: none"> • Proposed activity plan of pilot survey • Introduction of questionnaire survey • Introduction of priority projects based on the Area Concep Plan. 	<ul style="list-style-type: none"> • Confirmed the pilot activity, contents of questionnaire survey, progress of selection of priority projects.
#17	December 11	<ul style="list-style-type: none"> • Preparation of 1st Collaborative Urban Development Seminar 	<ul style="list-style-type: none"> • Confirmed agenda, participant list, and materials of the seminar.
#18	February 15, 2024	<ul style="list-style-type: none"> • The process of the project identification • The progress of the pilot survey • Introduction of the contents of the seminar 	<ul style="list-style-type: none"> • Confirmed the progress of project identification and pilot survey • Confirmed points of discussion in the 2nd Seminar and necessary updating of the

No.	Date	Agenda	Points and Result of Discussion
			materials
#19	April 8	<ul style="list-style-type: none"> Project identification of area concept plan Result of 2nd seminar 	<ul style="list-style-type: none"> Confirmed result of project identification Confirmed seminar participant's comment to collaborative urban development
#20	May 7	<ul style="list-style-type: none"> Business scheme of collaborative urban development Implementation structure in the government for collaborative urban development Purpose of the guideline 	<ul style="list-style-type: none"> Confirmed basic scheme of collaborative urban development and purpose of the guideline

Source: JICA Expert Team

(2) Stakeholder Workshop and Consultation Meeting

The UP-WT held stakeholder workshops and consultation meetings for the Area Concept Plan with the support of the JICA Expert Team. The outline of the workshops and meetings is shown in Table 5-4.

Table 5-4: Stakeholder Workshop and Consultation Meeting in the Pilot Area

Date	WS/Meeting	Agenda	Points and Result of Discussion
February 14, 2023	1st Stakeholder Workshop	<ul style="list-style-type: none"> Orientation of Workshop Objective of JICA CDUDCP and Area Concept Plan Activity Current Condition of Pilot Area Orientation for Questionnaire Sheet 	<ul style="list-style-type: none"> Conducted by the sticky notes session and summarized good/favourable points and issue/dissatisfied points in land use and infrastructure. Collected opinions for future urbanization and land use.
May 9, 2023	2nd Stakeholder Workshop	<ul style="list-style-type: none"> To understand the current situation and result of community opinion survey in the pilot area To develop draft of the Vision and Area Concept Plan of the pilot area. Participants: 16 representatives from four villages. 	<ul style="list-style-type: none"> Developed draft of vision and urban structure plan through the group work session.
June 15, 2023	Consultation Meeting with Villages	<ul style="list-style-type: none"> Present the draft Vision and updated Area Concept Plan based on the result of the 2nd stakeholder meeting. Participants: eight representatives from four villages. 	<ul style="list-style-type: none"> Reached consensus on draft of Area Concept Plan with representatives of community.
June 21-22, 2023	Field Survey with Villages	<ul style="list-style-type: none"> Interviews with village representatives to invite the landowners for the next stakeholder meeting and discuss the Area Concept Plan. 	<ul style="list-style-type: none"> Verified (rough) village boundary by the Lao side in the area. Survey report
June 30, 2023	Stakeholder Meeting (DoR and DoT of DPWT)	<ul style="list-style-type: none"> Present the draft Vision and Area Concept Plan. 	<ul style="list-style-type: none"> Confirmed draft of vision and area concept plan with DoR and DoT.
July 12, 2023	Stakeholder Meeting (Lao National Railway Enterprise)	<ul style="list-style-type: none"> Present the draft Vision and Area Concept Plan. 	<ul style="list-style-type: none"> Confirmed draft of vision and area concept plan with Lao National Railway Enterprise
July 24, 2023	3rd Stakeholder Workshop	<ul style="list-style-type: none"> Discuss with stakeholders the draft Area Concept Plan in the pilot area. 	<ul style="list-style-type: none"> Confirmed draft of vision and area concept plan with community,

Date	WS/Meeting	Agenda	Points and Result of Discussion
		<ul style="list-style-type: none"> • Participants: <ul style="list-style-type: none"> - Five representatives from four villages - Three landowners in the pilot site - Two business operators in the pilot site - Lao National Railway Enterprise - Division of Road, Division of Transportation of DPWT - Divisions of Xaysettha District (Natural Resource, Investment, Agriculture) 	landowners, and related agencies.

Source: JICA Expert Team

5.3 Formulation of Area Concept Plan

(1) Site Selection for Area Concept Plan

a) Selection Process and Candidate Sites

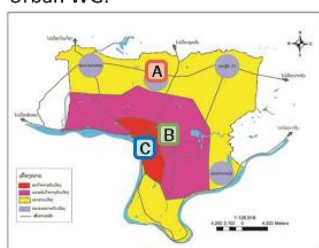
Based on the proposal of three candidates from the Lao side in the 6th and 7th Urban WG, the JICA Expert Team conducted the selection activities through the Urban WG. The selection process is shown in Figure 5-3 and proposed three candidate sites are shown in Figure 5-4.



Source: JICA Expert Team

Figure 5-3: Selection Process for a Target Area of Model Planning

3 Candidate Sites were proposed by DHUP, PTRI and DPWT in Urban WG.



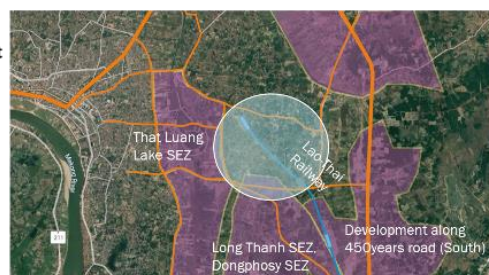
Candidate A:
Dongdog Area



Candidate C: Area along Khu Vieng Street



Candidate B:
Adjacent of That Luang Lake SEZ



Source: JICA Expert Team

Figure 5-4: Candidate Sites of Model Planning Proposed by the Lao Side

b) Preparation of Evaluation Criteria

The JICA Expert Team proposed the evaluation criteria with 20 items (an item was added through discussion) in the 12th Urban WG based on the key perspectives discussed with the JICA Long-term Experts and the Lao side in the 9th Urban WG. The proposed criteria are shown in Table 5-5.

Table 5-5: Proposed Criteria for Selection of Target Area of Model Planning

Item	Viewpoint of Analysis	Criteria		
		A (Higher)	B (Fair)	C (Lower)
1. Consistency with Urban Plan				
1-1. Upper-level policy of the development	The area locates at zone where central/local government's officially designated to be developed/improved	In designated area	Close to designated area	No designated
1-2. Relationship to other public projects	The area development will support/encourage public sector initiating project (e.g. trunk road, public transport)	Directly support	Indirectly support	No relationship
1-3. Status in urban plan	The area is designated as promotion zone for development/improvement in land use plan under General Urban Plan/Detailed Urban Plan	Promotion zone	Mixed with promotion/control zone	Development is prohibited
2. Environment and Facility				
2-1. Topographical condition	Easiness of the development from the topographical situation (e.g. flat land, hilly area, swamp, river, canal)	Easy	Fair	Difficult
2-2. Convenience	Existence of public convenience facility in the area and the surroundings (e.g. hospital, school, public service office)	Enough facility	Fair	Less facility
2-3. Utility Accessibility	Accessibility to technical infrastructure (e.g. water supply, sewerage, electricity)	Available	Fair	Less accessibility
3. Transport Accessibility				
3-1. Road Connectivity	Connectivity with trunk road, and condition of road network in the area (e.g. width, pavement)	High connectivity	Fair	Less connectivity
3-2. Accessibility to public transportation	Close to station of public transportation (e.g. BRT, bus, railway)	Connected	Not connected, but close	Not connected
3-3. Availability of walking space	Existence of pedestrian way, open space	Available	Fair	Less availability
4. Development Potential				

Item	Viewpoint of Analysis	Criteria		
		A (Higher)	B (Fair)	C (Lower)
4-1. Population increases	Population increase ratio last 10 years in the village/district where the area locates	Higher Increase	Fair	Lower Increase
4-2. Building activity	Number of construction permission last 5 years in the village/district where the area locates	High number of activities	Fair	Less activity
4-3. Developable land	Existence of developable land (e.g. vacant land, brown field, low-used land)	Many	Fair	Less
5. Risk				
5-1. Environmental risk	Easiness to control environmental risks (e.g. disaster risk, safe /security issue, social conflict)	Less risk	Fair	High risk
6. Operations Feasibility/ sustainability				
6-1. Willingness of private sector	Community's ownership and willingness to the project participation (e.g. residents, village authority, private company)	Higher	Fair	Lower
6-2. Potential of collaborative activity	Possibility of collaboration with other public/private projects/programs	Higher	Fair	Lower
6-3. Impact	Expectation of positive impacts to urban environment in the area and the surroundings	Higher	Fair	Lower
7. Effectiveness for Capacity Building				
7-1. Capacity building on planning	Expectation of improvement of planning technique of public sector through the activity for pilot area	Higher	Fair	Lower
7-2. Capacity building on stakeholder coordination	Expectation of improvement of coordination among public agencies through the activity for pilot area	Higher	Fair	Lower
7-3. Capacity building on consensus building	Expectation of improvement of skill for consensus building of community through the activity for pilot area	Higher	Fair	Lower
7-4. Possibility of management by C/P	Possibility of control/management of planning and implementation by DHUP, PTI and DPWT	Possible	Fair	Difficult

Source: JICA Expert Team

c) Conducting Field Survey and Questionnaire Survey to Village Leaders

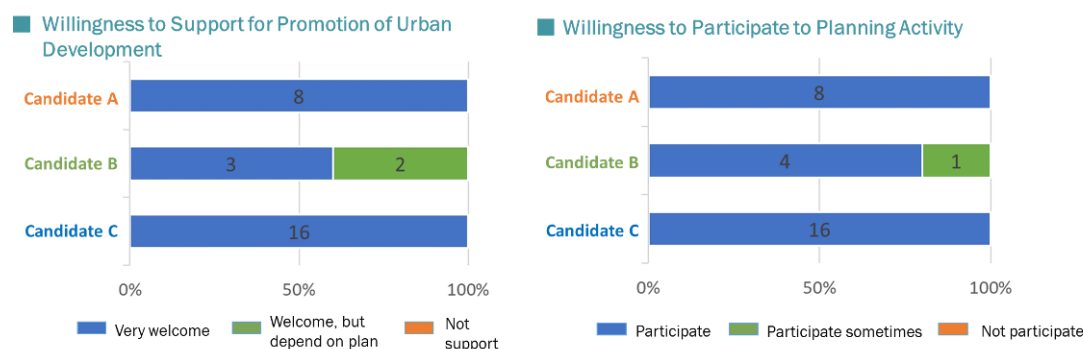
The Urban WG members visited the three candidate sites for the field survey on March 22, 2022. 11 members of the C/P and two JICA Long-term Experts joined the survey, while an additional JICA expert joined on-line.

Table 5-6: Field Survey in Three Candidate Sites

Candidate A: Dongdog Area	Candidate B: Adjacent of That Luang Lake SEZ	Candidate C: Area along Khu Vieng Street
		
		

Source: JICA Long-term Experts

The JICA Expert Team conducted questionnaire survey to 29 village leaders in the three candidate sites to research their concerns and willingness regarding urban development planning. As a result of the survey, it was confirmed that all villages have willingness to support urban development and participate in the planning activities.



Source: JICA Expert Team

Figure 5-5: Result of Questionnaires Survey to Village Leaders in Candidate Sites

d) Data Analysis and Evaluation of Candidate Sites

The JICA Expert Team conducted data analysis and evaluation of three candidates based on the proposed criteria. In addition, the JICA Expert Team collected opinion sheets from all Working Group (WG) members to figure out each member's preferred candidate, their reason, and expected capacity development. Through the discussion in the Urban WG, it was determined that Candidate B, adjacent to the That Luang Lake SEZ in Xaysetta District would be the target area for model planning. The results of the evaluation are presented in Table 5-7.

Table 5-7: Result of Evaluation of Candidate Sites

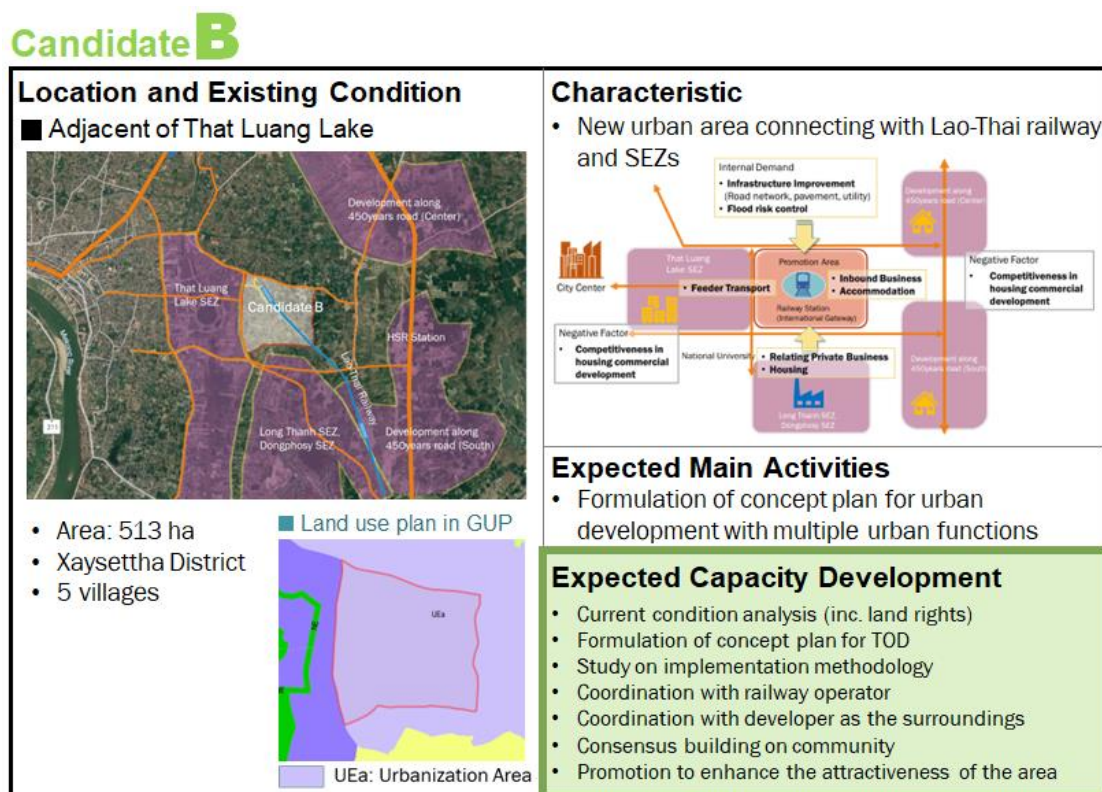
Item	Candidate A: Dongdog Area	Candidate B: Adjacent of That Luang Lake	Candidate C: Along the Khu Vieng Road
1. Consistency with Urban Plan			
1-1. Upper-level policy of the development	A	B	B
1-2. Relationship to other public projects	B	A	B
1-3. Status in urban plan	B	A	B+
2. Environment and Facility			
2-1. Topographical condition	B	B+	A
2-2. Convenience	B	C	A
2-3. Utility Accessibility	C+	C+	A
3. Transport Accessibility			
3-1. Road Connectivity	B	B	A
3-2. Accessibility to public transportation	B	B+	A
3-3. Availability of walking space	C	C	B
4. Development Potential			
4-1. Population increases	A	B	B
4-2. Building activity	C	B	A
4-3. Developable land	A	A	C
5. Risk			
5-1. Environmental risk	C	C	A

Item	Candidate A: Dongdog Area	Candidate B: Adjacent of That Luang Lake	Candidate C: Along the Khu Vieng Road
6. Operations Feasibility/ sustainability			
6-1. Willingness of private sector (Village Leader)	A (Higher)	A (Higher)	A (Higher)
6-2. Potential of collaborative activity	A (Higher)	A (Higher)	B (Fair)
6-3. Impact	B (Fair)	A (Higher)	B (Fair)
7. Effectiveness for Capacity Building			
7-1. Capacity building on planning	B (Fair)	A (Higher)	B (Fair)
7-2. Capacity building on stakeholder coordination	A (Higher)	A (Higher)	B+ (Fair)
7-3. Capacity building on consensus building	A (Higher)	A (Higher)	B (Fair)
7-4. Possibility of management by C/P	B (Fair)	B+ (Fair)	B+ (Fair)
Result of Evaluation	A: 7 B+: 0	A: 9 B+: 3	A: 8 B+: 3

Source: JICA Expert Team

e) Consultation with Vice Mayor of Vientiane Capital

Based on the determination of the Urban WG on site selection, representatives of Urban WG reported the result of evaluation to the Vice Mayor of Vientiane Capital and received his agreement. Finally, the target site was approved by the 2nd JCC. The characteristics of the selected target area are shown in Figure 5-6.



Source: JICA Expert Team (based on presentation material by Ms. Yamamoto (JICA Long-term Expert) at 15th Urban WG)

Figure 5-6: Characteristics of Selected Target Area (Candidate B)

(2) Topographical Map of Model Area

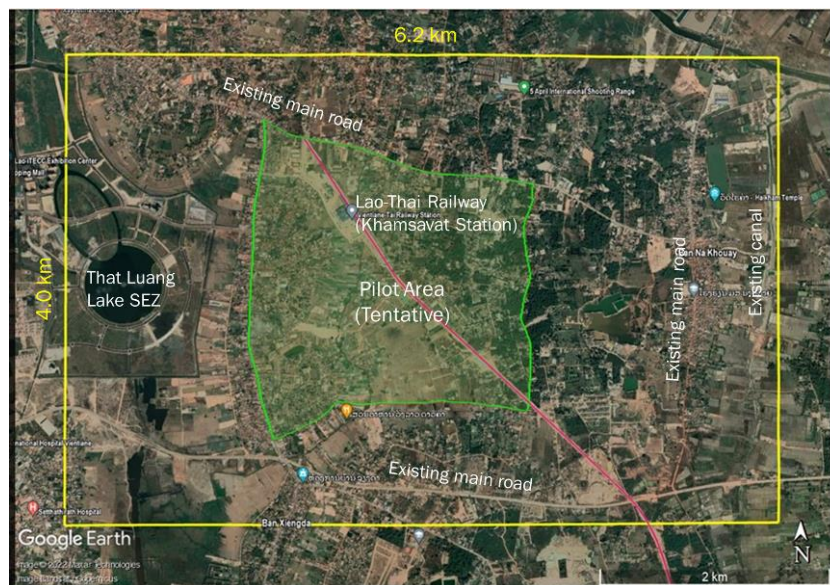
a) Purchasing Satellite Image and DEM Data

The JICA Expert Team purchased the satellite images and digital elevation model (DEM) data for the development of topographical maps and basic data of current condition survey. The specifications of the purchased data are shown in Table 5-8, and the coverage area of the data is shown in Figure 5-7. The satellite image data were delivered after correction using ground control points (GCP) surveyed as part of the subcontract work for topographical mapping. The image of the purchased data is shown in Figure 5-8.

Table 5-8: Specifications of Satellite Image

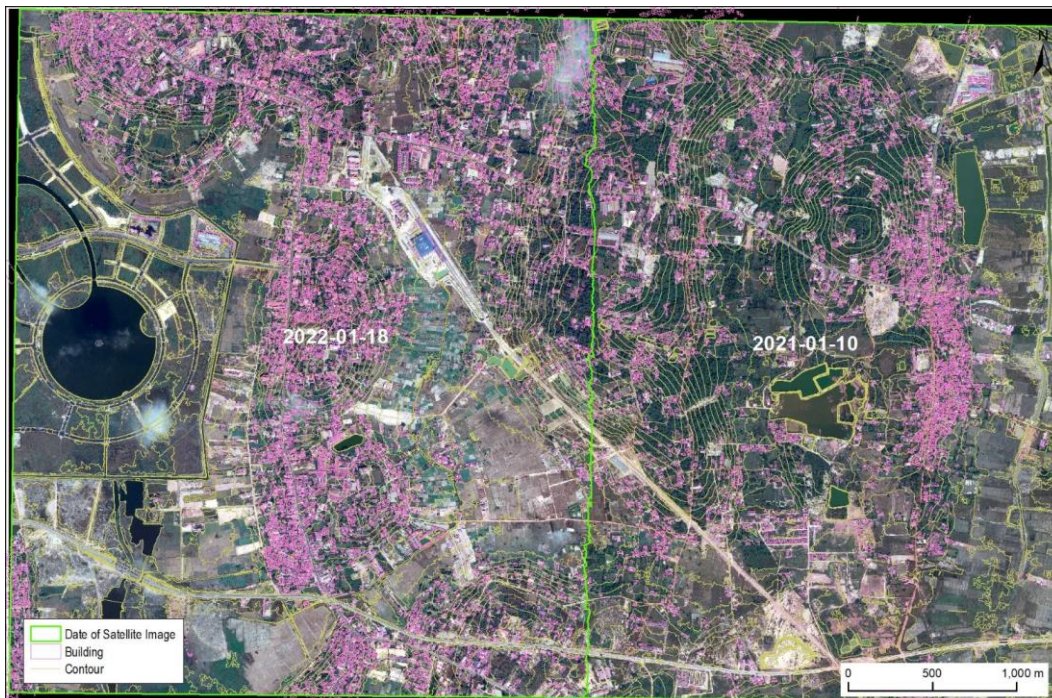
Data Item	Specification	Coverage
1. Satellite Ortho Photo	30cm resolution, colour image and to be corrected by Ground Control Point (GCP)	25 km ²
2. Digital Terrain Model	0.5m mesh and to be corrected by GCP	25 km ²
3. Contour Polyline Data	Hight interval of 1.0m (to be developed from Digital Terrain Model)	25 km ²
4. Building Polygon Data	Figure of existing building with height information	25 km ²

Source: JICA Expert Team



Source: JICA Expert Team

Figure 5-7: Coverage Area of Satellite Image



Source: JICA Expert Team

Figure 5-8: Purchased Satellite Image Data with Contour Polyline and Building Polygon

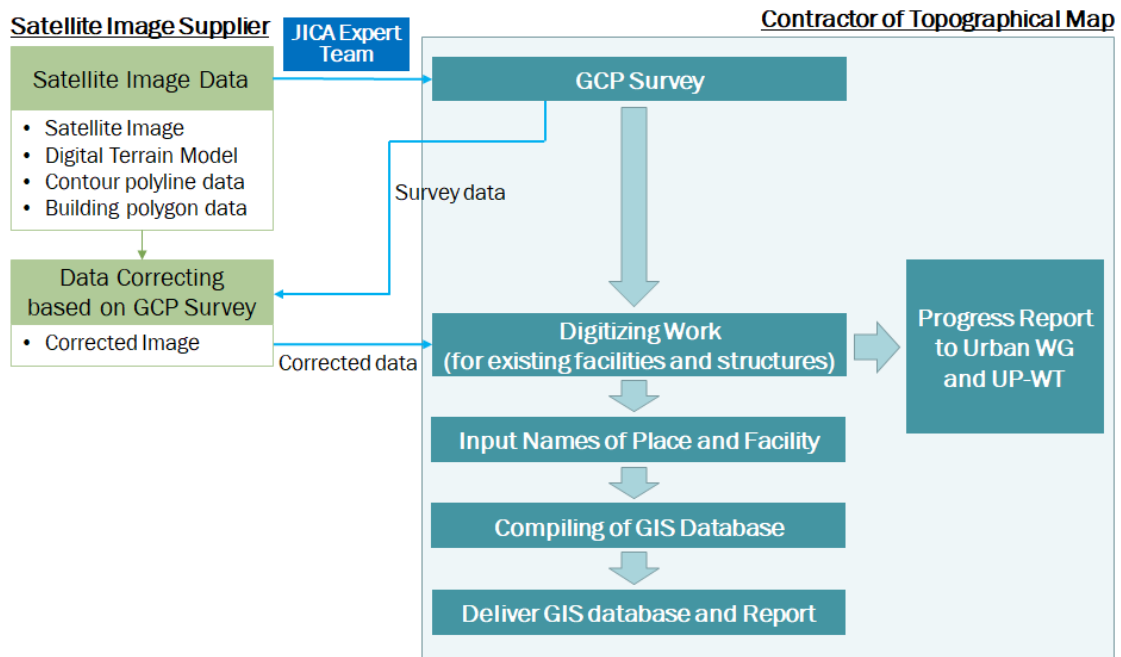
b) Preparation of Subcontract

The JICA Expert Team developed the TOR for the topographical mapping, which was approved in the Urban WG. Table 5-9 shows the specifications of topographical map, and Figure 5-9 shows the workflow of topographical mapping.

Table 5-9: Specifications of Topographical Map

Items	Specifications	Remarks
1. Coverage	25 km ² (same with Satellite Image Data)	
2. Map Contents		
2-1. Road	Center lines, road edge boundaries, boundaries between carriageway and pedestrian way, name of major roads	
2-2. Other facility	Railway lines, Boundaries of water body (rivers, channel, ponds and lake)	
2-3. Administrative Boundary	District and village boundaries	
2.4 Contour Line	Height intervals of 1.0 meter	To be provided as Satellite Image Data
2.5 Building	Building figure with height information	To be provided as Satellite Image Data
2.6 Wall or Fence Line	Boundaries of each household, retails shop etc,	
3. Data format	GIS database (shape file)	

Source: JICA Expert Team



Source: JICA Expert Team

Figure 5-9: Workflow of Topographical Mapping

The JICA Expert Team delivered the Request for Proposal (RfP) to six candidate local survey companies on June 27, 2022, and received five proposals by July 8, 2022. After evaluating the proposals based on technical and cost aspects (refer to Table 5-10), the JICA Expert Team selected SPEL Co., Ltd. as the subcontractor and signed the contract on July 25, 2022. The amount of the contract was USD 10,100.

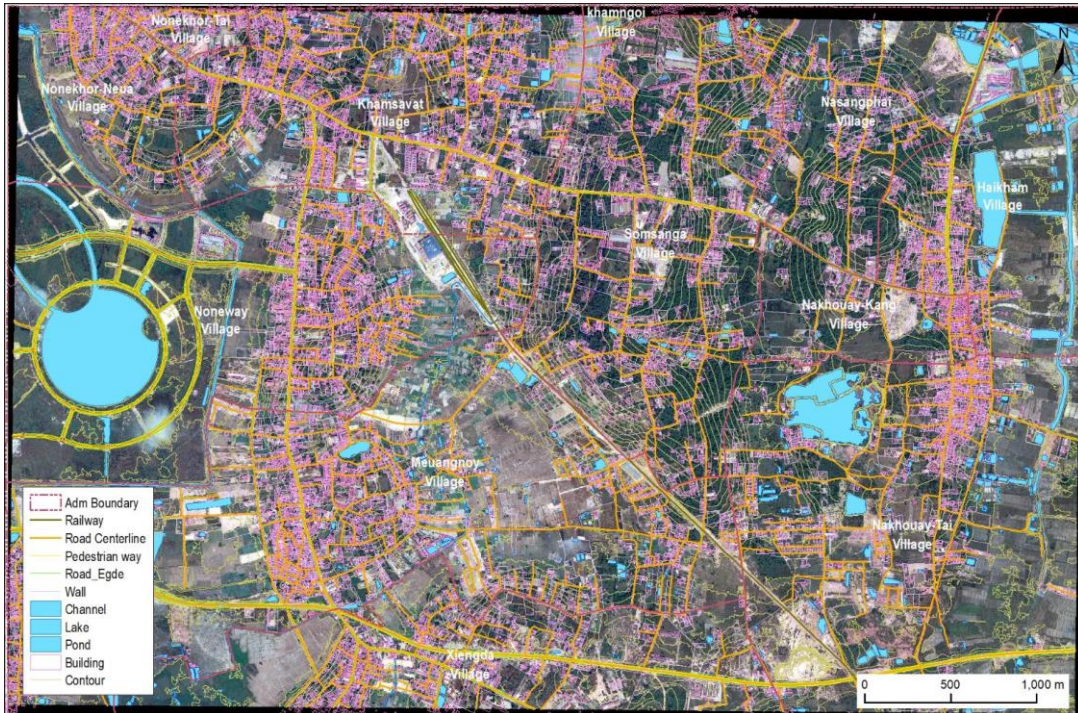
Table 5-10: Result of Evaluation of Proposal

No.	Company Name	Experience of the Company	Work Plan	Development Plan	Experience of the Leaders	Quotation
1	VSS CHALERN CONSTRUCTION	Poor	Poor	Poor	Moderate	Very expensive
2	SPEL	Excellent	Good	Excellent	Excellent	The lowest
3	Mekong Consultants	Good	Excellent	Good	Excellent	Expensive
4	VEC	-	-	-	-	Expensive
5	UNIQTEK	Excellent	Excellent	Good	Excellent	2nd lowest

Source: JICA Expert Team

c) Outline of Subcontract Work

The topographical mapping was completed in October 2022. The final report including explanation of the GCP survey was delivered by the subcontractor. All topographical map data is compiled into the GIS database as shown in Figure 5-10.



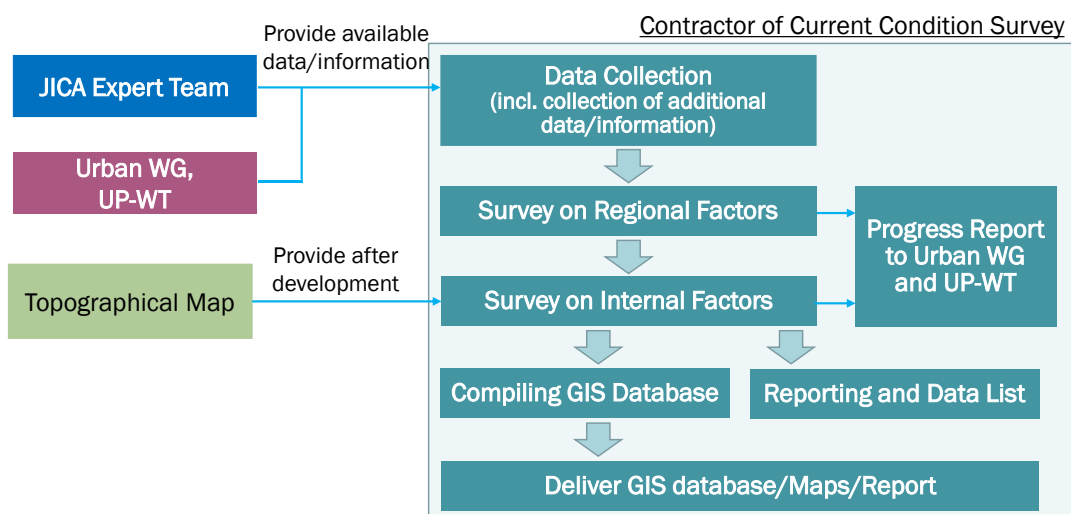
Source: JICA Expert Team

Figure 5-10: Topographical Map on Satellite Image

(3) Current Condition Survey of Model Area

a) Preparation of Subcontract

The JICA Expert Team developed the TOR for the current condition survey with the approval of the Urban WG. Figure 5-11 shows the workflow of the current condition survey, while Table 5-11 detail the specification of the work.



Source: JICA Expert Team

Figure 5-11: Workflow of Current Condition Survey

Table 5-11: Specifications of Current Condition Survey

Items	Survey Contents	Outputs
Regional Factors		
1. Current Government Policy/Plan	<ul style="list-style-type: none"> - National Development Plan - Vientiane Capital development Plan, etc. 	Summary of prior development/business field in Vientiane Capital
2. Urban Plan	<ul style="list-style-type: none"> - Zoning plan and land use regulations - Infrastructure development plan 	GIS database (incorporated into topographical map data)
3. Population	<ul style="list-style-type: none"> - Population past 20years in village level surrounding of target area 	GIS database
4. Real Estate Market	<ul style="list-style-type: none"> - Market sales prices of real estate at the surrounding of survey area and Vientiane capital (land, residence, apartment, office, etc.) - Market rent prices of real estate at the surrounding of survey area and Vientiane capital (land, residence, apartment, office, etc.) - Interview with local developers/construction companies on current and future real estate investment trends 	Surveyed real estate information in GIS database. List of surveyed real estate Current Average market price of real estate in pilot area Future real estate investment/price trends
5. Relating Public/Private Project	<ul style="list-style-type: none"> - Location and information of public project at the surrounding of survey area (e.g. road, development project, transportation project, infrastructure project, public service development, SEZ) - Location and information of private project at the surrounding of survey area (e.g. commercial/office development, housing/apartment development) 	Location and project information in GIS database List of public/private projects
Internal Factors		
6. Current Land Use	<ul style="list-style-type: none"> - Type of land use (residential, commercial, mixed use, agriculture, forests, water surface, vacant land, etc.) 	GIS database (incorporated into topographical map data) Map of land use (PDF)
7. Existing Buildings	<ul style="list-style-type: none"> - Type of use (residence, mixed use, restaurant, office, etc.) - Type of structure (wooden, bricks, RC, etc.) - Number of floors 	GIS database (incorporated into topographical map data) Map of building condition (PDF)
8. Existing Roads	<ul style="list-style-type: none"> - Road width - Number of carriage way - Pavement condition (paved/unpaved) - Road signal - Bus stop 	GIS database (incorporated into topographical map data) Map of road condition (PDF)
9. Current Technical Infrastructure	<ul style="list-style-type: none"> - Water supply lines and service coverage - Sewage lines and service coverage - Electricity lines and service coverage 	GIS database (incorporated into topographical map data) Map of each infrastructure (PDF)
10. Land Rights	<ul style="list-style-type: none"> - Cadastral map data - Land right information (Registration no., type of land right, area, name of right holder) 	GIS database (incorporated into topographical map data) Cadastral Map of survey area (PDF)
11. Special Land Use Restriction	<ul style="list-style-type: none"> - Contents of restriction and restricted area by Development regulation and high voltage power line (building height, land use, FAR etc.) 	Information in GIS database Explanation in document
12. On-going Project	<ul style="list-style-type: none"> - Existing land subdivision project (business owner, planning area, schedule, sales price, etc.) 	Information in GIS database Explanation in document
13. Photo	<ul style="list-style-type: none"> - Main buildings and facilities - Existing land use etc. 	Information in GIS database Photo data (with location data)

Source: JICA Expert Team

b) Selection of Subcontractor

The JICA Expert Team delivered the RfP to the six candidate local survey companies on July 27, 2022

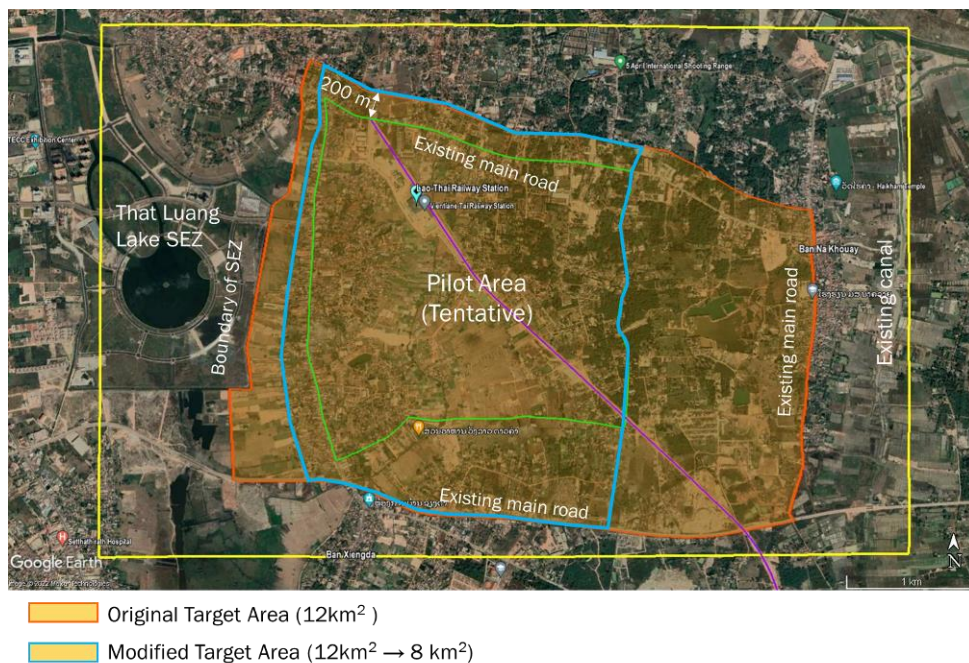
and received three proposals by June 15, 2022. However, all proposed quotations were higher than the prepared budget. Therefore, the JICA Expert Team proposed to reduce the survey area and made agreement in the Urban WG (see Figure 5-12).

Table 5-12 shows the result of the proposal. Though UNIQTEK proposed the lowest quotation, JICA Consultant Team selected Mekong Consultant Co., Ltd. as the subcontractor of the current condition survey, because their technical proposal was the most superior of three candidates and their quotation was similar to UNIKTEK, within a few percentages. JICA Expert Team made the contract with Mekong Consultant Co., Ltd. on August 1, 2022. The amount of the contract was USD 26,740.

Table 5-12: Result of Evaluation of Proposal on Current Condition Survey

No.	Company Name	Experience of the Company	Work Plan	Development Plan	Experience of the Leaders	Quotation
1	VSS CHALERN CONSTRUCTION	Moderate	Poor	Poor	Poor	Expensive
2	Mekong Consultants	Excellent	Good	Good	Excellent	2nd lowest
3	UNIQTEK	Poor	Moderate	Good	Excellent	The lowest

Source: JICA Expert Team



Source: JICA Expert Team

Figure 5-12: Area of Current Condition Survey (After Modification)

c) Outline of Subcontract Work

The current condition survey was completed by November 2022, and the final report summarizing all collected data and information was delivered. The collected data and information relating to the pilot area were compiled into the GIS database.

(4) Changing Method of Area Concept Planning from Subcontracting to Direct Work

The formulation of area concept plan was originally planned to be carried out by subcontracting to a local consultant. However, the quotation prices from two local consultants were high amount (see Table 5-13) which could not be covered by the JICA Expert Team's budget of 11.5 million yen for subcontract work including other subcontract work such as GIS-PF development, topographic mapping, current condition survey, brochures development. Therefore, the JICA Expert Team changed the method of the area concept planning from the subcontracting to the direct work by the JICA Expert Team. The additional personnel fee for the JICA Expert was secured by the diversion of a part of budget for subcontracting.

Table 5-13: Quotation Price for Formulation of Area Concept Plan

No.	Company Name	Quotation price
1	Mekong Consultant	78,110 USD
2	Lao Consulting	164,857 USD

Source: JICA Expert Team

(5) Current Condition Analysis

The JICA Expert Team analyzed the current condition of the pilot area by utilizing the data and information collected through the current condition survey. For the analysis, the JICA Expert Team applied the SWOT analysis method to identify the strengths, weaknesses, opportunities, and threats for the urban development in the pilot area. The results of the SWOT analysis are shown in Table 5-14.

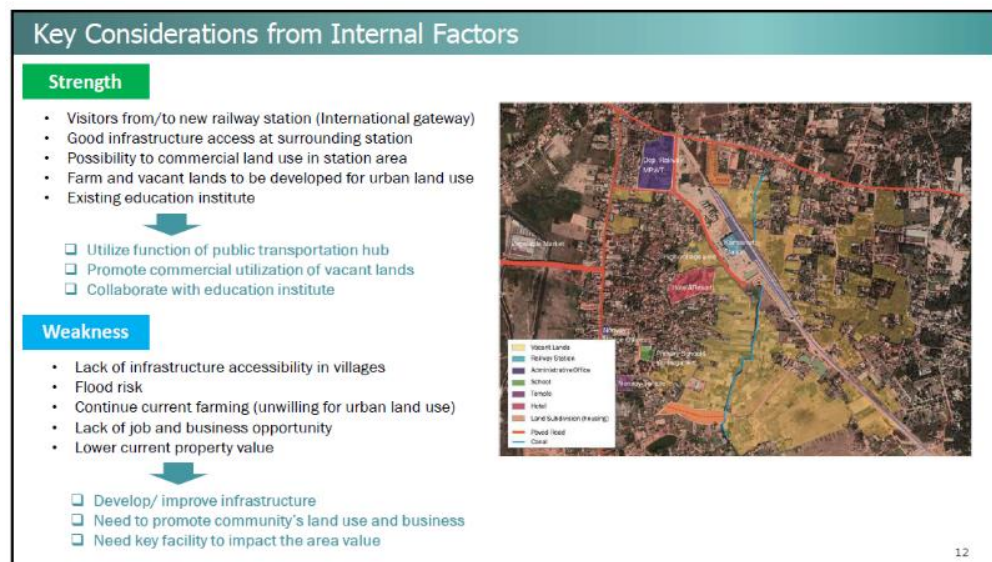
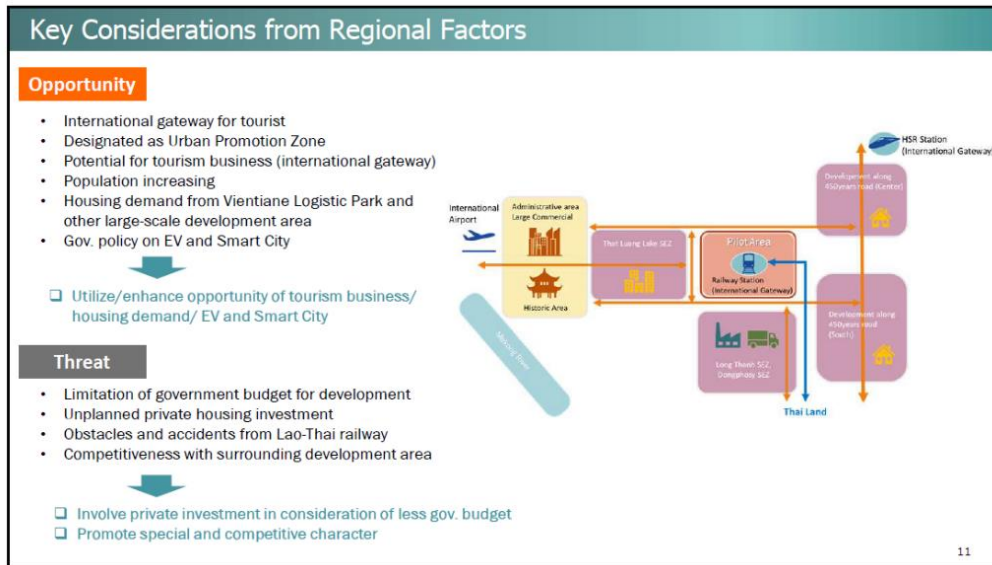
Based on the results of the SWOT analysis, the JICA Expert Team extracted the key considerations for the Area Concept Planning, as shown in Figure 5-13.

Table 5-14: Result of SWOT Analysis for Pilot Area

Viewpoints	Internal Factor		External Factor	
	Strength	Weakness	Opportunity	Threat
Government/ public Benefit	<ul style="list-style-type: none"> Administrative office (DoR MPWT) Educational intuition Lao-Thai railway station 	<ul style="list-style-type: none"> No detailed design Disorganized construction and land filling Lack of land use management 	<ul style="list-style-type: none"> Designated as Urban Promotion Zone Promote innovative technology (smart city/renewal energy/EV) Shift agricultural business to high -value product Promote tourism industry/inbound business 	<ul style="list-style-type: none"> Limitation of gov. budget for development
Technical/ engineering Solution	<ul style="list-style-type: none"> Road accessibility to station area Existing outer paved roads Natural water drainage 	<ul style="list-style-type: none"> Poor road connectivity and condition in villages Area divided by railway facility (lack of connectivity between east and west sides) Flood risk 	<ul style="list-style-type: none"> Extension of bus network to railway station External technical infrastructure system 	<ul style="list-style-type: none"> Environmental impact (air pollution)

Viewpoints	Internal Factor		External Factor	
	Strength	Weakness	Opportunity	Threat
		<ul style="list-style-type: none"> • Prohibit to connect to station access road • Land use restriction in Transmission line • No public transportation to city center 		
Community Benefit	<ul style="list-style-type: none"> • Having willingness for participation • Young population • Farmlands which can be developed as urban use 	<ul style="list-style-type: none"> • Continue current farming (unwilling for urban land use) • Lack of job and business opportunity • Insufficient of people's knowledge on urbanization 	<ul style="list-style-type: none"> • Investment attracts 	<ul style="list-style-type: none"> • Unplanned private investment • Obstacles and accidents from Lao-Thai railway • If no good planning, social complain will be occurred
Economic Potential Enhancement	<ul style="list-style-type: none"> • Visitors from/to railway station • Available vacant lands in station area • Huge farmland and vacant land • Existing hotel resort • Existing education institute 	<ul style="list-style-type: none"> • Lack of infrastructure (road, utility) • Less current commercial land use • Lack of attractiveness for visitors • Lower current property value 	<ul style="list-style-type: none"> • International Gateway for tourists (900 pax/day in 2030) • Higher population and housing demand • Commercial /housing demand by residents/worker from surrounding large-scale development areas • Accessibility to centre/sub-centers in VTE 	<ul style="list-style-type: none"> • Competitiveness with surrounding development area • High housing demand caused to disorder housing development

Source: JICA Expert Team

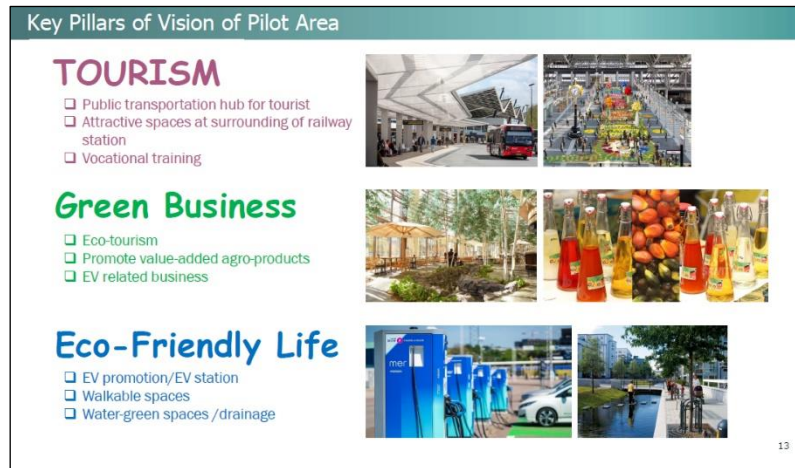


Source: JICA Expert Team

Figure 5-13: Key Considerations for Area Concept Planning

(6) Draft Vision

The JICA Expert Team proposed the draft vision for the Area Concept Plan in the pilot area at the 9th UP-WT meeting. The draft vision was proposed for brainstorming of UP-WT members before conducting stakeholder workshop. The vision consists of the three key pillars: tourism, green business, and eco-friendly life, which will be the core planning policies for the pilot area. The draft vision is shown in Figure 5-14.



Source: JICA Expert Team

Figure 5-14: Draft Vision for Area Concept Plan of Pilot Area

(7) Questionnaire Survey to Community

After the 1st stakeholder workshop in February 2023, the JICA Expert Team conducted questionnaire survey to collect community opinions and demands on the current urban issues and future development in the pilot area. The outline of the survey is shown in Table 5-15.

The result of the survey was utilized for the current condition analysis and visioning for the Area Concept Planning.

Table 5-15: Outline of the Questionnaire Survey in the Pilot Area

Item	Description	Remarks
Objective	To gather information and opinions from the community in the pilot area (1) Characteristics of the community (2) Understanding of the current urban issue (3) Idea/opinion of future land use	
Survey Period	From February 14-28, 2023	
Answer Method	Paper sheet and web-questionnaire	

Item	Description	Remarks
Respondents	Total : 165 households* -Paper sheet: 152 answers (92%) -Web-questionnaire: 13 answers (8%)	*3.8% of total households in five villages (4,292 HH in 2020)

Source: JICA Expert Team

(8) 2nd Stakeholder Workshop in the Pilot Area (as the 5th Seminar on Urban Issue)

The 2nd stakeholder workshop as the 5th seminar on urban was held on May 9, 2023, at Meuang Noy Village Office in Xaysettha District. The objectives of the seminar were: to understand the current situation and the results of community opinion survey in the pilot area; and to develop a draft of the vision and Area Concept Plan of the pilot area. The seminar agenda and the list of participating organizations are shown in Table 5-16 and Table 5-17, respectively. Participants were 16 representatives from four villages (Nonway, Somsanga, Khamsavath, and Meuangnoy) in the pilot area.

Table 5-16: Agenda of the 2nd Stakeholder Workshop in Pilot Area

Time	Topics	Presenter
8:30 – 8:35	Opening Remarks	Mr. Minoru MATSUI, JICA Expert
8:35 – 8:45	Orientation of WS	WT Leader: Mr. Somchit CHERSUANTHOR, PTI
8:45 – 9:05	Current Condition of the Pilot Area and Result of Questionnaire Survey	Mr. Desa PHOMMASAK, OPWT of Xaysettha
9:05 – 9:30	Orientation of Group Work for Visioning and Area Concept Planning	Mr. Minoru MATSUI, JICA Expert
9:30 – 12:00	Group Work (Area Concept Planning)	Facilitator: Mr. Minoru MATSUI, JICA Expert Mr. Vasaly SISAVATH, DHUP of MPWT
12:00-13:00	(Lunch)	
13:00 – 14:20	Presentation of Group Work	Group leaders
14:20 – 14:50	Discussion on Pilot Project	Mr. Akifumi MUTO, JICA Expert
14:50-15:00	Closing Remarks	Mr. Desa PHOMMASAK, OPWT of Xaysettha

Source: JICA Expert Team

Table 5-17: Participating Organizations of the 2nd Stakeholder Workshop

Category	Participant
Village and Community	[Nonway Village] -Mr. Air YORTYIEM, Deputy Head Village -Mr. BOUNTHIENG KEOMANYVONG, Unit Leader -Ms. Phim VONGPHACHAN, Unit Leader [Somsanga Village] -Mr. Phankham KEODONECHANE, Deputy Head of Village -Ms. Laongdao CHANTHAVONGSA, Unit Leader -Ms. Vilaychit MATTHOUCHAN, Unit Leader -Ms. Sengchan KHOTYOTHA, Unit Leader -Ms. Konevilay PHENGSAVANH, Unit Leader [Khamsavath Village] -Chan PHONEPHOMMIXAY, Deputy Head of Village -Ms. Buaphet SIMMALAVONG, Unit Leader [Meuangnoy Village] -Ms. Kongsy LARNSANG, Head of Village

Category	Participant
	-Mr. Bounthavy XAYASAK, Deputy Head of Village -Mr. Sitsamone VONGSOUTHIT, Unit Leader -Mr. Khamdaeng THUEAMBOUNMY, Unit Leader -Mr. Khampasith PHOMMACHACK, Unit Leader -Mr. Vilakone PHOTHISANE, Village Authority
C/P	Urban Promotion WT (CDUDCP) -Department of Housing and Urban Planning (DHUP) -Public Works and Transport Institute (PTI) -Department of Public Works and Transport (DPWT)
JICA Project Team	-JICA Long-term Experts -JICA Expert Team

Source: JICA Expert Team

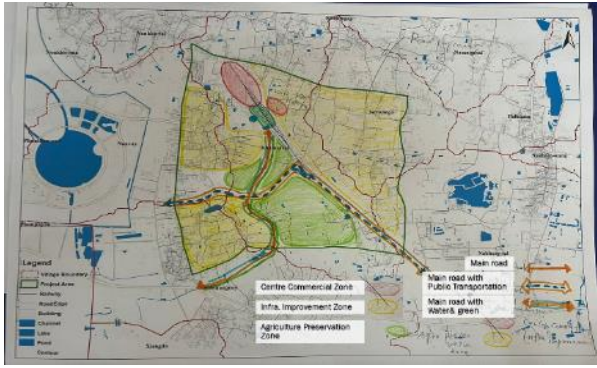
Result of the 2nd Stakeholder Workshop

In the group work session, 16 participants from the villages and communities in the pilot site worked and discussed on the formulation of the draft vision and urban structure plan based on the current condition analysis and instruction, which was provided by the JICA Expert Team. The representative of each group presented their outputs of the vision and urban structure plan. The outputs of each group are summarized in Table 5-18.

Through the group work with community members, the UP-WT was able to collect communities' demands, ideas, and consensus on urban development in the pilot area.

In addition, prior to the workshop, the UP-WT members was trained through the group work planning session for the pilot area at the 2nd small-scale seminar on urban issues which was held on October 21, 2022. By this, the UP-WT members acted as instructors and facilitators for the group work session in the 2nd stakeholder workshop and exchanged opinions with the community participants. The prior experience of the participatory planning method enabled them to smoothly conduct the workshop. The ToT approach was effective to enhance the UP-WT members' capacity to formulate urban development plans and build community consensus.

Table 5-18: Outputs of Group Work in the 2nd Stakeholder Workshop in the Pilot Area

Group	Proposed Vision	Proposed Urban Structure Plan
A	<p><u>Key Pillar 1: Livable Town:</u></p> <ul style="list-style-type: none"> - Adjust orderliness of buildings and facilities - CCTV for security - Community activities and events - Garbage collection system - Convenient and comfortable mobility <p><u>Key Pillar 2: Community Center:</u></p> <ul style="list-style-type: none"> - Community organic farming/ agriculture - Handicraft industry center - Vocational center - Community health center - Higher education center <p><u>Key Pillar 3: Brightness and Resilience:</u></p> <ul style="list-style-type: none"> - Street lights and road pavement - Improvement of basic infrastructure - Green area development 	

<p>B</p>	<p><u>Key Pillar 1: Tourism, Modern Commercial Center and Community Activities</u></p> <ul style="list-style-type: none"> - Modern commercial center - Attraction for domestic and foreign tourists - Improvement of road and sidewalks - Open space and vocational schools <p><u>Key Pillar 2: Green Area</u></p> <ul style="list-style-type: none"> - Green market center - Organic farms as places to attract tourists - Public green park and green walkways <p><u>Key Pillar 3: Eco-friendly Life</u></p> <ul style="list-style-type: none"> - Develop sewage to decrease sewage pollution - EV Station and EV use 	
<p>C</p>	<p><u>Key Pillar 1: Infrastructure Improvement</u></p> <ul style="list-style-type: none"> - Improvement unpaved road and drainage - Installation of street lighting <p><u>Key Pillar 2: Service Facility Development</u></p> <ul style="list-style-type: none"> - Improvement of markets - Health service centers and hospitals - Educational center - Public bus service assessment - Development of transportation areas <p><u>Key Pillar 3: Green Area and Environmental Development</u></p> <ul style="list-style-type: none"> - Public green park - Green and clean agricultural production - Waste water treatment center - EV station 	

Source: JICA Expert Team

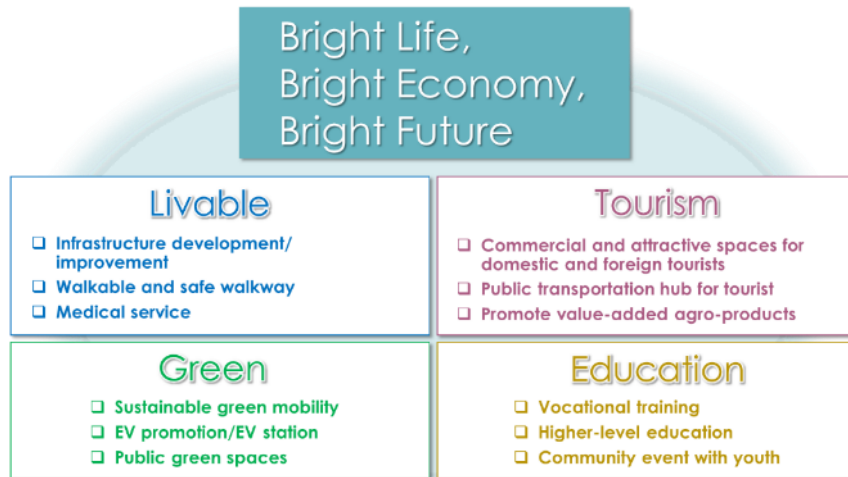


Source: JICA Expert Team

Figure 5-15: Photo of the 2nd Stakeholder Workshop

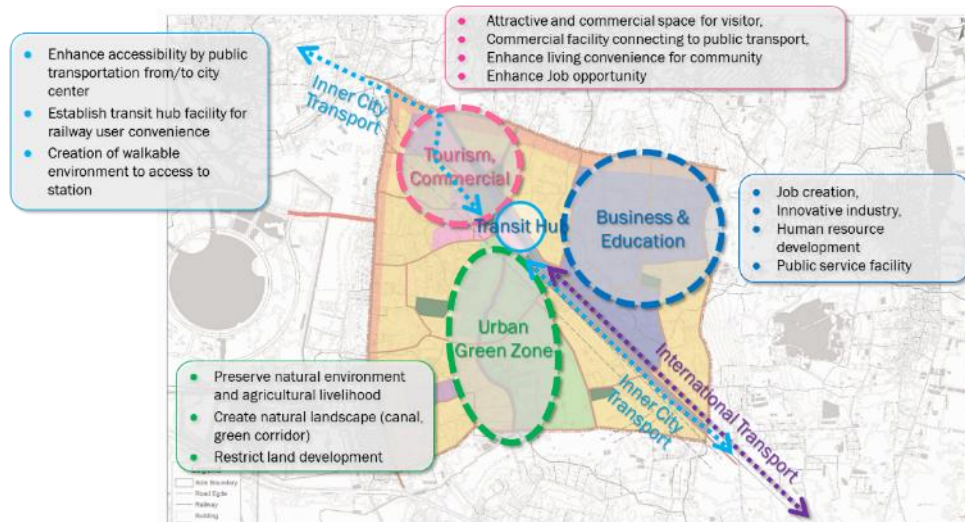
(9) Draft of Area Concept Plan

The draft of the Area Concept Plan of the pilot area was updated based on the discussion at the UP-WT, stakeholder workshops, and consultation meetings held from March to July 2023. The updated vision, urban structure plan, land use plan area and sector plans are shown in Figure 5-16, Figure 5-17, Figure 5-18 and Figure 5-19, respectively.



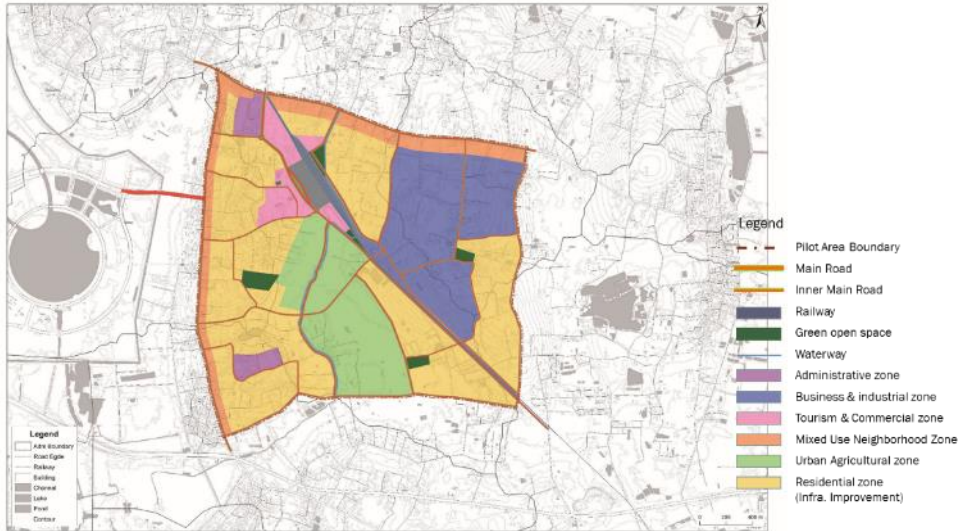
Source: JICA Expert Team

Figure 5-16: Updated Vision for Area Concept Plan of the Pilot Area



Source: JICA Expert Team

Figure 5-17: Updated Urban Structure Plan of the Pilot Area



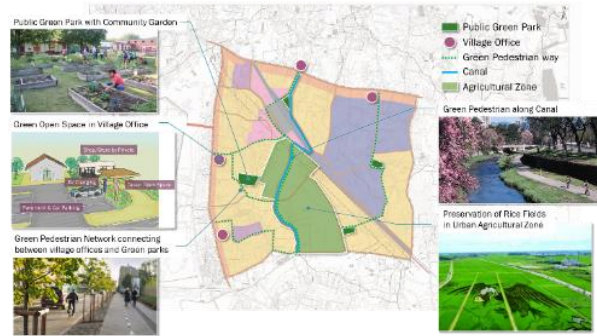
Source: JICA Expert Team

Figure 5-18: Updated Land Use Plan of the Pilot Area

Road and Transportation Plan



Green Open Spaces and Agricultural Zone



Tourism & Commercial and Business & Industrial Zones



Residential and Road-side Mixed Use Zones

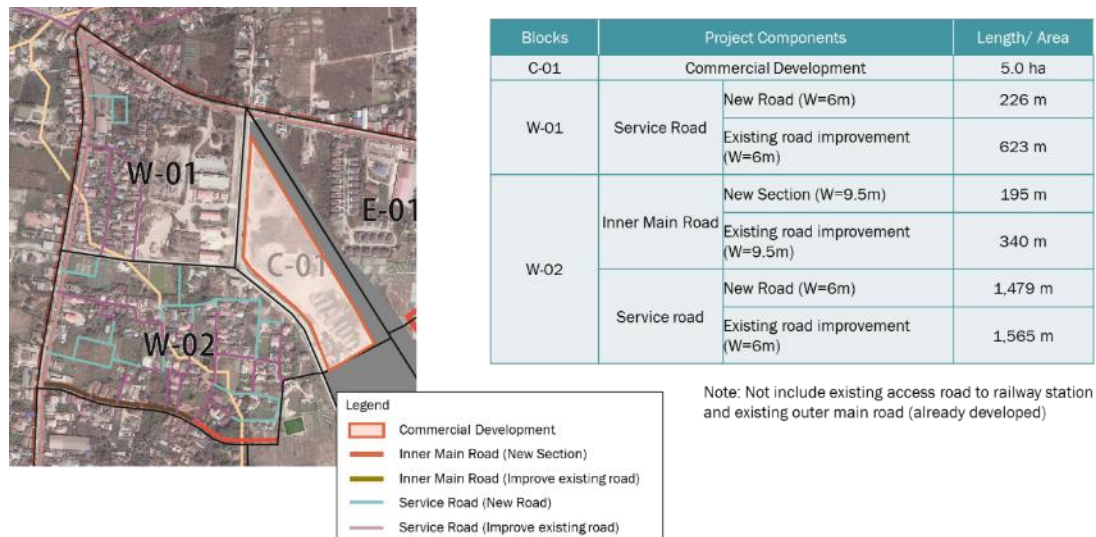


Source: JICA Expert Team

Figure 5-19: Updated Sector Plan of the Pilot Area

(10) Project Identification Based on the Area Concept Plan

The JICA Expert Team is conducting project identification based on the updated Area Concept Plan to extract the project components, estimate development costs, and formulate the action plan. Part of the result of the project identification is shown in Figure 5-20.



Source: JICA Expert Team

Figure 5-20: Identified Road Project (Part of the Pilot Area)

(11) Officialization of the Area Concept Plan

The JICA Expert Team compiled all study contents of the Area Concept Plan into the report document and submitted it with the GIS data to the C/P.

On June 17, 2024, Discussions with DD of DHUP was held regarding the officialization process for the Area Concept Plan formulated in this project. The officialization could be granted by the MoM of agreement of Director Generals of DHUP, PTI and DPWT. MoM regarding this advice was exchanged on the same date.

Based on the above MoM, on July 8, 2024, the report of the Area Concept Plan and the draft of MoM were submitted to DHUP by JICA Expert Team. Finally, the MoM were signed by Director General of DHUP (on August 12, 2024), PTI (on August 13, 2024), and DPWT (on August 16, 2024), and the Area Concept Plan was approved.

In addition, on July 8, 2024, the report of the Area Concept Plan and the GIS data including current condition data and planning contents were submitted to PTI and DPWT. Based on these planning data, they will proceed the formulation of detail urban plan and establishment of development project.

5.4 Preparation of Pilot Project for Collaborative Urban Development

Activities regarding the pilot project of Collaborative Urban Development have been conducted under the schedule of selection of the pilot project in April 2023 and the project implementation from July to December 2023. The preparation of the pilot project was conducted according to the following steps.

(1) Setting Concept of the Collaborative Urban Development Project

In Japan, the introducing of the Collaborative Urban Development methods is driven under the social and economic contexts such as cost increasing for maintenance and improvement of the deteriorated public facilities and government's financial constraints caused by population decline. Under the context, the Collaborative Urban Development methods with the following two fundamental concept was introduced:

- To solve government financial issue by collaboration of the government and private sector and utilization of private sector's creativity and ingenuity for construction, maintenance, and operation of public facilities
- To provide better public services by the collaboration of the government and private sector

On the other hand, in Laos, public-private partnerships (PPP) scheme with private investment have been applied for urban development. However, utilizing the PPP scheme are limited to large-scale urban development and infrastructure projects under management of the Ministry of Planning and Investment (MPI). In this project, the JICA Expert Team proposed to adopt the Collaborative Urban Development to provide better public service including maintenance of public infrastructure. The basic concept of Collaborative Urban Development in Las was proposed as follows:

- To provide better public services by utilizing know-how of private business operator

(2) Preliminary Study on Candidates of Pilot Project

The JICA Expert Team preliminary set following basic concepts of the pilot project of collaborative urban development through the discussion with C/P and JICA Long-term Experts:

- To be incorporated with collaborative activities among residents, landowners, private businesses, and administrative agencies in the planning and implementation as a model for collaborative urban development
- To include physical development to avoid less effectiveness by soft components project which will be difficult to make tangible results and limited to impact for the dissemination
- To be aligned with the needs of residents and landowners in the pilot area
- To effect for broad benefits to local residents, landowners, visitors, etc.
- To be a trigger for promotion of development in entire of the pilot area (to policymakers, landowners, and private business operator)

Based on the current condition analysis in pilot area and basic concepts of collaborative urban development, the JICA Expert Team set four key development fields for utilizing private investment for pilot area: a) infrastructure development such as roads and drainage, b) promotion of EV, c) creation of vibrant community spaces, d) development of public and un-used lands.

In addition, the JICA Expert Team proposed initial ideas of the pilot project as follows:

[Proposed Initial Ideas of Pilot Project]

- A1. Road pavement on existing road
- A2. Planting and furniture installation in existing road
- B1. EV Bus and EV station
- C1. Utilization of Village Office for Greenery Open Space
- C2. Community event in railway station space
- D1. Study and tender assistance for concession utilizing government land
- D2. Coordinate private land utilization/ development

(3) Initial Sounding Survey for Private Business Operator

The JICA Expert Team conducted the initial sounding survey for private business operators to identify their concerning and interest in investment in the pilot area in November 2022. The result of the survey is summarized in Table 5-19.

Table 5-19: Summary of Initial Sounding Survey on Private Business Operator

Private Business Operator	Comments
Green Discovery 8 November, 2022	<ul style="list-style-type: none"> • There is potential for tourism projects around the Khamsavath Station. The planned number of passengers of 2,000 people per day at Khamsavath Station is not less. Project promoting these passengers will be effective for generating economic opportunity in the area.
Japanese Chamber of Commerce and Industry of Lao PDR 9 November, 2022	<ul style="list-style-type: none"> • In Vientiane, much green energy has been supplied by hydropower. That is one of the advantages for enhancing competitiveness of Laos. • Current energy supply network is complicated and has a risk to cause power outages. Improvements of infrastructure is necessary.
LOCA 17 November, 2022	<ul style="list-style-type: none"> • In the central areas of Laos, EVs are becoming common, and utilization of EV charging stations are increasingly being increasing as a new business field. • LOCA has a plan to develop EV charging stations with recreational spaces such as cafes and restaurants and aims to diversify of revenue resources. • LOCA also expects promoting EV in suburban areas.
Agro Mart 17 November, 2022	<ul style="list-style-type: none"> • Agriculture is one of potential business field in the pilot area. There is potential for promotion of value added local agricultural products and new tourism center.
Vientiane Logistics Park 18 November, 2022	<ul style="list-style-type: none"> • Vientiane Logistics Park (VLP) is developing its logistics hub with the basic concepts of green, modern and Smart. Due to its proximity to the Thai border, it is designated as a processing industry hub for export goods and a tax-free zone. • These above concepts are also important for the area around Khamsavath Station, and collaboration with the logistics hub can be expected.
Market Unit of Xaysettha District 21 November, 2022	<ul style="list-style-type: none"> • Market Unit hopes for promoting the sale of agricultural products in the local market. • They also hope infrastructure development for promotion of local economy.

Source: JICA Expert Team

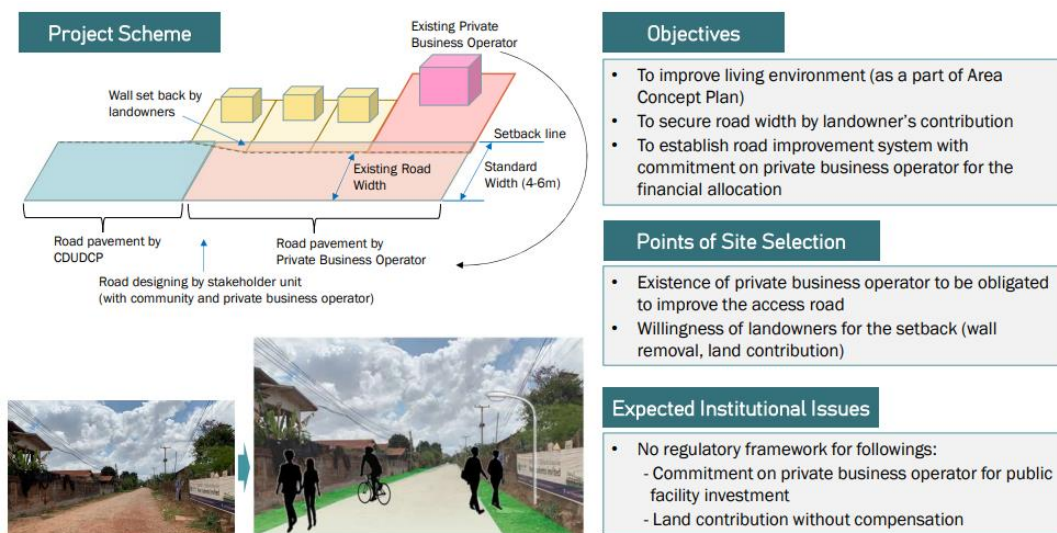
(4) Discussion on Candidates of Pilot Project

After the preliminary study, the JICA Expert Team proposed and discussed on the candidates of the pilot project with the collaboration scheme and the implementation schedules in the UP-WT meeting held on March 30, 2023.

Through the separated consultations with DHUP, DPWT and PTI for discussion regarding C/P's ability such as jurisdiction and human resources, the JICA Expert Team identified two final candidates of the pilot project as follows:

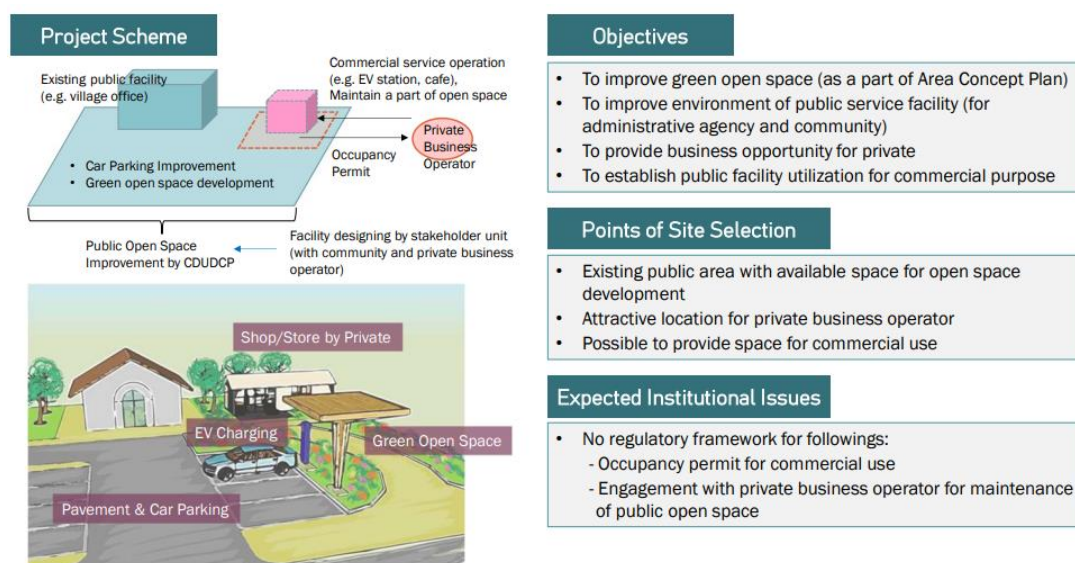
- Candidate 1: Road improvement project by collaboration
- Candidate 2: Green park and commercial development project on public land

These two final candidates were proposed and discussed at the UP-WT meeting held on 2 June 2023. The project concepts are shown in Figure 5-21 and Figure 5-22.



Source: JICA Expert Team

Figure 5-21: Candidate 1: Road Improvement by Collaboration



Source: JICA Expert Team

Figure 5-22: Candidate 2: Green Park and Commercial Development on Public Land

5.5 Suspension of Pilot Project of Collaborative Urban Development

(1) Interview Survey for Private Business Operator

The JICA Expert Team conducted interview survey to private business operators to identify participants for the two final candidates of the pilot project. Table 5-20 shows the summary of the interview survey for private business operators regarding participation to pilot project:

Table 5-20: Result of Interview Survey to Private Business Operator on the Project Participation

Private Business Operator	Issues and Challenges on Project Participation
Korean School June 7, 2023	<ul style="list-style-type: none"> The roads proposed for the pilot project are already under consideration for development by the Road Bureau and local private businesses. However, there was no response after the interview In June 2023, <u>Korean school responded that participation in the pilot project might be difficult due to less budget.</u> Korean school had already invested in road improvements during the school's construction and has no additional funds for new investments.
LOCA May 2, 2023	<ul style="list-style-type: none"> LOCA was concerning the pilot project and its implementation scheme. However, <u>they have expressed to take time for decision of the investment. Because it is difficult to ensure the profitability in the current situation of the pilot area without opening of the Lao-Thai Railway Station.</u> For EV stations, LOCA was impressed the demand around the station. However, but decision of the investment also takes time due to delay the station operation. <u>It is difficult to implement the pilot project by private investment within the project period.</u> It is also difficult for private businesses to prepare investment funds without government official plans and investment plans
Green Discovery	<ul style="list-style-type: none"> There is potential for developing public land around the station as a tourism hub

Private Business Operator	Issues and Challenges on Project Participation
June 6, 2023	<ul style="list-style-type: none"> • <u>However, short-term investment is challenging without operation of Lao-Thai railway station.</u>
Agro Mart June 8, 2023	<ul style="list-style-type: none"> • Agro Mart is operating business of direct-operated supermarket for agricultural products in Vientiane. • In the pilot area, it seems that majority are low-income residents, it is difficult to find consumer demand. • Agro Mart is interested in commercial use of public spaces, <u>but making an investment decision within the pilot project period is challenging.</u>

Source: JICA Expert Team

(2) Issue on Pilot Project Implementation and Decision the Suspension

Two main issues were identified regarding private sector participation in the pilot project:

- **Funding for Investment:** There was a challenge with securing investment funds. In some cases, private businesses handle the development of access and surrounding roads when developing private facilities. However, in this instance, there was insufficient prior discussion between Korean School and the administration regarding the burden of road development.
- **Low Demand Due to Unopened Station:** The fact that Kham Savan Station has not yet opened was highlighted as a challenge. Although there was an interest in the potential of the site and the implementation scheme of the pilot project, it is difficult for private businesses to make investment decisions and start the project within the current project period.

Based on the above-mentioned reasons, the JICA Expert Team explained the difficulty of implementing the pilot project within the period of the CDUDCP at the 37th Urban WG. They confirmed with C/P to propose the suspension of the pilot project's implementation and conducting the pilot study activity to the 3rd JCC in August 2023.

(3) Findings from Pilot Project Suspension

Regarding the cause of the suspension of the pilot project implementation, the following factors are considered as lessons learnt from the Output 3 activities so far:

- 1) Selection of Pilot Area: There might be a lack of consideration of the private business operator demand in the selection of the pilot area. Although the pilot area was selected from the three candidates proposed by the C/P based on the technical criteria and opinions from C/P and the community as the public needs of urban development, it is better to include the demand of private business operator to find the investment motivation and the interest in collaboration before the selection of the pilot area.
- 2) Lao-Thai Railway Opening: Kham Savan Station of the Lao-Thai Railway located in the pilot area encourages the development potential at the surrounding area. Private business operators also deem that the railway opening will promote the private investment activities in the pilot area.

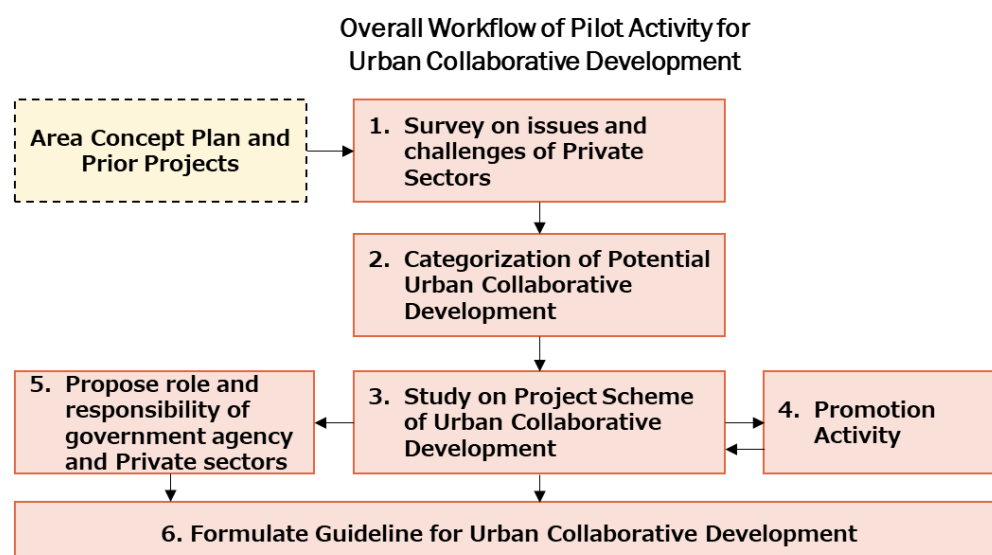
Notwithstanding the expectation, the station is still not opened yet. This situation affected the private business operators' motivation toward the investment.

- 3) **Official Urban Plan and Infrastructure Plan:** the CDUDCP supported to formulate the area concept plan. However, since this plan has not been officially approved by the government, there were concerns about the basis for public infrastructure development. Particularly for private businesses, the official future plans and the government direction of infrastructure development are crucial elements for decisions making of private investment. Main development theme of the selected pilot area is inclined toward infrastructure development due to the current condition which is lack of urban facility. For this, the proposed type of pilot project also focused on the infrastructure development. However, lack of infrastructure was one of the reasons of the hesitation of business operator's investment in terms of cost and timing of the investment. In addition, there were no other options of the possible types of project.
- 4) **Coverage of C/P's Jurisdiction:** The C/P's current jurisdiction is mostly urban planning and urban development. It was necessary to select the pilot project for which the C/P can handle the implementation. For this, it was considered that the target field of the pilot project is restricted to infrastructure development and small-scale urban development, despite possibility of various fields of collaborative urban development. It is better to start the discussion with C/P on various business fields of collaborative urban development to find possible activity under the C/P's jurisdiction.
- 5) **Dialogue between C/P and Private Business Operators:** To promote private investment for collaborative urban development, it is necessary to provide the government's objective, commitment and role sharing in the financing and operation for private business operators. However, there is a lack of sharing of government data and information from C/P to private business operators in the preparation stage of the pilot project.
- 6) **Institutional System:** There was a case of road pavement project collaborating with business operator in Vientiane which was proposed as the one of the pilot projects. However, the project was implemented under the negotiation between the OPWT and the private business operator without any official rule. This current situation without any rule to regulate the role of stakeholder might cause the difficulty of the implementation and dissemination of the proposed pilot project.

5.6 Study on Promotion of Collaborative Urban Development

(1) Outline of Study Activity for Collaborative Urban Development

The JICA Expert Team proposed a study activity to promote collaborative urban development and to establish a project scheme based on the market survey needs and private business operators. The workflow is shown in Figure 5-23.



Source: JICA Expert Team

Figure 5-23: Workflow of Study on Promotion of Collaborative Urban Development

(2) Survey on Issues and Challenges of Private Business Operator

To identify needs of private business operators for collaborative urban development in Laos, a questionnaire survey and the 1st seminar on collaborative urban development were conducted to invite private sector.

a) Questionnaire Survey

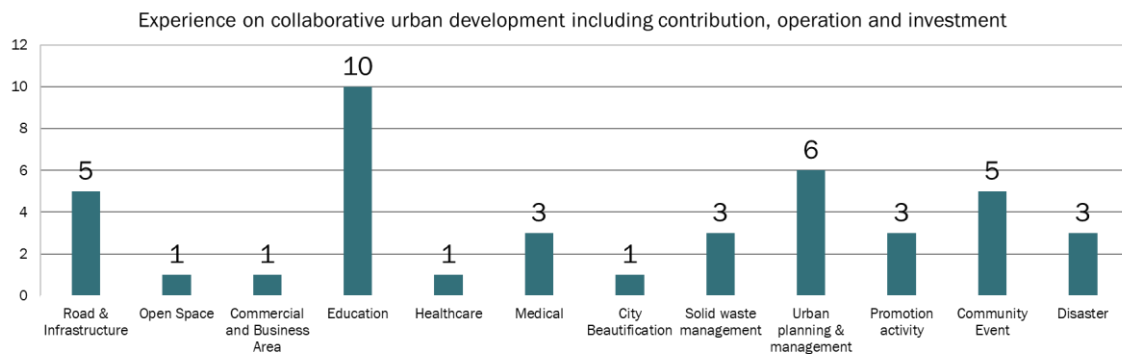
In the study, a questionnaire survey was conducted between November and December 2023 to understand the market needs in Laos for collaborative urban development. The outline of the survey and the results are shown in Table 5-21, Figure 5-24, Figure 5-25 and Figure 5-26, respectively. According to the questionnaire, it was confirmed that most private business operators are interested in collaborative urban development, especially in the fields of environment, human resource development, and infrastructure development.

Table 5-21: Outline of Questionnaire Survey for Private Business Operators

Item	Description
Objective	To collect the needs and interests of the private business operators on collaborative urban development.
Survey Period	From December 6 to December 22, 2023
Answer Method	Web-questionnaire
Respondents	24 private business operators and associations

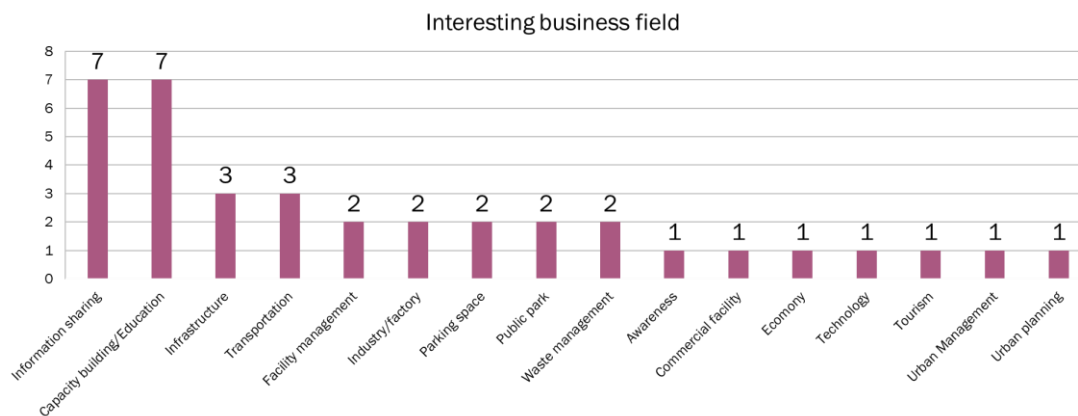
Item	Description
	(questionnaire distributed to private business operators through the 22 associations)

Source: JICA Expert Team



Source: JICA Expert Team

Figure 5-24: Experience of Collaborative Urban Development (Business Field)



Source: JICA Expert Team

Figure 5-25: Interesting Business Field of Collaborative Urban Development

Interesting business field of collaborative urban development

- According to questionnaire, private business operators are interested in road (incl. infrastructure), urban planning, solid waste, public park, parking, commercial facility, facility management, human resource development.



15

Source: JICA Expert Team

Figure 5-26: Summary of Comments on Collaborative Urban Development

b) Seminar on Collaborative Urban Development

The JICA Expert Team held seminars on collaborative urban development three times to understand the market needs and collect ideas for collaborative urban development. These results are shown in the section 5.8.

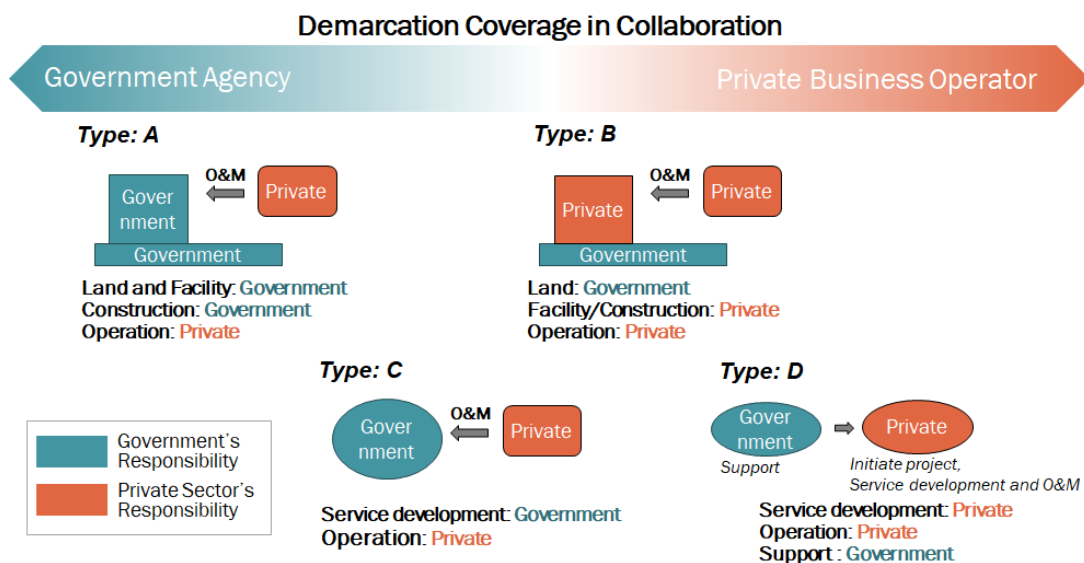
(3) Categorization of Potential Collaborative Urban Development

Based on the results of questionnaire survey and 1st seminar, the JICA Expert Team proposed the target business fields and types of collaborative urban development in Vientiane Capital. Collaborative urban development targets public services (small and medium scale) that can be managed by the PWT sector, as shown in Figure 5-27. Collaborative urban development can be categorized into four types based on the roles of the public and private sectors in terms of facility ownership, construction, and O&M, as shown in Figure 5-28.



Source: JICA Expert Team

Figure 5-27: Business Field of Collaborative Urban Development



Source: JICA Expert Team

Figure 5-28: Business Types of Collaborative Urban Development

(4) Study on Business Scheme for Collaborative Urban Development

Based on the results of the 1st Seminar on Collaborative Urban Development, the JICA Expert Team conducted the sounding survey for private business operators who are interested in collaborative urban development. The summary of the result of sounding survey is shown Table 5-22. Additionally, the JICA Expert Team held 2nd seminar on Collaborative Urban Development on March 24, 2024, and the 3rd seminar on May 23, 2024 to discuss on the proposed business scheme. The details of the seminar series are described in the section 5.8.

Table 5-22: Summary of Sounding Survey on Collaborative Urban Development

Private Business Operator	Comments on Collaborative Urban Development
Lao ICT commerce Association March 21, 2024	<ul style="list-style-type: none"> • There is a high level of interest in collaborative urban development projects. • Consideration is also being given to initiatives in the ICT sector.
Lao Agro Processing Association March 21, 2024	<ul style="list-style-type: none"> • Is it possible to implement initiatives that add value to agricultural products and locally produced goods? There is also interest in urban development projects that can promote sales.
Lao National Construction Association March 22, 2024	<ul style="list-style-type: none"> • There is a high level of interest in collaborative urban development. • Dialogue with the government is necessary for discussing the project scheme. It is believed that discussions within the government are also needed to incorporate the opinions of private business operator.
Lao Micro Finance Association March 24, 2024	<ul style="list-style-type: none"> • It would be beneficial to have initiatives that support small and medium-sized enterprises (SMEs). • Within the association, some companies are engaged in initiatives like bike-sharing, so it would be good to have efforts that support SMEs. • All of these business areas are of great interest to SMEs. • There is particular interest in green initiatives, and we would like to engage in discussions with the government about the project scheme.
Hotel and Restaurant Association March 26, 2024	<ul style="list-style-type: none"> • There is interest in initiatives that utilize public land owned by the government. • Dialogue with the government is necessary, and discussions are needed regarding the division of roles.
Sabai Cleaning April 2, 2024	<ul style="list-style-type: none"> • Although we are already engaged in cleaning services and other activities, it is very positive to see the concept of collaborative urban development spreading. • It would be beneficial if the business scheme could be structured in a way that improves local community services while providing mutual benefits for both the public and private sectors.

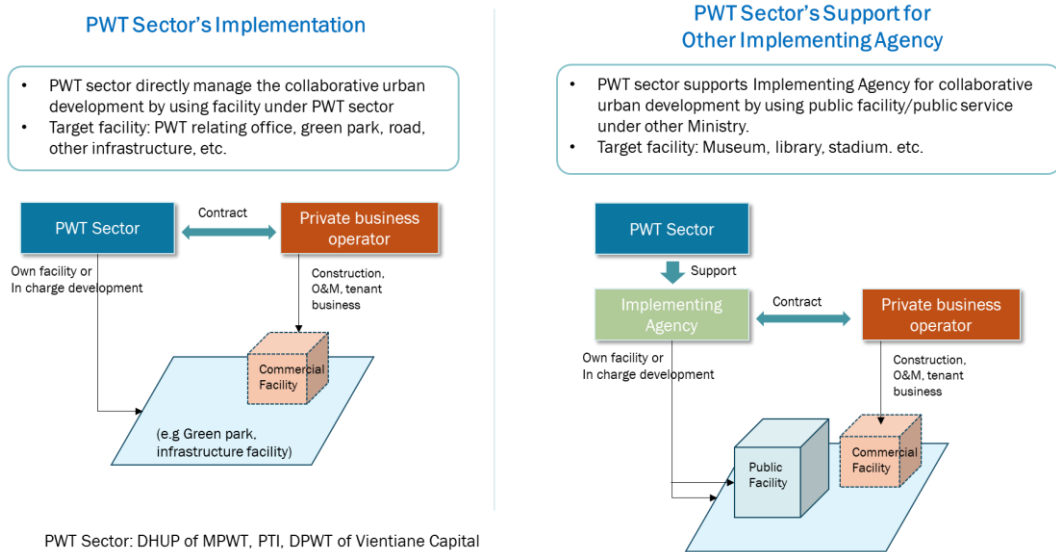
Source: JICA Expert Team

The JICA Expert Team proposed the project scheme based on the market needs for collaborative urban development, derived from a series of sounding surveys. The following six model schemes for collaborative urban development in Vientiane Capital were proposed:

1. Commercial utilization of public cultural facilities (e.g., museums, stadiums)
2. Commercial utilization of village offices
3. Commercial utilization of public open spaces
4. Road improvement with private business operator's investment
5. Digital data sharing service by using VirGo
6. Public service for infrastructure (e.g., garbage management/city beautification events)

(5) Role of PWT Sector for Collaborative Urban Development Project

The JICA Expert Team proposed the roles of the C/P agencies (DHUP, PTI and DPWT) for the preparation and implementation of collaborative urban development projects in the UP-WT and Urban WG. The C/P agencies have two different roles: as the implementers and as supporters for other implementing agencies. The basic mechanisms are shown in Figure 5-29.



Source: JICA Expert Team

Figure 5-29: Role of C/P Agencies for Collaborative Urban Development Project

(6) Promoting Activity

To promote collaborative urban development, the JICA Expert Team developed the brochure of collaborative urban development in Vientiane Capital as shown in Figure 5-30.



Source: JICA Expert Team

Figure 5-30: Brochure for Promotion of Collaborative Urban Development

5.7 Formulation of Guidelines on Collaborative Urban Development

(1) Challenges on Collaborative Urban Development

Based on the examination of the collaborative urban development pilot projects and the experience from the pilot surveys, the JICA Expert Team identified the following necessary elements for promoting collaborative urban development:

1. Sharing the concept of collaborative urban development.

To promote collaborative urban development, it is essential to have common understanding of the concept of collaborative urban development between private businesses and the government, and to establish a system for ongoing dissemination. In this pilot survey, public-private partnership seminars were held to provide a platform for dialogue between the government and private businesses. The guidelines outline the necessity of this approach.

2. Identifying promising business areas for collaborative urban development.

To identify promising projects for collaborative urban development, it is crucial to gather feedback from private sector businesses. However, in order to promote collaborative urban development, financial and policy support from the government is indispensable. There are cases where projects cannot be implemented due to the lack of secured government budgets. Therefore, when aiming for short-term implementation, it is necessary to select projects that avoid bottlenecks by utilizing private funds for those projects that already have secured government budgets. Based on this, the guidelines outline important considerations for selecting promising projects.

3. Clarifying the roles of C/P.

Depending on the collaborative urban development project, there are two distinct roles: the implementer and the supporter from other implementing agencies. The guidelines outline the roles required of C/P from these perspectives and anticipate the establishment of an organizational structure to promote collaborative urban development.

4. Facilitating dialogue between C/P and private businesses.

The need for continuous dialogue with the government has been pointed out by private business operators, and various methodologies of communication are required throughout the deliberation process. In this project, we conducted seminars (to gather a wide range of opinions and disseminate information) and interviews (to understand the intentions of individual private sector entities). The guidelines include methods for engaging in dialogue with private business operators, which are expected to serve as a reference for C/P in future discussions with these private business operators.

(2) Formulation of the Guidelines for Collaborative Urban Development

The JICA Expert Team and UP-WT formulated the guidelines for promoting collaborative urban development based on the discussion with government agencies and private business operators. The contents of the guidelines are shown in Table 5-23.

Table 5-23: Contents of Guidelines for Promotion of Collaborative Urban Development

Chapter	Contents
I. Introduction	1-1. Background 1-2. Objective of Guideline
II. Concept of Collaborative Urban Development	2-1. Principle of Collaborative Urban Development 2-2. Target Business Fields 2-3. Types of Collaboration 2-4. Role of PWT Sector 2-5. Cases of Collaborative Urban Development in VTE
III. Preparation and Implementation of Collaborative Urban Development Project	3-1. Process of Collaborative Urban Development Project 3-2. Long List of Candidate Projects 3-3. Sounding Survey 3-4. Selection of Project 3-5. Feasibility Study 3-6. Selection of Private Business Operator 3-7. Designing and Construction, O&M and Monitoring
IV. Cases of Collaborative Urban Development Project	1. Commercial utilization of public cultural facility (e.g. museum, stadium) 2. Commercial utilization of village office 3. Commercial utilization of public open space 4. Road improvement with private business operator's investment 5. Digital data sharing service by using VirGo 6. Public service for infrastructure (e.g. garbage management/city beautification event)
V. Area Concept Planning	5-1. Objective of Area Concept Plan 5-2. Process of Area Concept Planning 5-3. Selection of Target Area 5-4. Current Condition Survey 5-5. SWOT Analysis 5-6. Visioning 5-7. Formulation of Conceptual Plan 5-8. Project Identification 5-9. Action Planning

Source: JICA Expert Team

(3) Officialization of the Guidelines

On June 17, 2024, Discussions with DDG of DHUP was held regarding the approval process for the Collaborative Urban Development Promotion Guidelines established in this project. Since these guidelines pertain to Vientiane Capital, the approval could be granted by the DPWT Director. MoM regarding this advice was exchanged on the same date.

Based on the above MoM, on July 8, 2024, the draft of guidelines for promotion of collaborative urban development and the draft form for the approval were submitted to DPWT. The guidelines were reviewed by the Division of Housing and Urban Planning of DPWT and were approved by the Director-General of DPWT on July 26, 2024.

5.8 Stakeholder Seminars for Collaborative Urban Development

(1) 1st Seminar on Collaborative Urban Development

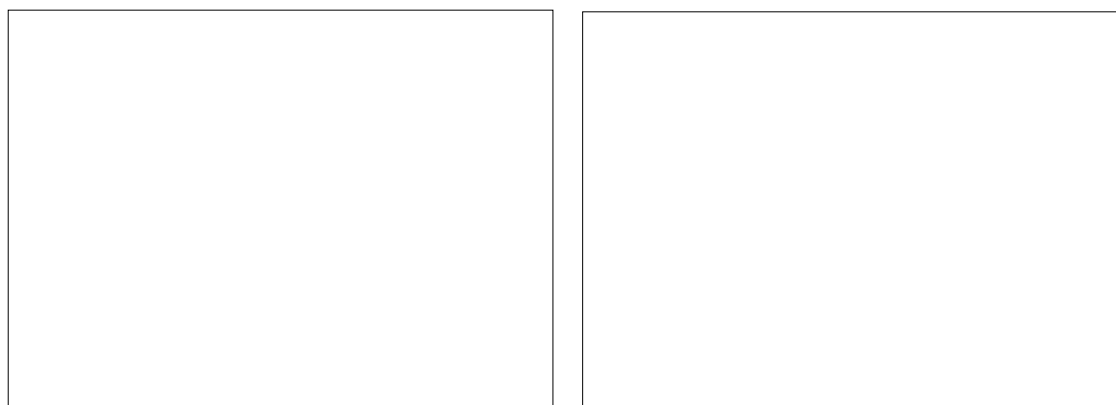
The 1st seminar on collaborative urban development as the 8th seminar on urban issue was held on December 22, 2023, to introduce the concept of collaborative urban development and present the Area Concept Plan in the pilot area. The outline of the 1st seminar is shown in Table 5-24.

Table 5-24: Outline of the 1st Seminar on Collaborative Urban Development

Item	Description
Objective	<ul style="list-style-type: none"> • To share the Area Concept Plan with the private sectors, who are interested in the collaborative urban development. • To share how to promote collaborative urban development in Lao through the case study. • To cultivate a better understanding of the collaborative urban development.
Date	<ul style="list-style-type: none"> • 22 December 2022, 09:00 - 11:30 AM (Laos time)
Agenda	<ul style="list-style-type: none"> • Concept of Collaborative Urban Development • Area Concept Plan of the Pilot Area • Case Study of Collaborative Urban Development • Discussion on Collaborative Urban Development in Lao
Participants	<ul style="list-style-type: none"> • Hotel and Restaurant Association of Lao • Lao Agro Processing Association • Lao Microfinance Association (LMFA) • Small and Medium Enterprise Promotion Association of Lao PDR • State Pharmaceutical Manufacturing Enterprise No.3 • Sabai Cleaning Co., Ltd. • Vientiane State Food Enterprise • DESIGN GROUP SOLE CO., LTD. • Chansavang Civil Engineering and Consultant Sole Co., Ltd • Lao KBN Medical Products Co., Ltd. • VIMANA Design-Construction Co., Ltd. • Micro Finance Deposits Taking Patoukham • Lao Pride Inc
Results of Discussion	<ul style="list-style-type: none"> • Participants had a lively exchange of opinions as shown below. • All private business operators are interested in collaborative urban development, especially in the following fields of urban development: <ul style="list-style-type: none"> ➢ Green space and open space ➢ Health care and education service ➢ Urban development and infrastructure ➢ City beautification and sanitation service ➢ Tourism service ➢ Public facilities management and community awareness ➢ Urban information access and shared platform • But when collaborative urban development is implemented, private business operators pointed out the following challenges: <ul style="list-style-type: none"> ➢ Community engagement and local authority support

Item	Description
	<ul style="list-style-type: none"> ➤ Land compensation ➤ Trend urban development ➤ Financial challenges ➤ Sustainable urban development • Private business operators expressed their willingness to have further discussions with the government to implement collaborative urban development.

Source: JICA Expert Team



Source: JICA Expert Team

Figure 5-31: Photos of the 1st Seminar on Collaborative Urban Development

(2) 2nd Seminar on Collaborative Urban Development (as the 7th UMP)

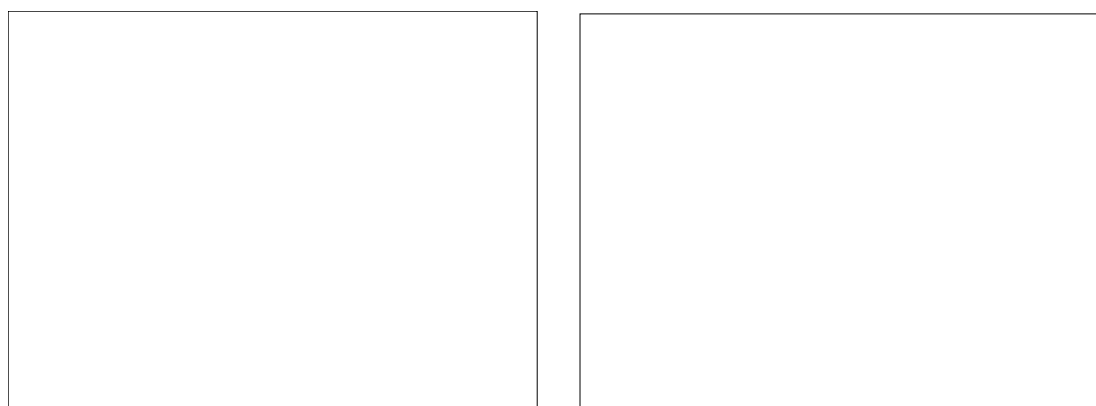
The 2nd seminar on collaborative urban development, held as the 7th UMP meeting, took place on March 27, 2024. The purposes were to share the results of the 1st seminar and questionnaire survey and to discuss the business scheme of collaborative urban development to realize the Area Concept Plan in the pilot area in Vientiane. The outline of the 2nd seminar is shown in Table 5-25.

Table 5-25: Outline of the 2nd Seminar on Collaborative Urban Development

Item	Description
Objective	<ul style="list-style-type: none"> • To share the results of the 1st seminar and questionnaire survey • To discuss on business scheme of collaborative urban development to realize Area Concept Plan in pilot area in Vientiane
Date	27 March 2024, 09:00 - 12:00 AM (Laos time)
Agenda	<ul style="list-style-type: none"> • Summary of 1st Seminar and result of questionnaire survey • Area Concept Plan of Pilot Area and Project List • Draft of Project Scheme of Collaborative Urban Development
Participants	<ul style="list-style-type: none"> • Prof. Bounleuam SISOULATH, President, CLACE • Lao Association of Travel Agents (LATA) • Hotel and Restaurant Association of Lao • Young Entrepreneurs Association of Laos • Small and Medium Enterprise Promotion Association of Lao PDR • State Pharmaceutical Manufacturing Enterprise No.3 • Vientiane Food State Enterprise • DESIGN GROUP SOLE CO., Ltd • Chansavang Civil Engineering and Consultant Sole Co., Ltd • Lao KBN Medical Products Co., Ltd.

Item	Description
	<ul style="list-style-type: none"> • VIMANA Design-Construction Co., Ltd. • K&B Furniture Factory
Results of Discussion	<ul style="list-style-type: none"> • As a private business, there is strong interest in collaborative urban development projects. However, during discussions, the following challenges in project implementation were highlighted: <ul style="list-style-type: none"> ➢ To implement collaborative urban development projects, improving accessibility and infrastructure development must be prioritized. Private businesses are expected to participate for the benefits they can gain, so support from the government (both financial and policy-related) is necessary. ➢ Collaborative urban development targeting the operation of public facilities like museums is considered feasible and an effective approach. It is necessary for the government to clarify its implementation structure. ➢ It is essential to assess whether the collaborative urban development projects align with government policies.

Source: JICA Expert Team



Source: JICA Expert Team

Figure 5-32: Photos of the 2nd Seminar on Collaborative Urban Development

(3) 3rd Seminar on Collaborative Urban Development (as the 8th UMP)

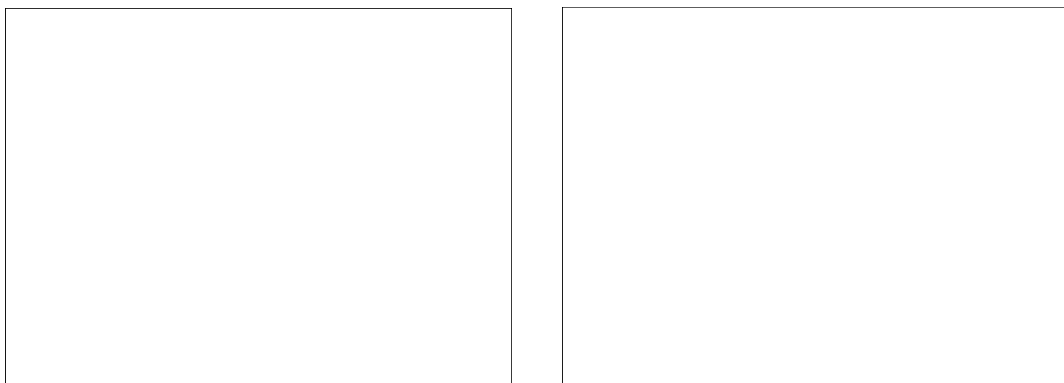
The 3rd seminar on Collaborative Urban Development was held on May 23, 2024. This seminar was conducted as the 8th UMP (Urban Management Plan) meeting. The seminar included an introduction to the Collaborative Urban Development Guidelines and an explanation of future initiatives by C/P for advancing collaborative urban development projects. An overview of the third seminar is shown in Table 5-26.

Table 5-26: Outline of the 3rd Seminar on Collaborative Urban Development

Item	Description
Objective	<ul style="list-style-type: none"> • To share Guidelines of Collaborative Urban Development • To make a consensus on sustainable operation of UMP and GIS-PF
Date	<ul style="list-style-type: none"> • 23 May 2024, 8:30 - 12:00 AM (Laos time)
Agenda	<ul style="list-style-type: none"> • Guidelines of Collaborative Urban Development • Next Actions for Collaborative Urban Development project in Vientiane • Sustainable Operation and Utilization of GIS-PF

Item	Description
	<ul style="list-style-type: none"> • Way forward for Operation of UMP
Participants	<ul style="list-style-type: none"> • ALACE • Hotel and Restaurant Association of Lao • Association of Lao Architects and Civil Engineers • Young Entrepreneurs Association of Laos • Small and Medium Enterprise Promotion Association of Lao PDR • State Pharmaceutical Manufacturing Enterprise No.3 • Sabai Cleaning Co., Ltd • DESIGN GROUP SOLE Co., Ltd • Chansavang Civil Engineering and Consultant Sole Co., Ltd • Lao KBN Medical Products Co., Ltd. • VIMANA Design-Construction Co., Ltd. • Micro Finance Deposits Taking Patoukham • APA incorporate Sole Co., Ltd. • Vorachit Wood Carving Private Enterprise
Results of Discussion	<ul style="list-style-type: none"> • As a private business, there is high interest in collaborative urban development projects. However, several challenges in advancing these projects were identified and discussed: <ul style="list-style-type: none"> ➢ There has been insufficient dialogue between the public and private sectors in urban development. For collaborative urban development to progress, the government's role in involving private businesses is crucial. Successful implementation of collaborative urban development will be more beneficial for private businesses and residents. It is necessary to clarify the division of roles between the public and private sectors in urban management. The government needs to specify what it expects from private business operator. ➢ Using GIS-PF (Geographic Information System Platform) to identify developments not based on construction permits or regulations is important. To reflect various types of information in GIS-PF, cooperation between different departments is required, and it must be used effectively. ➢ GIS-PF is very useful, and creating an environment where its use can be quickly learned is necessary. There should also be an environment accessible to the general public. Promotion activities to encourage usage are also a valuable means.

Source: JICA Expert Team



Source: JICA Expert Team

Figure 5-33: Photos of the 3rd Seminar on Collaborative Urban Development

5.9 Capacity Enhancement through the Activities of Output 3

Through the activities of Output 3, the capacity enhancement of the C/Ps was achieved as shown in Table 5-27.

Table 5-27: Achievement of Capacity Enhancement through Activity of Output 3

Category of Activity	Capacity Enhancement of C/Ps
Analyzing Issue on Urban Development	<ul style="list-style-type: none"> • The current conditions and issues of urban development projects in Vientiane were discussed from the viewpoints of the legal system, organizational and financial aspects, status of each plan, development trends, etc., and the knowledge and understanding of these issues were improved by sharing the basic planning survey report that summarized the results of the analysis of the current conditions. (Already conducted in Phase 1)
Area Concept Planning	<ul style="list-style-type: none"> • Through the selection of pilot areas, knowledge and understanding of the target area selection method based on objective evaluation was improved. • Through the subcontracted management of topographic mapping and basic survey for the pilot area, knowledge and experience of survey contents and methods, and information collection methods were obtained. • Through the SWOT analysis of the pilot areas, the knowledge and understanding of district analysis methods in planning was improved. • Improved knowledge and understanding of planning methods and WS implementation methods based on a participatory approach through stakeholder WS activities. • Improved knowledge and understanding of the need for action plans from the perspective of project implementation and how to prepare them, which is necessary to realize the drafted development plans through the discussion of action plans. • By sharing the complete set of GIS data for the area concept plan, basic information was obtained for future detailed study and commercialization of the plan by C/P. • The Area Concept Plan was agreed upon by the MoM signed by Director General of each C/P (DHUP, PTI, and DPWT). This agreement will serve as the basic plan to promote future urban development.
Collaborative Urban Development	<ul style="list-style-type: none"> • Improved understanding of the objectives, target projects, and mechanisms of public-private partnership city planning through explanations of examples and mechanisms of public-private partnership city planning in Japan and discussions of the objectives, target projects, and mechanisms of guidelines for promotion of collaborative urban development in Vientiane.. • Through the implementation of a total of three workshops and questionnaires with private operators and related organizations, the knowledge and experience in planning and implementing workshops and questionnaires for exchanging opinions with private operators was improved. • Through the exchange of opinions and questionnaires at the workshop, the expectations and ideas of related organizations and private businesses regarding guidelines for promotion of collaborative urban development and the need for support from the government side were improved. • Through the preparation of an action plan for the promotion of C/P's collaborative urban development projects presented at the 8th UMP, the understanding of the role of C/P and its specific future activities was improved..
Formulation of Guideline	<ul style="list-style-type: none"> • The various methods and studies related to the area concept plan development were compiled in the planning section of the guidelines for promotion of collaborative urban development. This enables the C/P to be used as a tool for future development planning. • The content of the projects and project promotion methods obtained through the study activities were compiled into the guidelines for promotion of collaborative urban development, which can be used as a tool for the future planning and

Category of Activity	Capacity Enhancement of C/Ps
	implementation of collaborative urban development by C/P. • The guidelines for promotion of collaborative urban development were approved by the DPWT on July 26, 2024.

Source: JICA Expert Team

Chapter 6. Achievement of Output 4

6.1 Summary

(1) Objective of Output 4

Output 4 aims to enhance the capacity to analyze the issues on the building safety administration through the formulation of the Building Code.

As the background of Output 4, the draft of the Lao Building Code (Lao B/C) was developed by DHUP in 2016 by referring to other country codes and discussion in the third country such as Thailand. However, it could not be finalized due to the lack of human resources of the Lao side.

(2) Necessity of Lao National Building Code

The Lao B/C was drafted in 2016, but the circumstances surrounding building administration have changed since then. Therefore, it became necessary to supplement the B/C drafted in 2016 in accordance with the current situation as follows:

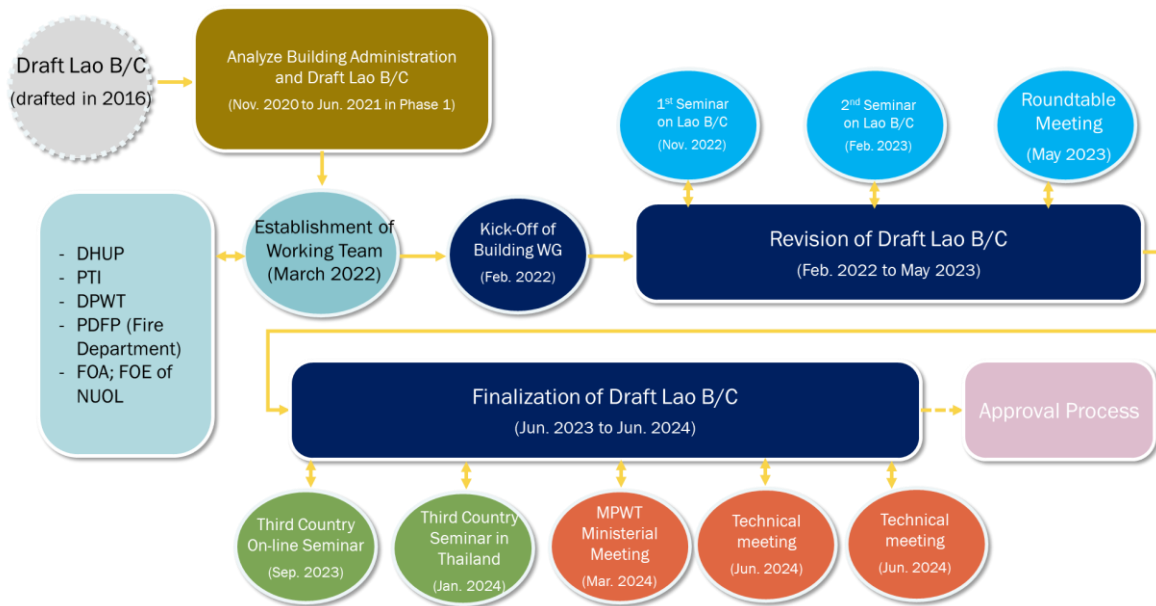
- a. Securing safety of large-scale/high-rise/risk buildings
 - In 2019-2022, 10% of new buildings are large-scale buildings. (77 large-scale buildings/ total 780 new buildings)
 - Need to control building design and construction for the structure and fire safety, especially
- b. Establishment of Lao original building code conforming to international standards
 - Currently, large-scale buildings in Laos are mostly designed by referring to other country's standards.
 - Therefore, it is difficult for Lao administrative agencies without original building code to examine and guide the development large-scale buildings.

(3) Overview of Activity of Output 4

The overview of the activities carried out in Output 4 is shown in Figure 6-1. The activity began with the analysis of the previous draft of Lao B/C. The Building WG of the CDUDCP revised the Lao B/C through discussions in the WG, stakeholder seminars, and seminars involving third countries. As the first step for the approval process, the final draft of Lao B/C was discussed at the MPWT Ministerial Meeting on March 1, 2024. The Building WG completed the final version of the Lao B/C in June 2024. The Lao B/C will be approved as the MPWT Minister's decision.

As part of the process towards approval, a consultation meeting within DHUP (where the Building WG briefed the DG) was held in early August 2024. Following confirmation by the DG, the documents was submitted to the Minister of MPWT in late August 2024. After confirmation by DG, the Lao B/C will be submitted to the Minister of MPWT for the approval. According to the DHUP, the Minister might

suggest holding a stakeholder meeting.



Source: JICA Expert Team

Figure 6-1: Overview of Activity of Output 4

(4) Achievement of Output 4

The summary of achievement of Output 4 activity based on the PDM is shown in Table 6-1.

Table 6-1: Summary of Achievement of Output 4

Activities and Work Items	Achievements
4.1 To analyze building administration in Vientiane	<ul style="list-style-type: none"> Collected data and information related to building management. Explained the draft Lao B/C to construction-related personnel, conducted questionnaire surveys and interviews with individual organizations. Adjusted the current situation and problems of building management identified to the contents of the draft Lao B/C.
4.2 To analyze the draft national Building Code (B/C)	<ul style="list-style-type: none"> Analyzed the contents of the draft Lao B/C based on questions to the C/P. Discussed the purpose and objectives of the draft Lao B/C with the C/P and clarified the contents. Explained the chapters and items, and clarified the scope covered by the Lao B/C.
4.3 To identify the points to be improved in the structure of the draft national B/C	<ul style="list-style-type: none"> Proposed and discussed improvements to the counterpart based on activity 4.2. Prioritized items related to basic building safety (Structure and Fire Safety) and added secondary items.
4.4 To formulate revised structure of the draft national B/C	<ul style="list-style-type: none"> The appropriateness of the improvement items of the draft Lao B/C was examined from the chapter and item. Examined the consistency with existing laws and regulations. Discussed the structure of the draft Lao B/C main text and Annex in accordance with the "Law on Legislation." Discussed the existing Annex along with the specification. Formulated the final version of the draft Lao B/C.
4.5 To study and advice the other countries technical standard to be	<ul style="list-style-type: none"> Introduced examples of the structure and regulatory values of B/Cs of other countries.

Activities and Work Items	Achievements
applied to draft national B/C	<ul style="list-style-type: none"> Confirmed that the “structure” code is based on the US code (IBC) that has been used in NUOL, and the “fire safety” code is based on the Singapore code, which has a clear composition.
4.6 To finalize the draft national B/C	<ul style="list-style-type: none"> Distributed the draft Lao B/C (ver.2) at the Lao B/C seminar to construction related Engineer/Architects. Examined the draft Lao B/C (ver.3) by Building WG and NUOL professors. Discussed final draft of Lao B/C in MPWT meeting on March 1, 2024. The official final version of the draft Lao B/C has been prepared by DHUP, and the final adjustments to terminology were made from June 2024, and preparations are underway for MPWT Ministerial Approval. (The final version of the draft Lao B/C was submitted to the Minister of MPWT for the approval in late August 2024.)

Source: JICA Expert Team

6.2 Building Working Group

(1) Organization of Building Working Group

The members of the Building Working Group (Building WG) were formally assigned in February 2022. The JICA Expert Team requested to invite several professionals from outside of the C/P agencies, because most of the members from the C/Ps were not familiar on building regulations. Based on the request, professionals from the National University of Laos (NUOL) and the Department of Firefighting and Fire Prevention, Ministry of Public Security were additionally assigned as Building WG members. The member list is shown in Table 6-2.

Table 6-2: Member List of Building WG

Name	Position
DHUP	
Mr. Nalongxay MYVAPADITH *	Deputy Director General
Ms. Visaphone INTHILATH **	Deputy Director General
Mr. Akhom PHONGPASEUTH	Acting Director, Division of Building Construction Control
Mr. Phayboun SOUNAKEN	Technical Staff, Division of Building Construction Control
Mr. Thavisouk PHOMVILAY	Technical Staff, Division of Building Construction Control
Mr. Souksavanh HANEPHOM	Technical Staff, Division of Urban Planning
PTI	
Ms. Phattharavady UDOMDETH	Technical Staff
DPWT	
Mr. Sinthanou PHANTHAVONG	Technical Staff
Mr. Xaysana PHETXIENGDA	Technical Staff
Mr. Vientiane	Technical Staff
Faculty of Architecture/ NUOL	
Mr. Xayoudom MEUANGPAK	Director, Division of Building Technicians
Dr. Douangmala KOUNSANA	Deputy Director, Department of Research and Technical Service
Faculty of Engineering/ NUOL	
Assoc. Prof. Khampaseuth THEPVONGSA	Director, Division of Public Works
Dr. Khamhou SAPHOUVONG	Deputy Director, Division of Public Works
Department of Firefighting and Fire Prevention, Ministry of Public Security	
(Lt.) Chittasone PHANTHAVONG,	Director, Division of Fire Safety Inspection
(Lt.) Bounlieng SOUNTHAKITH	Deputy Director, Division of Fire Safety Inspection

Note: * Team Leader, ** Sub Team Leader

Source: JICA Expert Team

(2) Building Working Group Meeting

The Building WG meetings were held 22 times to discuss the formulation of the draft Lao B/C. The summary of Building WG meeting is shown in Table 6-3.

Table 6-3: Summary of Building WG Meeting

No.	Date	Agenda	Points and Result of Discussion
#1	Jan. 24, 2022	<ul style="list-style-type: none"> Introduction of CDUDCP and activity of Output 4 Discuss activity schedule 	<ul style="list-style-type: none"> Objective and activity schedule were confirmed with C/Ps
#2	Feb. 28	<ul style="list-style-type: none"> Kick-off of Building WG Orientation for WG activities Introduction of building control for fire safety and structure safety 	<ul style="list-style-type: none"> Assigned WG members were introduced. WG activities were understood among C/P. Importance and key points of building control were understood among C/P.
#3	Mar. 16	<ul style="list-style-type: none"> Confirmation of assigned staff Discussion on the items of Draft B/C Preparation of glossary of Draft B/C 	<ul style="list-style-type: none"> Comparison of composition plans of B/C on Fire safety and Structure stability were discussed Presentation was made from C/P on “ The formulation of Building Code in Laos”
#4	Mar. 30	<ul style="list-style-type: none"> Selection of external experts Preparation of glossary of Draft B/C 	<ul style="list-style-type: none"> Scope of controlled buildings were discussed Definition of Fire safety and Structure stability University professor and Fire department staff joined WG.
#5	Apr. 21	<ul style="list-style-type: none"> Explanation on the configuration of Draft B/C Discussion on the article of fire safety (evacuation) Contents on structure safety 	<ul style="list-style-type: none"> Heading and numbering system were discussed, and “Law of Making Legislating” was presented Articles of “Mean of Egress” were presented Composition and definitions on Structure stability were discussed.
#6	May 18	<ul style="list-style-type: none"> Discussion on the Draft B/C Explanation of Active/Passive design on fire safety Preparation of questionnaire of their role on design to Lao domestic companies Explanation of Seismic Ground Motion Values on structure safety 	<ul style="list-style-type: none"> Passive design is recommendable for Lao B/C to save construction cost. Target building to regulate shall be more variety. Seismic/wind forces to be mentioned on B/C. Continue more data collection on Lao companies.
#7	Jun. 7	<ul style="list-style-type: none"> Regulation of fire safety Explanation of Electrical/Mechanical safety system Explanation of Wind load and Combination Load 	<ul style="list-style-type: none"> Discuss range of regulation on Fire Hydrant/Sprinkler and smoke exhaust systems (active system) in Lao B/C. Wind load in Laos is researched in National University of Laos (NUOL).
#8	Jun. 27	<ul style="list-style-type: none"> Regulation of fire safety: additional requirements on Highrise Building Construction criterion: Seismic load in Laos 	<ul style="list-style-type: none"> Fire Stair/Fire Lift, Pressurized Stair and Sprinkler systems for Super HR buildings. Proposal of Seismic load for three zones in Laos.
#9	Jul. 13	<ul style="list-style-type: none"> Regulation of fire safety: Firemen and Fire truck access to Super HR building. Construction criterion: Explanation of Live loads. 	<ul style="list-style-type: none"> Regulations on fire access for firefighting and rescue, and Fire Monitor for large building. Clarification of Live load.
#10	Aug. 22	<ul style="list-style-type: none"> Explanation of modified Article sentence, added Article of Soils and Foundations, Concrete and 	<ul style="list-style-type: none"> The necessity of for small and medium-sized buildings should comply with laws and regulations. Explanation on load combination, fire resistance,

No.	Date	Agenda	Points and Result of Discussion
		Steel.	and durability. • Additional provisions on Soil and foundation, Concrete, Steel.
#11	Sep. 8	<ul style="list-style-type: none"> • Additional recommendation of improvement on Main text of Lao B/C. • Clarification of examination and inspection flow. 	<ul style="list-style-type: none"> • Add “Definitions” and use technical terms. • Retroactive is affected only in extensions or renovations for existing building. • Recommended Specifications list is necessary. • Importance of Design review, Inspection and issue of Occupancy Certificate and Monitoring.
#12	Sep. 29	<ul style="list-style-type: none"> • Classification of regulated buildings • Commentary on Main text (firefighting) • Explanation of added Annex of Soil investigation, Footings and Pile Foundations. 	<ul style="list-style-type: none"> • Controlled building type are divided into four and further regulation by application of each type. • Explanation of Main text of Fire Safety by illustration partially. • Illustrates the importance of ground surveys and foundations and piles.
#13	Oct. 20	<ul style="list-style-type: none"> • Points to improve Main text • Discussion of an excess or deficiency in the structure and firefighting. • Explanation of added Annex of Beams and Columns. 	<ul style="list-style-type: none"> • Classification of regulated buildings, explanation of the need for technical terms. • Excess or lack of technical regulations in the structure. • Chapters 9-12 discuss inspections, responsible bodies, and rewards and punishments. • Requirements of covering concrete to reinforced bar for beam and column.
#14	Nov. 4	<ul style="list-style-type: none"> • Implementation method and system, etc. for compliance with Lao B/C • In the structure, about the walls and steel frame provisions • Explanation of added Annex of Walls, Structural steel and Connection. 	<ul style="list-style-type: none"> • Design review, completion inspection, and renewal inspection must be acceptable for the implementation of Lao B/C. • Include the Fire Department as the implementing agency on Fire Safety. • Use the check sheet to efficiently proceed with application screening, interim inspection, and final confirmation. • Requirements of size of Concrete bearing wall and beam/column and Steel structure.
#15	Nov. 23	<ul style="list-style-type: none"> • Preparation of Lao B/C Seminar • Confirmation of materials • List of participants / companies • Explanation of Questionnaire survey • Schedule after seminar 	<ul style="list-style-type: none"> • Confirmed on Seminar: purpose, date, venue, materials, participants, and presentations. • Distribute Lao B/C Draft to participants for the first time. • Questionnaire survey investigates the size, task, and relationship with Lao B/C of construction personnel.
#16	Jan. 19, 2023	<ul style="list-style-type: none"> • To report the result of the questionnaire on the Lao B/C • To discuss the way forward to finalize the Lao B/C 	<ul style="list-style-type: none"> • To determine all conditions such as numerical values, requirements as a draft version, the WG member will finalize Lao B/C by basing on collected comments. • The Association of Lao Architect and Civil Engineer (ALACE) is a potential for disseminating Lao B/C to related applicants.
#17	Feb. 2	<ul style="list-style-type: none"> • Preparation of the 2nd B/C seminar for Line Ministries 	<ul style="list-style-type: none"> • Discussion on presentation materials. • Points for discussion on structure safety and fire safety.
#18	Feb. 16	<ul style="list-style-type: none"> • Final arrangement for the 2nd B/C seminar 	<ul style="list-style-type: none"> • Confirmed Agenda, participants list, presentation materials and items for questionnaire
#19	Apr. 11	<ul style="list-style-type: none"> • Introduce the comments from the 2nd Lao B/C seminar 	<ul style="list-style-type: none"> • Articles 1 to 3 with the context of making Legislation Law 2017.

No.	Date	Agenda	Points and Result of Discussion
		<ul style="list-style-type: none"> Propose to have the small technical WG meeting Discuss legislation and implementation articles 	<ul style="list-style-type: none"> Clarify source from which code/ standard for reference. Clarify size/ height of building to be controlled more in details. Make clear inspector's qualification in Chapter 9. Include the Fire Department as the implementing agency on fire safety. Use the check sheet to efficiently proceed with application screening, interim inspection, and final confirmation.
#20	Jul. 4	<ul style="list-style-type: none"> Implementation method and system, etc., for compliance with Lao B/C In the structure, about the walls and steel frame provisions Explanation of added annex of walls, structural steel, and connection 	<ul style="list-style-type: none"> Define wind and earthquake load factors for each zone and seismic data are provided by NUOL/ ALACE. Include the Fire Department as the implementing agency on Fire Safety. Confirmed outline of the third country seminar and tentative schedule to the ministerial meeting for the Lao B/C draft.
#21	Jan. 16, 2024	<ul style="list-style-type: none"> Discussion on finalization of draft of Lao B/C 	<ul style="list-style-type: none"> Articles on the draft of Lao B/C were discussed Schedule of finalization and event before submission for approval was confirmed.
#22	Jun. 14	<ul style="list-style-type: none"> Discussion on finalization of draft of Lao B/C 	<ul style="list-style-type: none"> Definitions of technical terminology were clarified.

Source: JICA Expert Team

6.3 Stakeholder Seminar for Draft Lao B/C

The stakeholder seminars on the draft Lao B/C were held to discuss with stakeholders such as other agencies and private design and construction companies. The summary of each seminar is shown in Table 6-4.

Aside from these seminars by the CDUDCP, the MPWT ministerial meeting was internally held by the DHUP on March 1, 2024 to discuss the draft of Lao B/C.

Table 6-4: Summary of Stakeholder Seminar on Lao B/C

Title	Date	Agenda	Points and Result of Discussion
1 st Lao B/C seminar	Nov. 30, 2022	<ul style="list-style-type: none"> Background and objective of the draft Lao B/C Instruction for questionnaire survey on the draft Lao B/C Q&A and Questionnaire survey 	<ul style="list-style-type: none"> Explained the background and current status of the draft Lao B/C to 30 people involved in construction. Discussed concerns about the draft Lao B/C. Affiliated companies are not deeply involved in building standards in normal practice.
2 nd Stakeholder Seminar	Feb. 24, 2023	<ul style="list-style-type: none"> Presentation for line ministries and professional architects/ engineers Objective and contents of the draft Lao B/C 	<ul style="list-style-type: none"> Collected comments from related ministries and technical experts. Analyze the comments and consider correcting the draft Lao B/C.
Roundtable Meeting	May 11, 2023	<ul style="list-style-type: none"> Review the revised the draft Lao B/C and discuss improvements. 	<ul style="list-style-type: none"> Provide the minimum requirements of the ACI Code Define wind and seismic load factors for each

Title	Date	Agenda	Points and Result of Discussion
		<ul style="list-style-type: none"> Discuss if there are provisions, figures, or articles to be adjusted. Discuss if there are any items or articles to be added or revised. Discuss the formation of a committee to continuously revise the draft Lao B/C. 	<p>zone/ district.</p> <ul style="list-style-type: none"> Agree with the determination of figures and specifications in the chapter on fire safety. Request ALACE to consider the determination of structural safety factor, wind load, and seismic load factor. Agree to add definitions of technical terms. WG reflects useful comments and discussions to understand the draft Lao B/C.

Source: JICA Expert Team

(1) 1st Lao B/C Seminar

a) Objective

The 1st Lao B/C seminar was held on November 30, 2022, at the 4th floor conference room of Landmark Mekong Riverside Hotel. The purpose of this seminar is to introduce the draft B/C to private sectors related to the building business and to gather their comments to update the draft B/C.

b) Agenda

The seminar was organized by the Building WG members from DHUP, PTI, DPWT, Fire Department, NUOL and Lao Association of Architecture and Civil Engineering, and attended by 30 private companies conducting the business of building design and building construction. The seminar agenda is shown in Table 6-5 and the list of participating private companies is shown in Table 6-6.

Table 6-5: Agenda of 1st Lao B/C Seminar

Time	Topics	Presenter
9:00 – 9:05	Opening remarks	Ms. Visaphone INTHILATH, Deputy Director General, DHUP
9:05 – 9:20	Background and objective of Lao B/C	Mr. Akhom PHONGPASEUTH, Director, Division of Building Construction Control, DHUP
9:20 – 10:00	Contents of draft Lao B/C	Mr. Tetsuro NISHIMURA, JICA Expert
10:00 – 10:15	Coffee break	All participants
10:15 – 11:10	Q&A	Ms. Visaphone INTHILATH, Deputy Director General, DHUP
11:10 – 11:25	Instruction for questionnaire survey on draft Lao B/C	Mr. Akihito MUTO, JICA Expert
11:25 – 11:35	Closing remarks	Ms. Visaphone INTHILATH, Deputy Director General, DHUP

Source: JICA Expert Team

Table 6-6: Participants from Design and Construction Companies in 1st Lao B/C Seminar

No.	Name of Company
1	HOUNGSANAXAY Sole Co.,Ltd
2	Li Construction Survey & Design Sole Co.,Ltd
3	Archgentek Servey-Design Architect Sole Co.,Ltd
4	MTV Design and Construction Sole Co.,Ltd
5	Gen design and Survey building Sole Co.,Ltd
6	EAC Design Survey Construction Sole Co.,Ltd
7	SINTHAXAY Survey Design and Construction Sole Co.,Ltd

No.	Name of Company
8	BCI Sole Co.,Ltd
9	SAKOL VILLAGE (LAO) Sole Co.,Ltd
10	Great (Lao) survey design and construction contractor Co.,Ltd
11	PHETLUANGSANAXAY Survey Design and Construction Sole Co.,Ltd
12	Thanongxay Construction Development and Consultantcy Sole Co.,Ltd
13	NEW CENTURY CONSTRUCTION CO.,LTD
14	Viengsavanhsup Civil Engineer Building Design and Construction Complete Sole Co.,Ltd
15	INFINITY SURVEY,DESIGN AND CONSTRUCTION Sole Co.,Ltd
16	Archiineer Associate Survey, Design and Consultant Co.,Ltd
17	PISECCON(Lao) sole co.,ltd
18	Beyond PAP Consultants Sole Co.,Ltd
19	PDC Patana Survey-Design & Consultant Sole Co.,Ltd
20	BPS SURVEY ENGINEERING-DESIGN SOLE CO.,LTD
21	SOUKMEXAI DESIGN AND BUILDING CONSTRUCTION CO.,LTD
22	PK Trading and Engineering Limited
23	TK GROUP Co.,Ltd.
24	AIDC Asia Investment Development and Construction Sole.Co.Ltd
25	EDC Engineering Design and Consultant Co.,Ltd
26	Sokxay Construction Sole Co.,ltd
27	Pasasok Construction Building Sole Co.,Ltd
28	Xayanun Electric Limited
29	PHOENIX CONSTRUCTION SOLE CO.,LTD
30	3S Electrical Co.,Ltd

Source: JICA Expert Team

c) Result of the 1st Lao B/C Seminar

During the discussion, 15 participants actively commented on the draft Lao B/C. Currently, Laos has no building standards, and it refers to overseas regulations for architectural design and construction management. With the future enactment of the Lao B/C, it is expected that suitable building regulations aligned with the actual situation in Laos will gradually be formed. In addition, in practical operations such as the examination of building applications and site inspections, the need to improve actual design reviews and site inspections, and to make training about them through education at universities and technical schools, were remarked. The summary of the participants' comments is shown in Table 6-7.

Source: JICA Expert Team

Figure 6-2: 1st Lao B/C Seminar

Table 6-7: Participants' Comments on Draft of Lao B/C

Category	Topic	Comments/ Response
General	Scope of Application of Code and Regulations	I would like to know which regulations apply to each building class, including structural, firefighting, and material inspection. →Make it a little easier to understand.
	Regulation and Construction Cost	The development of BC or standards is related to project costs and should be considered it. →The additional cost is little for small and medium-sized buildings. High-rise and large-scale buildings require the same burden as in other countries.
	Foreign Standard /Code	Can foreign companies apply their own design standards? Overseas regulations that ensure safety from Lao B/C. →It can be applied after authority approved.
Structure safety	Refinement and Revision of Standards	Wind and seismic loads in Lao B/C are rough and will be revised in future studies. In addition, training for students at a university is required. →Due to the progress of building technology and research results, Codes and regulations need to be revised and reinforced every few years.
	Structural Safety Code	The name and number of reference code must be included in the Lao B/C (e.g., load combination formulas). →Foreign countries reference codes will be added.
Fire Safety	City Planning Requirements	Reliable information was not available on the setback conditions, the allowable height of the buildings in each urban area, also the preservation of historic buildings. →Under development by the Urban Planning WG of our team.
	Electrical Regulations	Fire from electrical system is a big issue. We request the authority to review and approve the electrical design and inspect the installation of the electrical system during the construction. →Add provisions for electricity.
Implementation System	Responsibilities of Designers and Applicants	The engineers, architects, construction companies and owner of building should monitor this Lao B/C application and comply the project. →We agree and compliance with Lao B/C is regarded as a social responsibility more than penalties.
	Design Review and Inspection System	Design companies and equipment companies must undergo a design review and inspection of installation from Authority and Fire Department. → Design review, permit and inspection are most important to secure the safety.
	Design License System	Fire safety and structure safety should be trained in educational institutions to ensure that they understand. Also License system is needed for Architect and Engineer who design the building. →Training and License system is needed to disseminate how to design safety system. In other countries, fire departments are in charge of examinations, inspections, and approvals, and Laos should do the same.

Source: JICA Expert Team

(2) 2nd Lao B/C Seminar

a) Objectives

The 2nd Lao B/C seminar as the 4th seminar on urban issue was held on February 24, 2023, at the conference room of DHUP and remotely. The purpose of this seminar was to introduce the draft B/C to line ministries and private sectors related to the building business, and to gather their technical comments to update the draft Lao B/C.

b) Agenda

The seminar was organized by the Building Working Group (Building WG) and participated by eight

line ministries, three senior engineers, and seven private consultants conducting the business of building design. The seminar agenda and the list of participants are provided in Table 6-8 and Table 6-9, respectively.

Table 6-8: Agenda of 2nd Lao B/C Seminar

Time	Topics	Presenter
8:30 – 8:50	Opening Remarks	- Dr. Viengnam DOUANGPACHANH, Director General - Mr. Minoru MATSUI, JICA Expert
8:50 – 9:05	Background and Objective of Lao B/C	Ms. Visaphone INTHILATH, Deputy Director General, DHUP
9:05 – 9:25	Contents of Draft Lao B/C	Mr. Tetsuro NISHIMURA, JICA Expert
9:25 – 9:30	Instruction for Questionnaire Survey on Draft Lao B/C	Project Team
9:30 – 9:45	Coffee Break	All participants
9:45 – 11:35	Q&A / Discussion	Led by: Dr. Viengnam DOUANGPACHANH, Director General
11:35 – 11:45	Wrap-up	Mr. Minoru MATSUI, JICA Expert
11:45 – 11:55	Closing Remarks	Dr. Viengnam DOUANGPACHANH, Director General

Source: JICA Expert Team

Table 6-9: Participants of the 2nd Lao B/C Seminar

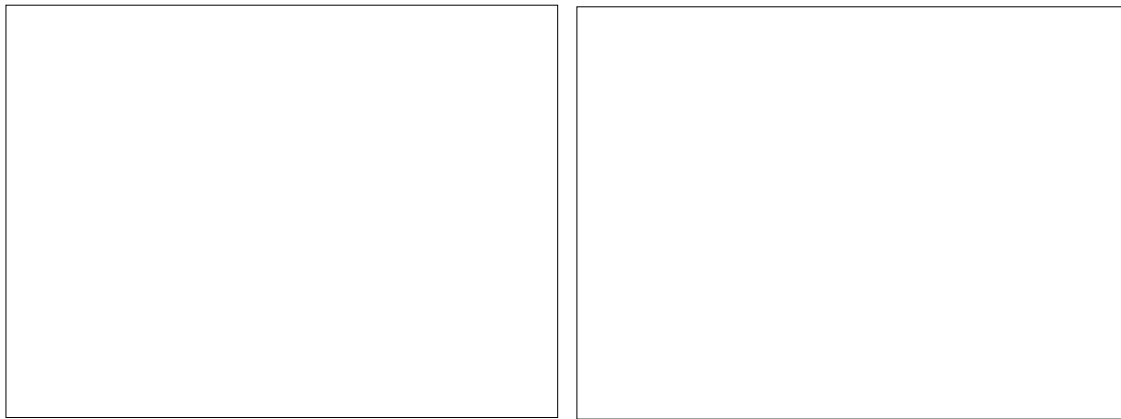
No.	Name of Participants
A	Line Ministries
1	Ministry of Planning and Investment
2	Ministry of Mines and Energy
3	Ministry of Labor and Social Welfare
4	Ministry of National Defense
5	Ministry of Natural Resources and Environment
6	Ministry of Science and Technology
7	Ministry of Health
8	Ministry of Education and Sports
9	Ministry of Planning and Investment
B	Council and Associations
10	Council of Lao Architect and Civil Engineer
11	Association of Lao Architect and Civil Engineer
C	Senior Officials
12	Dr. Thong SOPHA, Senior Engineer
13	Prof. Somphone DETHUDOME, Senior Architect
14	Mr. Khamthavy THAYPACHANE, Senior Engineer
D	Private Sector and State Enterprise
15	APA Design and Consultants
16	Leuxaysana Co., Ltd.
17	Mekong Consultants Co., Ltd.
18	State Enterprise for Survey-Design and Material Testing
19	PHOMMASONE, LG Consult and Construction
20	Tomi Atelier Architect and Design
21	ARIMA Group

Source: JICA Expert Team

c) Result of the 2nd Lao B/C Seminar

During the discussion, participants gave active comments on the draft Lao B/C, where more technically detailed comments and opinions were received compared to the previous seminar. From the building-related participants, comments were made on how to take a safety factor that matches the current technological capabilities, reflecting NUOL's research results for wind and seismic forces. In addition, there was a discussion on launching the initial version of Lao B/C as a minimum requirement, and gradually expanding the content while looking at the current situation or trends of neighboring countries.

Regarding the implementation, the Fire Department highlighted that it has a system that conducts fire safety reviews, on-site inspections, and monitoring. In addition, it was suggested that technical regulations should be discussed by smaller group of engineers, leading to the decision to organize a round table meeting.



Source: JICA Expert Team

Figure 6-3: 2nd Lao B/C Seminar

(3) Roundtable Meeting for Lao B/C

a) Objectives

The roundtable meeting for the draft Lao B/C was held on May 11, 2023, at the conference room of DHUP and remotely. The purpose of this seminar is to involve advanced engineers in construction-related matters in Laos and these engineers were invited to discuss the technical matter and to gather their comments to update the draft Lao B/C.

b) Agenda

The meeting was organized by the Building WG members and four senior engineers and seven private consultants conducting the business of building design were invited. The meeting agenda and list of participants are shown in Table 6-10 and Table 6-11, respectively.

Table 6-10: Agenda of the Roundtable Meeting on Lao B/C

Time	Topics	Presenter
8:35 – 8:45	Opening Remarks	- Dr. Viengnam DOUANGPACHANH, Director General, - Mr. Minoru MATSUI, JICA Expert
8:30 – 8:35	Background and Objective of Lao B/C	Mr. Akhom PHONGPASEUTH, Acting Director, Division of Building Construction Control, DHUP/ MPWT
8:45 – 9:15	“Structure safety, wind load and seismic force”	Mr. Yuji KUSAWAKE, JICA Expert
9:15 – 10:15	Q&A / Discussion	All participants
10:15 – 10:30	Coffee Break	All participants
10:30 – 10:50	Chapter on “Fire Safety of Lao B/C”	Mr. Tetsuro NISHIMURA, JICA Expert
10:50 – 11:40	Q&A / Discussion	All participants
11:40 – 11:45	Wrap-up	Mr. Minoru MATSUI, JICA Expert
11:45 – 12:00	Closing Remarks	Dr. Viengnam DOUANGPACHANH, Director General, DHUP

Source: JICA Expert Team

Table 6-11: Participants of the Roundtable Meeting on Lao B/C

No.	Name of Companies
A	Council and Association
1	Council of Lao Architect and Civil Engineer
2	Association of Lao Architect and Civil Engineer
B	Senior Officials
3	Dr. Thong SOPHA, Senior Engineer
4	Assoc. Prof Soukan CHITPANYA, Deputy Dean, Faculty of Architecture
5	Prof. Somphone DETHUDOME, Senior Architect
6	Mr. Khamthavy THAYPACHANE, Senior Engineer
C	Private Sector and State Enterprise
10	Assoc. Prof. Dr. Bouadam Sengkham KHOUTLAVONG, Civil Engineer, Director of NUOL Cabinet Office
11	Mr. Viengvisa SIVILAY, State Enterprise for Survey-Design and Material Testing
12	Mr. Bounkong LOVANH, ARIMA Group
13	Mr. Souliyathong SAYSANGKHY, Civil Engineer
14	Mr. Singkham PHILAVONG, Houangheuang Chaleunsap Company
15	Mr. Visit CHANTHASONE

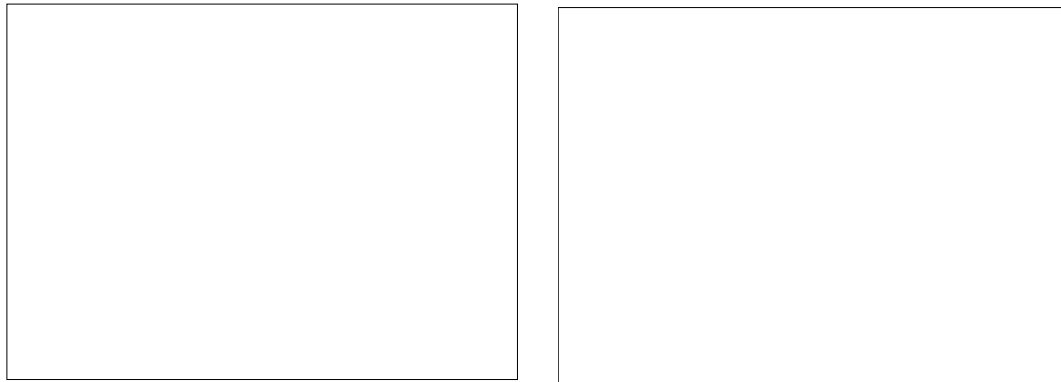
Source: JICA Expert Team

c) Result of Roundtable Meeting

Through the discussion of technical regulations by a small group of engineers, the meeting confirmed the following:

- i. Provide the minimum requirements of the American Concrete Institute (ACI) Code;
- ii. Define wind and seismic load factors for each zone / district;
- iii. Agree with the determination of figures and specifications in the chapter on fire safety;
- iv. Request ALACE to consider the determination of structural safety factor, wind load, and seismic load factor;
- v. Agree to add definitions of technical terms;
- vi. WG reflects useful comments and discussions to understand Lao B/C; and

Based on the above discussions, ALACE formally confirms the above item ii) and iv) to DHUP.



Source: JICA Expert Team

Figure 6-4: Roundtable Meeting on Lao B/C

6.4 Third Country Seminar

The third country seminars were held two times to learn B/C, and the operation in other countries. The summary of each seminar is shown in Table 6-12.

Table 6-12: Summary of Third Country Seminar

Title	Date	Agenda	Points and Result of Discussion
Third Country On-line Seminar with Singapore	Sep. 14 2023	<ul style="list-style-type: none"> To learn the quality and safety control on construction site in Singapore. 	<ul style="list-style-type: none"> Quality and safety control for foundation structure inspections (ECC & NDCS Project) Quality and safety control for medium-scale building inspections (ICA Project)
Third Country Seminar in Thailand	Jan 19 to Feb 2, 2024 (five days)	<ul style="list-style-type: none"> Visited to DPT, BMA and University of Chulalongkorn / Testing Institute Learned and discussed on building safety system in Thailand. 	<ul style="list-style-type: none"> Learned on legal system of BC in Thailand and related law. Learned on actual building control system in BMA and its One-stop Service Center Learned on Material Testing and building safety tests for establishing standards Observed how BC is complied with at actual construction sites and completed buildings.

Source: JICA Expert Team

(1) Third Country Online Seminar with Singapore

a) Reasons for selecting the seminar in Singapore and Circumstance of Cancellation

The third country seminar on B/C in Singapore was originally scheduled to be held in September 2023.

The reasons of selecting Singapore are as follows:

- Singapore is one of the neighboring countries of Laos,
- Singapore has systematically organized B/C,
- Since B/C and fire codes are formulated in English in Singapore, it is relatively easy to reflect Lao B/C that use a lot of technical terms, and
- It is easy to identify on-site visiting for large-scale building that Lao B/C will be targeting.

Thailand was also a candidate as a neighboring country, but C/P had taken B/C seminar in Thailand two times previously, and C/P requested that the seminar be held except for Thailand to JICA Expert Team.

The JICA Expert Team contacted the Building Construction Authority of Singapore (BCA) through Nippon Koei Singapore office and held a meeting with BCA on January 9, 2023. After the receiving positive response for lectures and on-site visiting from BCA, C/P sent an official letter on request seminar to BCA on April 5, 2023, while the JICA Expert Team began coordinating details such as contents of lectures and location of site visiting with BCA and the Singapore Civil Defense Force (SCDF: responsible for firefighting). The JICA Expert Team also coordinated site visiting with material testing institute in Singapore and private construction companies in parallel.

Through coordination between the JICA Expert Team and BCA, the third country seminar was scheduled from September 10 to 16, 2023, and preparations were proceeding. However, Strategy Department, contact office of BCA side, informed the JICA Expert Team that it was difficult to host the seminar on August 10, 2023. The reasons for rejection are as follows:

- It is difficult to assign appropriate instructors within BCA, and
- The Strategy Department was coordinating within BCA, but they could not obtain consensus from other departments for hosting the seminar.

The JICA Expert Team determined that it would be ineffective to hold the seminar without participation of BCA and SCDF and explained the cancellation of the seminar in Singapore to C/P on August 24, 2023. After receiving C/P's consensus, the JICA Expert Team changed country to Thailand and began preparations for the seminar again.

On the other hand, the Singapore branch of Penta-Ocean Construction Co., Ltd., a candidate of the lecturer, had already begun preparations for the lecture, therefore, the JICA Expert Team requested them to hold a seminar online, and they approved it.

b) Objective

The online seminar aims to inform the quality and safety control for large- and medium-scale buildings in Singapore. It was held on September 14, 2023.

c) Agenda

The seminar was organized by the Building WG members from DHUP, PTI, DPWT, Fire Department, NUOL, and Ministry of Public Security. Penta Ocean Construction Co., Ltd. was invited as a presenter. The agenda and list of participants are shown in Table 6-13 and Table 6-14, respectively.

Table 6-13: Agenda of the Online Seminar with Singapore

Time	Topics	Presenter
13:00 – 13:05	Opening	Mr. Minoru MATSUI, JICA Expert

Time	Topics	Presenter
13:05 – 13:45 (40 min)	Quality and Safety Control for Foundation Structure Inspections (ECC & NDCS Project)	Penta Ocean Construction Co., LTD.
13:45 – 14:05 (20 min)	Q & A	
14:05 – 14:45 (40 min)	Quality and Safety Control for Medium-scale Building Inspections (ICA Project)	Penta Ocean Construction Co., LTD.
14:45 – 15:05 (20 min)	Q & A	
15:05 – 15:20	Warp-up and Closing	Mr. Tetsuro NISHIMURA, JICA Expert

Source: JICA Expert Team

Table 6-14: Participants of the Online Seminar with Singapore

Organization	Name of Participant
DHUP	- Ms. Visaphone INTHILATH, Deputy Director General, - Mr. Akhom PHONGPASEUTH, Acting Director, Division of Building Control, - Mr. Saykham SOUKSAVANH, Deputy Director, Division of Building Control - Mr. Phayboun SOUNAKEN, Deputy Director, Division of Building Control - Mr. Phavilay PHANALASY, Technical Staff, Division of Building Construction Control
PTI	- Ms. Sengchane LOUSA,
NUOL	Faculty of Architecture: - Mr. Xayoudom MEUANGPAK, Director, Division of Building Technology - Assoc. Prof. Douangmala KOUNSANA, Deputy Director, Department of Research and Technical Service
Ministry of Public Security	- Lieutenant Colonel (Lt.) Chittasone PHANTHAVONG, Director, Division of Fire Safety Inspection, Police Department of Firefighting and Fire Prevention

Source: JICA Expert Team

(2) Third Country B/C Seminar in Thailand

a) Objective

The B/C seminar in Thailand was held from January 29 to February 2 in Bangkok. The purpose of the seminar is to learn the legal framework of building control, B/C contents and permit procedure, to learn administrative work for the B/C operation (design review, inspection, suggestion), and to feedback for the finalization of Lao B/C.

The reason for selecting Thailand is that, among Laos' neighboring countries, it has relatively well-organized building code.

b) Agenda

The seminar was organized by the JICA Expert Team and the Building WG members were invited. From the Thai side, the Department of Public Works and Town & Country Planning (DPT), Bangkok Metropolitan Administration (BMA) and Fire Safety Research Center, Chulalongkorn University Saraburi (FSRC) were invited as lecturers. The seminar agenda and list of participants are shown in Table 6-15 and Table 6-16, respectively.

Table 6-15: Agenda of the B/C Seminar in Thailand

Date	Time	Style	Contents	Place
Jan. 29			Move from Vientiane to Bangkok, QV445	
Jan. 30	A.M.	Lecture	Outline of Building Control System in Thailand - Legal Framework of Building Control	DPT
		Lecture	- Outline of Building Code and other regulations	
		Lecture	Operation of building permit - Role of DPT, other agency and local authority for building permit (incl. online application); Management of permit data	
	P.M.	Lecture	Detail of B/C and other related regulations - Code/standard for Structure Safety	
		Lecture	-Code/standard for Fire Safety	
Jan. 31	A.M.	Lecture	Administrative work for building permit in local authority - Outline of building permit procedure in local authority	BMA
		Lecture	- Application and design review for building permit - Site inspection and monitoring	
	P.M.	Site Visit	- Middle size buildings (to observe structure and fire safety) (Commercial building, high-risk building)	Dusit Central Park, Grande Center Point Surawong
Feb. 1	A.M.	Lecture Site Visit	Construction Material Management - Outline of material testing system for construction. - Standard for construction material - Visiting testing lab and testing system	FSRC, Chulalongkorn University (Saraburi)
	P.M.		Back to Bangkok	
Feb. 2	A.M.	Work	Preparation of WS and discussion	DPT
		Presenta tion	Summary and close session	
	P.M.		Move from Bangkok to Vientiane, QV446	

Source: JICA Expert Team

Table 6-16: Participants of the B/C Seminar in Thailand

No.	Name	Affiliation	Role
1	Ms. Visaphone INTILATH	Department of Housing and Urban Planning, Ministry of Public Works and Transport	Deputy Director General
2	Mr. Chanthamixay PHASANGTHONG	Division of Inspection, Department of Housing and Urban Planning, Ministry of Public Works and Transport	Director
3	Mr. Saykham SOUKSAVAN	Division of Building Control, Department of Housing and Urban Planning, Ministry of Public Works and Transport	Deputy Director
4	Mr. Phaiboun SOUNAKHEN	Division of Building Control, Department of Housing and Urban Planning, Ministry of Public Works and Transport	Technical Officer
5	Mr. Phavilay PHANALASY	Division of Building Control, Department of Housing and Urban Planning, Ministry of Public Works and Transport	Technical Officer
6	Mrs. Seangchan LUSA	Public Works and Transport Institute, Ministry of Public Works and Transport	Technical Officer
7	Mr. Vientiane BANETHONGXAY	Division of Housing and Urban Planning, Department of Public Works and Transport, Vientiane Capital	Technical Officer
8	Pol. Lieutenant Colonel (Lt.) Chittasone PHANTHAVONG	Division of Fire Safety Inspection, Police Department of Firefighting and Fire Prevention, Ministry of Public Security	Director
9	Assoc. Prof. Douangmala KOUNSANA	Department of Research and Technical Service, Faculty of Architecture, National University of Laos	Deputy Director,
10	Dr. Khamhou SAPHOUVONG	Department of Public Works Engineering, Faculty of Engineering, National University of Laos	Deputy Director

Source: JICA Expert Team

c) Result of Seminar

At the results presentation held on the final day, the participants shared what they learned from the seminar and how it could be applied in Laos. The lessons learned from the seminar are summarized in Table 6-17.

Regarding the building permit system, participants noted that Thailand's system is based on the Building Control Act and includes ministerial ordinances, ministerial notifications, technical standards, and local government ordinances. In Laos, however, local government ordinances have not been established, and this is an area that needs further discussion.

In terms of the operation of B/C, Thailand convenes special committees as needed during the building permit process to review the consistency of applications with the standards. In Laos, there is no provision for such special committees. The necessity of these committees and the framework for addressing any arising issues need to be considered.

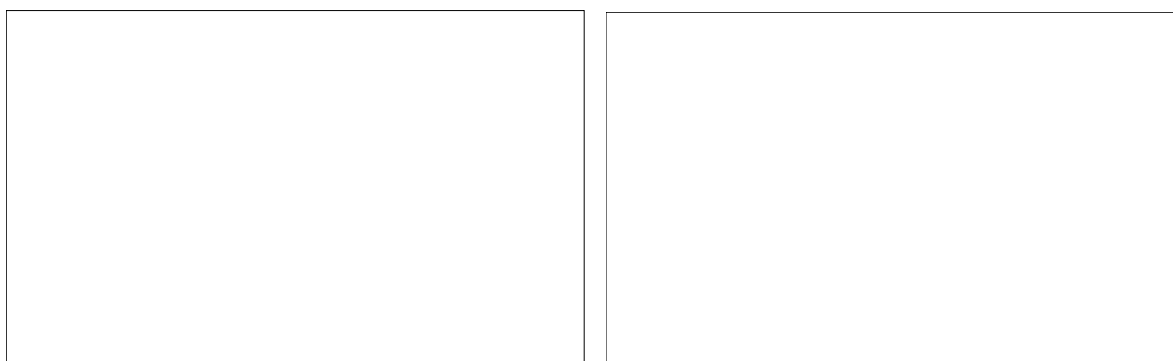
Additionally, building materials in Thailand are controlled based on performance standards. It was suggested that Laos should also emphasize performance standards while maintaining a degree of flexibility. To advance performance evaluation, there is a need to expand material testing facilities.

Regarding the finalization of the draft Lao B/C, participants observed that Thailand's system involves proposing legal amendments and expanding technical standards as the system is implemented. Laos should aim for early approval of building standards and follow a phased approach towards finalization.

Table 6-17: Lessons Learned from B/C Seminar in Thailand

items	Learned in Thailand	To do in Laos
Building Permit System	Based on Building Control Act (BCA) 1979	To discuss based on Construction Law 2009
	Consists of Ministerial ordinances, Ministerial notifications, and technical standards.	To consists of Building Code as Ministerial ordinances and Annex as technical standard.
	Local government has enacted ordinances.	To discuss the enactment of local ordinances.
Operation System for Building Safety	The legislative organization and operational local government are separated.	To enhance role of local government
	The Standards bureau that decides specifications, and the Testing laboratory are all integrated on BC.	To expand standards bureaus and material testing laboratories.
Finalization of Lao B/C	Thailand established the BCA 1979 and has made necessary revisions and expansions.	To finalize the draft B/C, disseminate it to related agencies, and begin operation.
	DPT distributes pamphlets on construction permit for dissemination of BC	To disseminate BC information to private companies and citizen in various ways

Source: JICA Expert Team



Source: JICA Expert Team

Figure 6-5: B/C Seminar in Thailand

6.5 Analysis and Identification of Improvement Points for Lao B/C

(1) Configuration of Existing Draft B/C

Revision of the table of contents of the draft Lao B/C was discussed in the Building WG. Through the discussion, the importance of regulating building designs for firefighting and building structure to ensure the safety was understood among the Building WG members. The JICA Expert Team proposed to keep the overall structure of the original draft Lao B/C developed in 2016 and to add and/or modify articles and the compositions. In addition, the JICA Expert Team proposed to develop the definition of the technical terms in Lao language. The structure of the draft Lao B/C proposed in 2016 is shown in Table 6-18.

Moreover, the Building WG members basically understood that the draft Lao B/C needs to be simplified, but it is necessary to encourage their further understanding by introducing the image of appearance of the composition of each article.

Table 6-18: Overall Structure of Original Draft of Lao B/C Developed in 2016

Chapters	Contents
Chapter 1	General Provisions
Chapter 2	Type of Buildings
Chapter 3	Design of Buildings
Chapter 4	Structure of building control
Chapter 5	Fire-Safety Systems
Chapter 6	Fire Protection Systems
Chapter 7	Additional requirements by type of buildings
Chapter 8	Health and easement (PWD)
Chapter 9	Inspection and accuracy certification
Chapter 10	Management and inspection authorities on building control
Chapter 11	Policy of good performers and measures against violators
Chapter 12	Final Provisions
Annex 1	Classification of controlled building
Annex 2	Structure of controlled buildings
Annex 3	Fire Escape System
Annex 4	Fire Protection System

Chapters	Contents
Annex 5	Additional requirements by type of buildings
Annex 6	Controlled-buildings inspection

Source: JICA Expert Team

(2) Revision of Composition of Draft Lao B/C

Revision of the composition of the draft Lao B/C was discussed through the series of Building WG based on the JICA Expert Team's proposal of the composition of each article. To follow the official form of legal document in Lao which must be described without figures and tables and limited level of the item, the proposed compositions need to be discussed in terms of the description manner and the separation of figures and tables explaining numerical and/or technical standards into the annex. Regarding annexes of the original draft Lao B/C, it needs to be revised in consideration of reorganization with figures and tables on the revised draft Lao B/C and exclusion of unnecessary items.

Additional and modified articles are shown in Table 6-19, Table 6-20, Table 6-21 and Table 6-22. In the tables, A (yellow) in the remarks indicates newly added items, M (white) indicates items that were added or modified based on the provisions of the original draft Lao B/C, and for items without any notation, the work was carried out by applying the provisions of the original draft Lao B/C as it.

Table 6-19: Revised Items of Draft B/C – Main Body (1/2)

Chapter / Items		Type of Revision A: Additional, M: Modified
Chapter 1: General Provisions		
Article 1	Objective	A
Article 2	Building control	M
Article 3	Principles of building control	M
Article 4	Scope of application	
Chapter 2: Type of controlled buildings		
Article 5	Classification of controlled buildings	
Article 6	Large buildings	M
Article 7	High-rise buildings	M
Article 8	Building in risks	M
Article 9	Adaptation and change of building use	M
Chapter 3: Design of controlled buildings		
Article 10	General provisions	
Article 11	Documentation of survey and design application	
Article 12	Specification of construction materials	
Article 13	Specification of decorative materials	
Chapter 4: Structure of Controlled Buildings		
Article 14	General	M
	1 Objectives	A
	2 Scope / Occupant loads	A
	3 Definition	A
Article 15	Analysis and design of the structure	
Article 16	Dead load	M
Article 17	Live load	M
Article 18	Natural forces and others	M
Article 19	Load combination	M
Article 20	Factor of safety	M
Article 21	Soil and Foundations	A
	1 Soil Investigation	A
	2 Foundations	A
Article 22	Concrete	M
Article 23	Property of concrete in considering the durability	M
Article 24	Fire resistance rate	M
Article 25	Steel	A
	1 Structural Steel	A
	2 Connection	A
Chapter-5 Fire Escape System		
Article 26	General	A
Section 1 Means of Escape		
Article 27	Requirement of Exits	M
Article 28	Travel Distance to exits and staircases*	M
Article 29	Component of Exit	M
Article 30	Structure of Exit Staircases	M
Article 31	Escape by Disables(PWD)	M
Section 2 Building Control		
Article 32	Fire Resistance	M
	1 Fire Resistance of structure elements	A
	2 Steel Fireproof protection	A
	3 Fire Rating of elements	M
Article 33	External wall and Roofs	A
	1 External wall structure	A
	2 Opening on the external walls	A
	3 Roof construction	A
Article 34	Fire Compartment	A
Article 35	Protection of Openings	A
Section 3 Site Planning Control		
Article 36	Fire Spread Precautions	A
Article 37	Site planning and Success by Fire services	A
Chapter-6 Fire Protection System		
Section 1 Electrical System		
Article 38	Emergency light, Exit sign	A
Article 39	Fire Alarm and Detectors	A
	1 Manual Call point	A
	2 Automatic Fire Alarm system	A
Article 40	Lightning System	A
Article 41	Safety Control Center	A

Source: JICA Expert Team

Table 6-20: Revised Items of Draft B/C – Main Body (2/2)

Chapter / Items		Type of Revision A: Additional, M: Modified
Section 2 Mechanical System		
Article 42	Mechanical Ventilation System	A
Article 43	Smoke Control System	A
Article 44	Pressurized Emergency Stair	A
Section 3 Firefighting Systems		
Article 45	Portable Fire Extinguishers	M
Article 46	Fire Hydrant system	A
	1 Indoor Fire Hydrant (IFH)	A
	2 Outdoor Fire Hydrant (OFH)	A
	3 Fire Department Connection (FDC)	A
Article 47	Sprinkler system	M
Article 48	Fire Pump System	A
	1 Fire pump system	A
	2 Fire water reservoir	A
Article 49	Emergency Lift	A
Chapter-7 Additional Requirements		
Article 50	General Requirements for High-rise or/and Large Buildings	A
	1 Target of Controlled buildings	A
	2 General Requirements for High-rise or/and Large Buildings	A
Article 51	Additional Requirements for Type of Use	A
	PG-1 Residential,	A
	PG-2 Hotel, Hostel	A
	PG-3 Hospital, Nursing home	A
	PG-4 Educational	A
	PG-5 Office	A
	PG-6 Shop, Commercial	A
	PG-7 Assembly, Theatre	A
	PG-8 Industrial, Factory	A
	PG-9 Storage, Car parking	A
Chapter 8: Health and easement		
Article 52	Health and easement considerations in buildings	
Article 53	Facilities for PWD	M
Article 54	Outside entrances-exits	M
Article 55	Safe and convenience entrance-exit door	
Article 56	Hallway inside buildings	
Article 57	Disabled restrooms	
Article 58	Determination of accessibility for blinds	
Article 59	Increasing the level of hearing	
Chapter 9: Inspection and conformity for the correction		
Article 60	Controlled building inspection	
Article 61	Design inspection and conformity certification	
Article 62	Inspection and conformity certification for construction of controlled buildings	
Article 63	Regular inspection of controlled buildings	
Article 64	Large-scale inspection of controlled buildings	
Article 65	Document form for inspect and conformity verification of the controlled building	
Chapter 10: Management and inspection authorities on building control		
Article 66	Management and inspection authorities on building control	
Article 67	Rights and obligations of Department of Housing and Urban Planning	
Article 68	Rights and obligations of Department of Public works and Transport, at provincial, capital city level	
Article 69	Rights and obligations of public works and transport office, at district, municipality/city level	
Article 70	Obligations and responsibilities of the controlled building owner	
Chapter 11: Policy of good performers and measures against violators		
Article 71	Policy of good performers	
Article 72	Measures against violators	
Article 73	Education measure	
Article 74	Legal measure	
Chapter 12: Final Provisions		
Article 75	Implementation	
Article 76	Effectiveness	

Source: JICA Expert Team

Table 6-21: Revised Items of Draft B/C – Annex (1/2)

Chapter / Items		Type of Revision A: Additional, M: Modified
Annex 1:	Classification of controlled building	
1	Classification of controlled buildings	M
Annex 2:	Structure of controlled buildings	
1	Definition/ technical words	A
2	Analysis and structural Design	M
3	Dead load	M
4	Live loads	M
5	Wind load/general requirement	M
6	Earthquake load	M
7	Other forces	M
8	Load Combinations	A
9	Soil Investigations	A
10	Footings	A
11	Pile Foundations	A
12	Concrete Mixing	M
13	Strength of Concrete and Steel reinforcement	M
14	Beams	A
15	Columns	A
16	Walls	A
17	Property of Concrete in Considering the Durability	M
18	Fire Resistant rate	M
19	Structural Steel	A
20	Connections	A
Annex 3	Fire Escape /Route	
	Section 1: Means of Escape	
3.1	Definitions of Fire Safety terms	A
3.2	Requirements of Exit	M
1	Capacity of Exit and Exit Facilities	M
2	Number of Exit doors and Exit routes from the room	M
3	Number of Exit doors for Assembly facilities	M
3.3	Travel Distance to exits and Stairs	A
1	Travel Distance	A
3.4	Component of Exit	M
1	Fire Exit Doors	M
2	Walls	A
3	Corridors for evacuations	A
4	Discharge of Fire Exit	A
3.5	Structure of Exit Staircases	M
1	Structure of stairs	M
2	Structure of Ramp	M
3	Installation of Direct staircases	M
4	Type of Exit Staircases	A
3.6	Escape by Disables (PWD)	A
1	General Requirements	A
2	Exit routes	A
3	Wheelchair Waiting Space (PWD holding points)	A
4	Alarms and Communication Device	A
	Section 2: Building Control	
3.7	Fire Resistance	M
1	Fire Resistance of Structure Elements	M
2	Fire Rating of Elements	A
3.8	External Wall and Roof	M
1	External wall Structure	A
2	Opening on the external Walls	A
3	Roof Construction	A

Source: JICA Expert Team

Table 6-22: Revised Items of Draft B/C – Annex (2/2)

Chapter / Items		Type of Revision A: Additional, M: Modified
3.9	Fire compartment	A
1	Requirements of Fire Compartment	A
2	structure of Fire Doors/Windows fittings	A
3	Fire Stopping for Service Void	A
4	Requirements by type of Fire compartment	A
5	Separation wall	A
3.10	Protection of Opening	A
1	Opening of Exterior wall	A
2	Atrium Protections	A
Section 3: Site Planning Control		
3.11	Fire Spread Precautions	A
1	Setback	M
2	Wall and Opening	A
3.12	Site Planning and Access by Fire Services	A
1	General Requirements	A
2	Fire Truck Access	A
3	Access to FDC	A
4	Fire Water Reservoir	A
5	Firemen's Access Doors	A
6	Installation of Emergency Lift	A
Annex 4	Fire Protection and Fire Fighting System	
Section 1: Electrical System		
4.1	Exit Lighting and Emergency Lighting	A
1	Exit lighting and Exit Direction Lighting	A
2	Emergency Lighting	A
4.2	Fire Alarm and Detector	M
1	Manual Call Point	A
2	Automatic Fire Alarm system	A
4.3	Lightning Protection System	A
4.4	Safety Control Center	A
1	Safety Control center	A
2	Emergency Power supply	A
Section 2: Mechanical System		
4.5	Mechanical Ventilation system	M
4.6	Smoke Control System	A
4.7	Pressurised Smoke Control System	A
Section 3: Firefighting Systems		
4.8	Portable Fire Extinguisher	M
4.9	Fire Hose System	A
1	Indoor Fire Hydrant (IFH)	A
2	Outdoor Fire Hydrant (OFH)	A
3	Standpipe system (Dry Riser)	A
4	Fire department Connection (FDC)	A
4.10	Sprinkler System	M
4.11	Fire Pump System	A
1	Fire Pump System	A
2	Fire Water Reservoir	A
4.12	Emergency Lift	A
1	Emergency Lift	A
Annex 5	Additional Requirements by type of Buildings	
5.1	Requirements for High-rise or/and Large Buildings	A
1	Target of Controlled Building	A
2	General Requirements	A
A.	Building requirements	A
B.	Firefighting Equipment's	A
5.2	Additional Requirements for Type of Use	A
PG-1:	Residential, Apartment, Condominium	A
PG-2:	Hotel, Hostel	A
PG-3:	Hospital, Nursing home	A
PG-4:	Educational: School, University, Training Facilities	A
PG-5:	Office	A
PG-6:	Shop, Mall, Commercial Facilities	A
PG-7:	Assembly, Theatre, Auditorium	A
PG-8:	Industrial Factory and Storages	A
Annex 6	Controlled-buildings inspection	

Source: JICA Expert Team

6.6 Finalization of the Draft Lao B/C

(1) Revision and Finalization of Draft Lao B/C

Through revisions and discussions by the Building WG, the first version of the draft Lao B/C was developed in August 2023, and a request for review was sent to ALACE in November 2023. In response to a request from DHUP, the JICA Expert Team hired two Lao legal experts to update the draft Lao B/C as a legal document and to review and correct terminology based on ALACE's comments.

The pre-final version of the draft Lao B/C was discussed in the ministerial internal meeting of the MPWT which was held on March 1, 2024, after the third country seminar in Thailand and Building WG received the additional comments.

The Building WG and Lao legal experts finalized the main body and the annex of the draft Lao B/C in June 2024.

(2) Outline of Final Version of Draft Lao B/C

The final version of the draft Lao B/C is structured as shown in Table 6-23. The text body of B/C shows outlines of the code, and in response to the increasing number of high-rise, large-scale, and special buildings in recent years, items to confirm structural safety and fire integrity have been added. In addition, technical standards are summarized in the Annex. The Annex should be supplement and revise the regulatory contents and numerical standards in the future in accordance with operational status of B/C and advances in construction technology.

Table 6-23: Composition of Final Version of Draft Lao B/C

Item	Contents	
Main Body		
Chapter 1	General Provisions	General Provisions
Chapter 2	Type of Controlled Buildings	
Chapter 3	Design of Controlled Buildings	Structure Safety
Chapter 4	Structure of Controlled Buildings	
Chapter 5	Fire Exit Systems	Fire Safety and Others
Chapter 6	Fire Protection Systems	
Chapter 7	Additional Requirements by Type of Buildings	
Chapter 8	Health and Easement (PWD)	Construction Safety and Implementation
Chapter 9	Inspection and Conformity Certification	
Chapter 10	Management and Inspection Authorities on Building Control	
Chapter 11	Policy of Good Performers and Measures against Violators	
Chapter 12	Final Provisions	
Annex		
Annex 1	Classification of Controlled Building	Technical standards for each Chapter
Annex 2	Structure of Controlled Buildings	
Annex 3	Fire Escape System	
Annex 4	Fire Protection System	
Annex 5	Additional Requirements by Type of Buildings	
Annex 6	Controlled-buildings inspection	

Source: JICA Expert Team

The characteristics and deliverables of the final version of draft Lao B/C are as follows:

1) General Regulations

- Expansion of regulation for structural and fire safety from the original draft of Lao B/C in 2016.
- Consisting of Main Body and Annex for technical matters for easy handling.
- Classified into three types of target building and four levels of scale of building.

2) Structure Safety Regulations

- Based on the American codes (IBC) that have been used for university education in Laos.
- Focusing on Analysis, Loads, and Structure on Foundation, Concrete, Steel.
- Expectation of future updating for details and more structure types.

3) Fire Safety Regulations

- Provision of a passive design that is less relying on firefighting equipment
- Based on the clear Singapore Fire Safety Code consideration with neighboring countries.
- Prioritize “Escape”, “Prevention” and “Special Requirements”
 - “Escape” to minimize death and injuries in initial evacuation
 - “Prevention” to reduce fire spreading and support firefighting to protect property
 - “Special Requirements” depending on the building type and size

6.7 Approval Process of Lao B/C

The Lao B/C will be approved as the MPWT Minister’s decision. As part of the process towards approval, a consultation meeting within DHUP (where the Building WG briefed the DG) was held in early August 2024. Following confirmation by the DG, the documents was submitted to the Minister of MPWT in late August 2024. According to DHUP, there is also a possibility that instructions for holding a meeting with related agencies may be given after submission to the Minister.

6.8 Capacity Development through the Activities of Output 4

Through the activities of Output 4, the capacity enhancement of the C/Ps on the analysis of the issues on regulations of building construction was achieved as shown in Table 6-24. Specifically, capacity for regulations of building construction refers to understanding of issues to ensure safety of building design and construction, and acknowledgement of technical standards regulating these issues. Through activities related to formulation of the draft Lao B/C, these capabilities of C/P have been enhanced.

Table 6-24: Achievement of Capacity Enhancement through Activity of Output 4

Category of Activity	Capacity Enhancement of C/Ps
Analyzing Issue on Building Administration	<ul style="list-style-type: none"> • Understanding of current situation and issue on control of large-scale building in Laos through the study and discussion in Phase 1.
Studying Technical Standard in Other Countries	<ul style="list-style-type: none"> • Understanding of items and numerical criteria of technical standards in Japan and other country through the discussion in Building WG. • Understanding of items and numerical criteria of technical standard, and the

Category of Activity	Capacity Enhancement of C/Ps
	updating chronology in Thailand.
Formulation of Draft Lao B/C	<ul style="list-style-type: none"> • Understanding of objective and target building to be controlled by Lao B/C. • Understanding of regulatory items in Lao B/C. • Understanding of numerical criteria of technical standards in draft Lao B/C and the Annex.
Dissemination of Draft Lao B/C	<ul style="list-style-type: none"> • Understanding of opinion and expectation of related agencies and private companies on Lao B/C. • Knowledge to organize stakeholder seminar and the skill of explanation of draft Lao B/C. • Understanding of dissemination of the draft Lao B/C to the construction industry and revision work through feedback.

Source: JICA Expert Team

6.9 Considerations for Further Cooperation on B/C

Through the activities of Output 4, the final draft version of Lao B/C was formulated. The final version of Lao B/C was submitted to the Minister of MPWT by DHUP for approval in late August 2024. This is one of the significant outcomes of the project. However, it is necessary to ‘strengthen operational capacity of review and inspection’ and ‘reinforce and revise technical standards’ to make formulated B/C function effectively in urban development management in Laos. As for these regards, the JICA Expert Team shows considerations for potential of further technical assistance from Japan as well as challenges in below.

Firstly, ‘strengthen operational capacity of review and inspection’ will target practical tasks such as reviewing application documents in construction permit system and inspections at construction sites, and it is expected that technical assistance will be provided to strengthen capacity through instructions of these routine tasks. On the other hand, securing sufficient human resources is the key issue to provide technical assistance. In Japan, those experts who have capacities and experiences in construction reviews and inspections belong local government’s officials or private inspection organizations in general, but it seems to be very difficult to deploy them for long-term to developing countries including Laos.

Secondary, regarding ‘reinforce and revise technical standards’, it is necessary to continue discussions in each technical field through implementation of B/C, while taking into account characteristics of architectural designs, methodologies and materials in Laos as well as ensuring balance between construction safety and economic efficiency. To consider it, the knowledge of private construction companies that handle architectural design, material procurement, and construction management, and universities who have academic perspectives, will be essential, and it will be important to establish a committee with industry-government-academia. Since this technical assistance will require support for operating the committee and detailed explanation of technical standards in other countries, it is considered appropriate to obtain inputs from technical standards particularly from neighboring countries.

Therefore, it would be desirable to consider the possibility of providing technical assistance for further B/C in cooperation with neighboring countries such as Thailand.

Chapter 7. Challenges, Innovations, and Lessons Learned in Project Implementation and Management

Challenges and innovations which were obtained in the project implementation and operation, and the lessons learned from the project implementation are summarized in Table 7-1.

Table 7-1: Challenges, Innovations, and Lessons Learned in Project Implementation and Management

Category	Issue on Implementation	Countermeasure	Lesson Learned
Overall Activity			
Implementation Structure, Inputs	Since Team Leader covers wide range of outputs and activities (overall management, main response for Output 2, support for Outputs 1 and 3), the progress of entire project was delayed.	<ul style="list-style-type: none"> Allocating in-house support staff of IT specialist and collaborative urban development, and local assistant corresponding to GIS database in Output 2. 	<ul style="list-style-type: none"> It is necessary to assign specialists of each output or activity, in particular Output 2, from initial phase of the project.
	Although skilled GIS specialist was assigned to Output 1, expertise in web site development was also required,	<ul style="list-style-type: none"> The JICA Expert Team allocated in-house support staff of IT specialist to carry out the task with technical advice on formulating and operating web site. 	<ul style="list-style-type: none"> It is advisable to assign dedicated staff to handle data contents (GIS) and web site, when developing DX tools.
	To handle Output 3, JICA Expert Team assigned personnel with extensive knowledge of urban development, but as the project progressing, it become clear that more detailed knowledge for PFI was needed.	<ul style="list-style-type: none"> The JICA Expert Team allocated in-house support staff who has knowledge and experience of PFI in Japan. 	<ul style="list-style-type: none"> It is desirable to determine the business model of collaborative urban development at an early phase of the project and allocate additional personnel in accordance with the business model.
Training in Japan	During the first training in Japan, the situation that trainees were difficult to deepen their understanding due to insufficient lecture materials and explanations	<ul style="list-style-type: none"> For the second training in Japan, the JICA Expert Team coordinated with lecturers two months before the training to convey purpose of lectures, including detailed outlines and requested lecturers to provide materials in advance. 	<ul style="list-style-type: none"> To maximize effectiveness of the training, it is necessary to coordinate with lecturers politely in advance. It is effective that provide briefings on basic information such as Japanese urban planning, land system, and administrative organizations to C/P before the training.
	During the first training in Japan, since quality of translation in Lao for provided materials were not enough, trainees and interpreter were sometimes difficult to understand lectures.	<ul style="list-style-type: none"> For the second training in Japan, the JICA Expert Team kept at least one month for translating material and assigned two translators and local staff for translation work to improve accuracy of translation. 	<ul style="list-style-type: none"> To improve accuracy of translation, it is necessary to ensure enough working time, assign multiple staff, and correct technical terms by project staff.
Output 1			
Sustainability of UMP	To encourage C/P to continue UMP operation after completion of the project.	<ul style="list-style-type: none"> TOR of UMP was revised that C/P lead operating UMP with consensus of C/P. In order to encourage C/P's autonomous implementation, 	<ul style="list-style-type: none"> Agreement in the document with C/P, such as TOR, is effective to encourage continuous operation of the meetings.

Category	Issue on Implementation	Countermeasure	Lesson Learned
		JICA Expert Team provided only financial support for C/P in the 9th UMP, and C/P mainly responsible for planning, preparing and hosting of the UMP.	<ul style="list-style-type: none"> Encouraging C/P to plan, prepare and implement by themselves in the final phase of the project is effective to improve C/P's independence and operational capabilities.
Name of the GIS-PF	To popularize and promote the use of the GIS-PF, a recognizable and familiar design for public users was required.	<ul style="list-style-type: none"> JICA Expert Team explained the importance of corporate color, name and logo from the perspective of product development strategy to C/P, and these were created in collaboration with C/P. The created name (VirGo) and logo were used extensively throughout the implementation of the project and were utilized to promote and disseminate information to related organizations and public users. 	<ul style="list-style-type: none"> In system development and operation, easy-to-understand names and a unified color image are effective in increasing awareness and dissemination among related organizations and general users. Creating names, logos, etc. in collaboration with C/P was effective in fostering ownership among C/P.
Maintenance costs of the GIS-PF	Initially, the cost of the GIS-PF was only intended to cover support for its development, but it became clear that it would not be easy for the C/P to secure the maintenance costs after development.	<ul style="list-style-type: none"> Maintenance of the GIS-PF during project period was subcontracted by the JICA Expert Team. JICA Expert Team requested to DHUP to secure the maintenance cost after completion of the project, and it was confirmed that the budget for maintenance of the GIS-PF has been secured by MPWT. As of the end of July 2024, a maintenance contract between DHUP and a local IT consultant is being prepared to be contracted. 	<ul style="list-style-type: none"> When developing a system, it is necessary to assume that C/P need to maintain it during and after the project, and to confirm in advance whether the C/P has secured the budget. If the C/P is unable to secure the maintenance cost during the project, it is necessary to include this cost in the JICA Expert Team's subcontract cost in advance.
Information leak of the GIS-PF	Among the data published in the GIS-PF, water supply network data was provided by the provider on the condition that it would not be opened to the public, but the data has temporarily become available for the public viewing.	<ul style="list-style-type: none"> The relevant data was closed immediately. The reason the data became available for viewing was due to a coordination error among C/P and JICA Expert Team. The letter which described the data would not be opened to the public was sent by data provider to C/P, but confirmation of the letter and sharing the information was delayed. To strengthen data security, a procedure was added that publication level of each data should be confirmed with data provider in the writing document before collecting the data. The procedure was also added in the O&M manual. 	<ul style="list-style-type: none"> It is important to thoroughly inform C/P and JICA Expert Team about the importance of handling data properly, and to clearly confirm publication level of each data with data provider in the writing document.

Category	Issue on Implementation	Countermeasure	Lesson Learned
Transfer operation of the GIS-PF	When transferring the GIS-PF to C/P after the completion of development, it was necessary to encourage the C/P to operate independently.	<ul style="list-style-type: none"> • A ceremony to hand over the GIS-PF was held, and a memorandum of understanding was signed between the JICA Expert Team and DHUP, with a written agreement reached on the steady operation of the system after the handover and the securing of a budget for maintenance and management. • To encourage the operation and management of the GIS-PF by C/P after the handover, GIS-SWG was held once a month for O&M monitoring. In addition, monthly monitoring sheets, daily monitoring sheets, and operational capability checklists were prepared by the JICA Expert Team for the steady monitoring was established. 	<ul style="list-style-type: none"> • Holding an official ceremony and signing a written agreement on the transfer is an effective way to encourage C/P to operate independently. • Establishing the systematic operation system through regular meetings and monitoring sheets are important approaches to encourage C/P to operate independently.
Explanation video for GIS-PF operation	In order to disseminate GIS-PF utilization for the public users, a tool for introducing functions and operations of the GIS-PF in effective and timely manner was required.	<ul style="list-style-type: none"> • JICA Expert Team developed a video explaining how to use GIS-PF for the public users. Due to time constraints, development of the video was not outsourced but assistants of JICA Expert Team created the video instead by using general application. 	<ul style="list-style-type: none"> • It was confirmed that video explanations are effective to improve C/P's understanding and disseminating. • Regarding video creation, it was possible to create video by JICA Expert Team in this project, because materials for the video can be collected by screen capture of the GIS-PF. However, it is expected that it would be difficult depending on the content of the video. Therefore, it is desirable to include cost for subcontract work on development of the video in advance.
Survey on private use of the GIS-PF	In order to promote the GIS-PF to private sector, it is necessary to identify data needs of private sector.	<ul style="list-style-type: none"> • JICA Expert Team conducted questionnaire to the members of Chamber of Commerce for asking published data in GIS-PF and utilization of the data. The result of questionnaire was shared with C/P as basic information for the future 	<ul style="list-style-type: none"> • When developing systems intended for public use, such as the GIS-PF, it is necessary to gather and understand the opinions and needs of users. • A survey conducted through organizations like Chambers of Commerce is an effective method for collecting a wide range of opinions and feedback.
Security management of the GIS-PF	A request was made by C/P to conduct training on cybersecurity.	<ul style="list-style-type: none"> • The cybersecurity training was challenging for the JICA Expert Team and local IT consultants to handle. Therefore, JICA Long-term Expert requested LANIC to provide instructors, and the training was conducted 	<ul style="list-style-type: none"> • For training programs related to the project that are difficult to manage, it can be beneficial to request cooperation from the relevant government agencies on C/P's side.

Category	Issue on Implementation	Countermeasure	Lesson Learned
		accordingly.	
The construction of a mirror site of the GIS-PF.	To ensure a stable operational environment for the GIS-PF, including a testing environment for data uploads, a customization environment, and training environment, it became necessary to establish a mirror site environment which equip same functions with the main system within C/P's server.	<ul style="list-style-type: none"> A contract modification was made with the local IT consultant who had been subcontracted for maintenance of the GIS-PF, and the construction of the mirror site environment was carried out by reallocating the expense originally intended for subcontracting. 	<ul style="list-style-type: none"> This was addressed as a new request from C/P after the start of GIS-PF's operations. However, for system developments like GIS-PF, it is essential to confirm the needs for the mirror site environment to C/P in advance.
Output 2			
DPWT's Server Environment and PC Environment	In the development of the construction permit database, the server environment within DPWT for sharing use of the database was not established.	<ul style="list-style-type: none"> An intranet network within the Division of Housing and Urban Planning in DPWT was established with the support of JICA Long-term Expert. Each client PC enable to access database through the desktop PC originally installed in DPWT. 	<ul style="list-style-type: none"> It is possible to establish a simple server environment using the intranet.
	In the operation of the construction permit dataset, some DPWT staff PCs were older models, it caused issues with the use of ArcGIS.	<ul style="list-style-type: none"> The JICA Expert Team provided two laptop PCs to the Division of Housing and Urban Planning in DPWT. 	<ul style="list-style-type: none"> When developing the system based on the use of GIS applications by C/P, it is necessary to consider the performance of their PC.
Satellite Office within DPWT	To understand the practical situation of construction permit at DPWT, monitor the operation of the improved construction permit database, and provide operational guidance, it was necessary for the JICA Expert Team to provide continuous support to DPWT for a certain period.	<ul style="list-style-type: none"> As a satellite office for the JICA Expert Team, a desk within DPWT office was provided, and JICA Experts and their assistants were regularly dispatched. 	<ul style="list-style-type: none"> In the project involving multiple C/P organizations such as CDUDCP, it is beneficial to secure office space in each organization for effective technical support.
Output 3			
Formulation of Area Concept Plans	The formulation of the area concept plan for the pilot area was initially planned to be carried out through local subcontracting. However, since the estimates from the local consultants significantly exceeded the planned budget, it became difficult to proceed with subcontracting.	<ul style="list-style-type: none"> The formulation of the area concept plan for the pilot area was carried out directly by the JICA Expert Team. This approach increased opportunities for collaborative work with C/P and enabled effective technology transfer. 	<ul style="list-style-type: none"> The major factor that caused the estimates exceeding the planned budget was scale of the pilot area. Therefore, it is necessary to clarify scale constraints during the selection stage of the pilot area.
Pilot project for collaborative urban development	In the pilot area, the selection of the pilot projects for the collaborative urban development was being advanced, but it was found that the completion of the pilot project within the implementation period of this project would be difficult due to the lack of anticipated	<ul style="list-style-type: none"> At the 3rd JCC, it was agreed to cancel the pilot project and continue the study for possibility of collaborative urban development. After the completion of this project, efforts were made to examine business schemes to enable C/P to implement the projects. 	<ul style="list-style-type: none"> The process for considering the pilot projects should have followed a reverse approach from the initial plan. Specifically, the following steps are recommended: 1) Creation of a long list of candidate projects, 2) Exchange of opinions with implementing agencies and

Category	Issue on Implementation	Countermeasure	Lesson Learned
	private sector involvement.		private business operators, 3) Feasibility verification through a Pre-feasibility study (F/S), and 4) Formulation of an area concept plan including surrounding areas.
Output 4			
Architectural Terminology	There were many architectural terms for which no corresponded Lao translations existing. It led to difficulties in achieving a common understanding among C/P in the Lao language versions of the meeting materials.	<ul style="list-style-type: none"> For appendixes containing numerical criteria and other specialized terms, which especially using a lot of technical words, the material was basically written in English, with explanations given as needed to improve C/P's understanding. 	<ul style="list-style-type: none"> For architectural terminology, corresponded local language may not always be established. Therefore, it is necessary to use English as the base language and provide extra explanations as needed.
Employment of local legal experts	To finalize the draft Lao B/C, it was necessary to conduct legal reviews and clarify the Lao terminology for architectural words. The members of the Building WG are staff from DHUP and did not have sufficient expertise in these areas.	<ul style="list-style-type: none"> The JICA Expert Team employed two Lao legal experts, in collaboration with the Building WG, to finalize the draft Lao B/C. 	<ul style="list-style-type: none"> The JICA Expert Team was able to hire local legal experts within the budget. However, it is advisable to include the cost for hiring legal experts in advance when formulating regulations.
The 3rd country training seminar	The seminar on B/C in a 3rd country was initially planned to be held in Singapore, with arrangements being coordinated with the BCA and local Japanese construction companies. Although a request letter for hosting the seminar was submitted to BCA by C/P, BCA encountered internal difficulties in finalizing the acceptance. As a result, it was decided to cancel the seminar.	<ul style="list-style-type: none"> The 3rd country seminar was rescheduled to be held in Thailand. Since the C/P was already familiar with the Thai construction sector personnel, the coordination was carried out smoothly. The seminar that was initially planned for Singapore, which had already secured acceptance from local Japanese construction companies, was conducted online with those companies as lecturers. 	<ul style="list-style-type: none"> Singapore had a well-established B/C system and was appropriate country in technically aspect. However, the lack of an official framework for cooperation in Singapore and the absence of a relationship with C/P made difficult to implement 3rd country seminar. Thailand was able to host the seminar due to the relationship between C/P and hosting organization in Thailand. However, if there is no relationship with hosting organization, it is advisable to establish a memorandum or similar agreements with third country sides in advance to facilitate their cooperation.

Source: JICA Expert Team

Chapter 8. Achievement of Project Purpose

8.1 Project Purpose and the Verifiable Indicators

According to the PDM of the CDUDCP which was revised at the 2nd JCC in June 2022, the project purpose and the verifiable indicators are stated in Table 8-1.

Table 8-1: Project Purpose and Verifiable Indicators Stated at the PDM

Project Purpose	Objectively Verifiable Indicators	Means of Verification
Capacity of urban development control and promotion in accordance with urban plan is enhanced.	(1) The urban development permission system is understood and trialed in Vientiane Capital.	(1) Questionnaire to related members of urban development
	(2) Institutions and systems are necessary to be improved and established for the better urban development control and promotion are listed up and discussions on them are started.	(2) Minutes of stakeholders' meeting

Source: PDM of CDUDCP revised at the 2nd JCC in June 2022

8.2 Verification of Achievement of the Project Purpose

(1) Verifiable Indicator No. 1

The Verifiable Indicator No. 1 (“The urban development permission system is understood and trialed in Vientiane Capital.”) was verified by the questionnaire to related members of urban development. The outline of the questionnaire survey is shown in Table 8-2, and the result of verification is shown in Table 8-3.

Table 8-2: Outline of Questionnaire for Verifiable Indicator No. 1

Item	Description
Respondents	Total 18 members of C/P (DHUP, PTI, DPWT) - DG of DHUP: all items of Questionnaire - Urban WG members: Questionnaire relating to OP1 -3 - B/C WG members: Questionnaire relating to OP4
Method	Google Form questionnaire
Period	May 2-30, 2024
Type of Questionnaire	5 levels choice for the agreement level

Source: JICA Expert Team

Table 8-3: Result of Questionnaire for Verifiable Indicator No. 1

Item		Target Respondents	Question	Number of Response on Agreement Level (Agree - Disagree)					Achievement Level (Max. 5.0)
				5.0	4.0	3.0	2.0	1.0	
OP1	Urban Management Platform	DG of DHUP, Urban WG Member	1-1. Through the activity of the UMP, your understanding of the urban development management system, its issue and improvement was enhanced, and Your enhanced knowledge is utilizing for your works relating to urban development management.	5	13	-	-	-	4.28
	GIS-PF	(ditto)	1-2. You understand data management for the GIS-PF and the utilization for urban development control and promotion, and Your organization is operating the GIS-PF for your work.	9	7	2	-	-	4.39
OP2	Construction Permit Dataset	(ditto)	2-1. You understand objective and operation method of the Construction Permit Dataset Management System, and DPWT is operating the Construction Permit Dataset Management System.	6	9	2	1	-	4.11
	Institutional Improvement of Construction Permit	(ditto)	2-2. You understand current issue of Construction Permit, and Your organization starts the discussion for the institutionalization of proposed improvement measures for Construction Permit.	8	7	2	1	-	4.22
OP3	Area Plan	(ditto)	3-1. You understand objective and methodology of Area Concept Planning with community participation approach, and You agree on the Area Concept Plan for pilot area.	7	9	1	1	-	4.22
	Collaborative Urban Development	(ditto)	3-2. You understand objective, project scheme, role of public and private of Collaborative Urban Development, and Your organization starts the discussion for the institutionalization and project establishment.	5	12	1	-	-	4.22
OP4	B/C	DG of DHUP, Building WG Member	4. You understand necessity, regulatory contents and technical standard for B/C, and Your organization starts the discussion for the organization and institutionalization for operation of B/C	7	5	1	-	-	4.60

Source: JICA Expert Team

(2) Verifiable Indicator No. 2

The Verifiable Indicator No. 2 (“Institutions and systems necessary to be improved and established for better urban development control and promotion are listed up and discussions on them are started.”) was verified through the confirmation of the minutes of stakeholders' meeting. The result of the verification is shown Table 8-4.

Table 8-4: Result of Verifiable Indicator No. 2

Output	Activity Items	Minutes of Stakeholders' Meeting	Achievement based on the Verifiable Indicators	Achievement
Output 1	Urban Management Platform (UMP)	<ul style="list-style-type: none"> Minute of UMP #8 	<ul style="list-style-type: none"> Revision of TOR of UMP to transfer the operation to C/P was agreed in UMP 8. Capacity enhancement of C/P on operation and maintain of the GIS-PF was confirmed in the transfer agreement of the GIS-PF and minutes of GIS-SWGs. 	✓
	GIS Platform	<ul style="list-style-type: none"> Transfer agreement on 17 January 2024 Minutes of Urban WG #45 	<ul style="list-style-type: none"> The GIS-PF was handover to C/P in January 2024. O&M team is operating the GIS-PF and holding monitoring meetings. Securing yearly maintenance budget by DHUP was confirmed in the minutes of Urban WG #45. 	✓
Output 2	Construction Permit Dataset System	<ul style="list-style-type: none"> Minutes of Urban WG #45 	<ul style="list-style-type: none"> Construction Permit Dataset System in DPWT was improved and the operation was started. 	✓
	Institutional Improvement of Construction Permit	<ul style="list-style-type: none"> Minute of UMP #6 DPWT agreement on manual 	<ul style="list-style-type: none"> Conditions and issues of current construction permit system were discussed in UMP #6. Manual for Operation of Construction Permit including institutional improvement will be approved by DPWT. (It was approved by DPWT on July 26, 2024) 	✓
Output 3	Area Concept Plan	<ul style="list-style-type: none"> Minutes of Meeting on Area Concept Plan 	<ul style="list-style-type: none"> The Area Concept Plan will be officialized by agreement of C/P. (It was agreed by DHUP, PTI and DPWT by August 16, 2024.) 	✓
	Collaborative Urban Development	<ul style="list-style-type: none"> Minute of UMP #8 DPWT agreement on guideline 	<ul style="list-style-type: none"> C/P's action plan to implement collaborative urban development was proposed in the UMP #8. The Guideline will be approved by the DPWT. (It was approved by DPWT on July 26, 2024.) 	✓
Output 4	Lao B/C	<ul style="list-style-type: none"> Record of Third Country Seminar in Thailand 	<ul style="list-style-type: none"> Necessity of operational system of B/C was proposed in the C/P's action plan in the third country seminar in Thailand 	✓

Source: JICA Expert Team

Chapter 9. Recommendations for Achieving Overall Goal

9.1 Overall Goal and Verifiable Indicators in the PDM

According to the PDM of the CDUDCP which was revised at the 2nd JCC in June 2022, the overall goal and the verifiable indicators are stated as shown in Table 9-1.

Table 9-1: Overall Goal and Verifiable Indicator of the CDUDCP

Overall Goal	Objectively Verifiable Indicators	Means of Verification
Urban development is controlled and promoted in accordance with urban plan.	(1) The number of construction permission under the improved permission systems in a year is more than 400.	(1) Official documents of record of construction permit prepared by GOL/VC
	(2) The number of Urban Collaborative Development Projects (under planning and implementation) is more than 3.	(2) Official documents of approved plans of the project

Source: PDM of CDUDCP revised at the 2nd JCC in June 2022

9.2 Necessary Actions for Achievement of Overall Goal

(1) Necessary Actions Proposed by C/P

The overall goal over the five years following the completion of CDUDCP is “Urban development is controlled and promoted in accordance with the urban plan”.

Based on the outcomes of the project, DHUP, PTI, and DPWT proposed the action plan for each output as the necessary actions to achieve the overall goal in the final JCC meeting which was held on June 18, 2024.

Table 9-2: Action Plans for Each Output Proposed by C/P

Category		Necessary Actions
Output 1	UMP	<ul style="list-style-type: none"> Continuous operation of UMP meeting for cross-sectoral discussions on urban development issues and information sharing.
	GIS-PF	<ul style="list-style-type: none"> Formulation of policies and regulations for inter-ministerial collaboration and data provision. Formulation of policies for utilization of VirGo for administrative work in MPWT. Formulation of regulations for sustainable O&M of VirGo by MPWT (e.g., budgeting, demarcation, staffing and training). Expansion of use cases and data uploads in VirGo to promote utilization of VirGo for the public.
Output 2	Data Management	<ul style="list-style-type: none"> Continuous operation of Construction Permit Dataset System in DPWT. Expansion of Permit Dataset System for OPWTs. Training for OPWTs staffs by DPWT.
	Institutional Improvement of Construction Permit	<ul style="list-style-type: none"> Legalization of proposed countermeasures in MPWT Decision of Construction Management. Decision of land use regulations of GUP in Vientiane Capital.
	Operation Manual	<ul style="list-style-type: none"> Officialization of Manual (Manual has officialized by DPWT on July 26, 2024). Continuous operation of construction permit procedure based on Manual.

Category		Necessary Actions	
	Dissemination of Construction Permit	<ul style="list-style-type: none"> Update necessary data and documents to VirGo for citizens and business operators. 	
Output 3	Area Concept Plan	<ul style="list-style-type: none"> Formulation and approval of official urban plan based on the Area Concept Plan. 	
	Collaborative Urban Development Project	<ul style="list-style-type: none"> Institutional development for implementation of collaborative urban development. <ul style="list-style-type: none"> ➤ Dialogue system between public and private sector ➤ Rule on demarcation for infrastructure development between public and private ➤ Rule on commercial utilization of public facility ➤ Incentive system for the private sector Establishment of implementation team in MPWT and Vientiane Capital. Formulation of a long list for candidate project in Vientiane Capital. Coordination with other agency who in charge of candidate project. 	
	Guideline	<ul style="list-style-type: none"> Officialization of Guideline (Guideline has officialized by DPWT on July 26, 2024) 	
Output 4	Approval of Lao B/C	<ul style="list-style-type: none"> Proceed Ministerial approval procedure for Lao B/C 	
	Operation of Lao B/C	Rule for Operation <ul style="list-style-type: none"> Formulation of operational rules for Lao B/C <ul style="list-style-type: none"> ➤ Process of review and inspection ➤ Officialization of application documents and forms ➤ Organization of inspection team and assignment 	
		Special Committee	<ul style="list-style-type: none"> Establishment of the Special Building Committee for reviewing large, high-rise and special building.
		License	<ul style="list-style-type: none"> Establishment of the license system of architect and engineer for design and construction of large -scale building under Lao B/C.
	Further Updating	<ul style="list-style-type: none"> Development of technical standards through the operation of Lao B/C 	

Source: Report of Output Activity in the Final JCC in June 2024

(2) Recommendations for Implementation of C/P's Action Plan

For implementation of the action plan to achieve the overall goal proposed by C/P, it is necessary that C/P shall carry out more concrete actions and further coordination. Table 9-3 shows recommendations from the JICA Expert Team for implementation of C/P's action plan.

Table 9-3: Recommendations for Implementation of C/P's Action Plan

Output	Action Plan Proposed by C/P	Recommendations for Implementation of Action Plan
1	Continuous operation of UMP	<ul style="list-style-type: none"> Coordinate with relevant organizations to co-host UMP with existing donor-funded meetings such as the National Urban Forum
	GIS-PF	Formulation of policies and regulations for inter-ministerial collaboration and data provision <ul style="list-style-type: none"> It is recommended that collaborate with Ministry of Technology and Communications (MTC), responsible organization for digital sector in Laos, to formulate regulations (government or presidential decrees) to promote sharing and utilization of digital information among ministries and agencies.
		Formulation of policies for utilization of VirGo for administrative work in MPWT <ul style="list-style-type: none"> Collecting specific examples of VirGo utilization in MPWT's work (e.g. sharing information among departments and/or open to the public) and clarify how VirGo will be used in their work process, target data/information, and responsible division. After that, policies for VirGo utilization in MPWT's administrative work will be formulated based on collected examples.

Output	Action Plan Proposed by C/P		Recommendations for Implementation of Action Plan	
		Formulation of regulations for sustainable O&M of VirGo by MPWT	<ul style="list-style-type: none"> Through operations and dissemination activities based on O&M manual, operational methods will be updated, and responsibilities and rules for securing budget, demarcation of roles, assignment and training will be organized, then compiled into MPWT's regulation. 	
		Expansion of use cases and data uploading to promote VirGo utilization for the public	<ul style="list-style-type: none"> Referring result of questionnaire on VirGo utilization to private companies, it is recommended to coordinate with C/P organizations and relevant organizations for publication of data in VirGo. 	
2	Data Management	Continuous operation of Construction Permit Dataset System	<ul style="list-style-type: none"> To ensure continuous data input within construction permit system based on the operation manual, confirmation by supervisor and regular monitoring will be done thoroughly. 	
		Expansion of Permit Dataset System for OPWTs	<ul style="list-style-type: none"> Since ICT environment of OPWTs are insufficient now, it is necessary to improve their network and PC environment. To secure budget for improving above environment, it is necessary to develop a schedule for improving ICT environment and installing system for each OPWT. 	
		DPWT's training for OPWTs staffs.	<ul style="list-style-type: none"> Develop training schedules for OPWT staff by DPWT in accordance with above schedule for improvement of ICT environment. 	
	Institutional Improvement	Legalization of proposed countermeasures in MPWT Decision of Construction Management	<ul style="list-style-type: none"> Establishing a working group on revision of construction regulation to review items which require revision of regulations in proposed institutional improvement. 	
		Decision of land use regulations of GUP of Vientiane Capital	<ul style="list-style-type: none"> Establishing a working group on land use regulations for steadily implementation of the decision of regulations. The roles of this working group are to develop schedule for decision of regulations, to finalize draft regulations, and to make explanation for the public in open seminar, 	
			Continuous operation of construction permit procedure based on Manual	<ul style="list-style-type: none"> To be shared the manual within DPWT and OPWTs and disseminate utilization of the manual for their construction permit work. In addition, the manual will be updated (amendments and/or additions) through their operations.
			Update necessary data and documents to VirGo for citizen and business operator	<ul style="list-style-type: none"> Referring result of questionnaire on VirGo utilization to private companies, it is recommended to collect and cleanse available data (results of geological survey, etc.) and upload it to VirGo. To hold discussions with private design companies for provision of CAD data in free for the public (standard housing design, etc.).
3	Formulation and approval of official urban plan based on Area Concept Plan		<ul style="list-style-type: none"> Securing DPWT's budget for procurement of a consultant for formulation of statutory urban plan (urban plan in community level) in the priority area around Khamsavath station. 	
	Collaborative Urban Development Project	Institutional development for implementation of Collaborative Urban Development	<ul style="list-style-type: none"> It is considerable that necessary rules for implementing collaborative urban development could be included in the framework of the PPP law which currently being formulated by Ministry of Planning and investment (MPI). It is desirable to coordinate with MPI and clarify the matters to be institutionalized by MPWT before formulation of draft institutions. 	
			Establishment of implementation team in MPWT and Vientiane	<ul style="list-style-type: none"> It is desirable to establish an implementation team consists of DHUP, PTI, and DPWT, and including PPP department of MPI to the team as an observer.

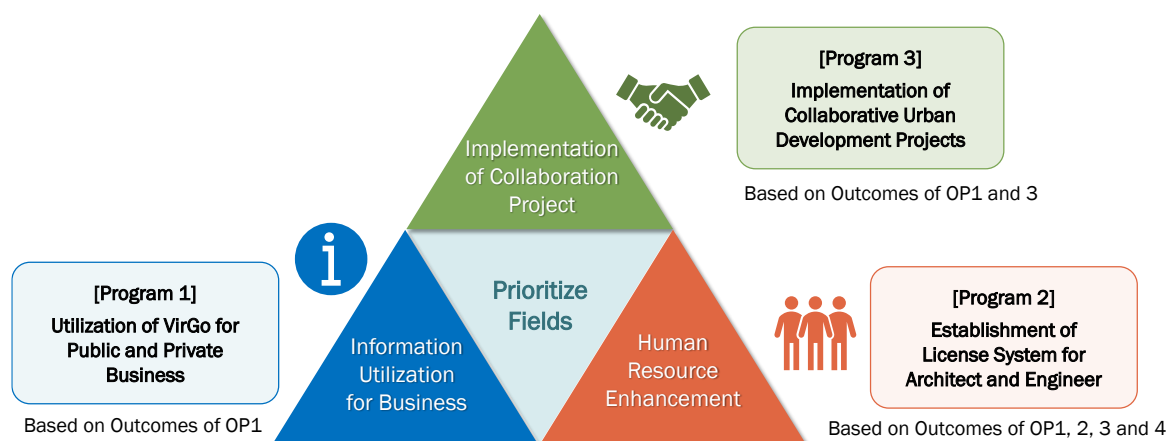
Output	Action Plan Proposed by C/P		Recommendations for Implementation of Action Plan
		Capital	
		Formulation of long list for candidate project in Vientiane Capital	<ul style="list-style-type: none"> Collecting information on candidate projects in Vientiane Capital (to be implemented and plan) under the jurisdiction of C/P and related organizations and develop a long list for candidate projects.
		Coordination with other agency who are in charge of candidate project	<ul style="list-style-type: none"> Regarding candidate projects above, it is recommended to hold discussions with implementing organizations for the feasibility of introducing PPP methods to the projects and narrow down the target projects (develop a short list).
4	Proceed Ministerial approval procedure for Lao B/C		<ul style="list-style-type: none"> It is recommended to take necessary actions (responding to comments, holding open seminar, etc.) for early approval of the final version of B/C which submitted to the Minister of MPWT in late August 2024
	Operation of Lao B/C	Formulation of operational rules for Lao B/C	<ul style="list-style-type: none"> It is recommended to add DPWT and OPWT, who are inspection organizations of construction permit, to the Building WG, and to start formulating operational rules for Lao B/C.
		Establishment of Special Building Committee for reviewing for large, high-rise and special building	<ul style="list-style-type: none"> As members of Special Building Construction Committee, it is expected to include MPWT, DPWT, Ministry of Public Security, ALACE, Architecture Department of University, and private expert of architecture.
		Establishment of license system of architect and engineer for design and construction of large - scale building under Lao B/C	<ul style="list-style-type: none"> It is considerable that the establishment of license system will be led by CLACE, who oversees establishing qualification system, under the leadership of MPWT. As for considering the license system, it is necessary to incorporate into the operational rules a mechanism that requires allocation of qualified personnel in terms of application for construction permit for large-scale building and its construction.
	Development of technical standards through the operation of Lao B/C		<ul style="list-style-type: none"> It is recommended to monitor the operational status of Lao B/C and to specify technical standards to be developed by priority. As for development of technical standards, it is considerable to refer the technical standards in Thailand. In addition, it is necessary to take situations of architectural design and materials in Laos into account to avoid excessive demands in the technical standards to be formulated.

Source: JICA Expert Team

9.3 PWT's Initiatives for Sustainable Urban Development Management

(1) Outline of Proposed Initiative

The DHUP proposed to take an initiative of programs for three prioritized fields for sustainable urban development management in the final JCC held on June 18, 2024. The proposed framework of the initiative is shown in Figure 9-1. The UMP mechanism shall be used for each of the three prioritize programs.



Source: DHUP of MPWT

Figure 9-1: Proposed PWT’s Initiatives for Sustainable Urban Development Management

(2) Program 1: Utilization of VirGo for Public and Private Business

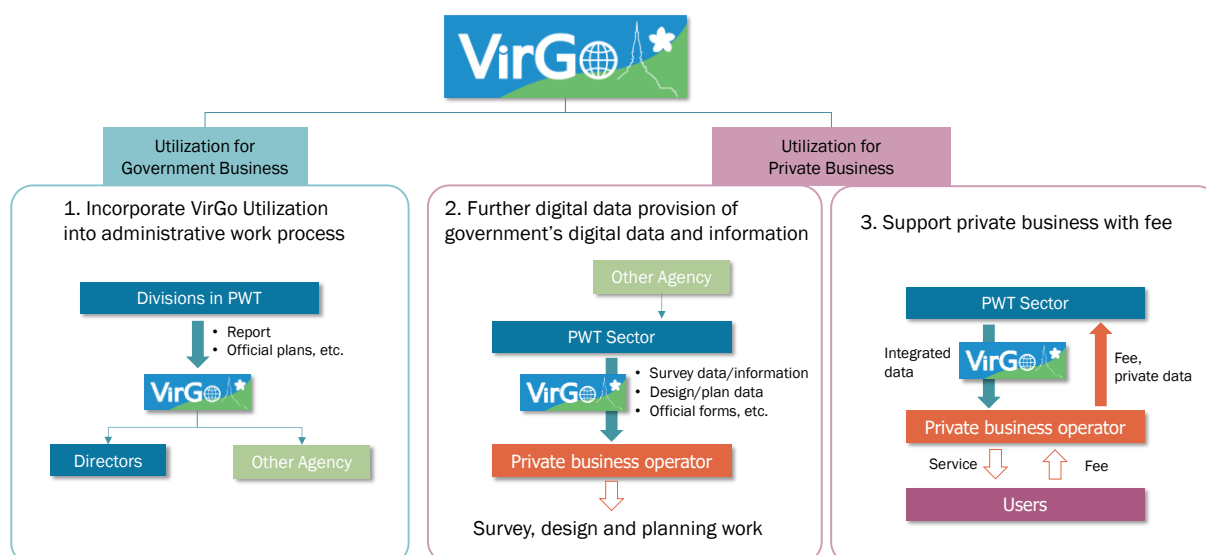
The purpose of Program 1 is to enhance the utilization of the digital urban information sharing system for public service and private business.

The draft idea of the output and activities for Program 1 is shown in Table 9-4, and the draft idea of pilot models of business utilization of VirGo for Program 1 is shown in Figure 9-2.

Table 9-4: Output and Activity for Program 1 (Draft)

Output	Activity
1. Analysis of Demand on Business Utilization of GIS-PF	<ul style="list-style-type: none"> • Questionnaire and interview survey to agencies and private business operator • Demand analysis • Research availability of public and private data and information
2. Case Study of Business Utilization	<ul style="list-style-type: none"> • Develop frameworks of business utilization of VirGo • Feasibility study of each case of business utilization • Research private business operator’s interest for collaboration
3. Selection of Pilot Models of Business Utilization	<ul style="list-style-type: none"> • Select pilot models by evaluation of the feasibility and possibility of collaboration
4. Trial Operation of Pilot Models	<ul style="list-style-type: none"> • Data collection • Modification of VirGo • Training and trial of business utilization • Verification of effectiveness of business utilization • Updating VirGo operation manual
5. Dissemination	<ul style="list-style-type: none"> • Introduce and discuss in UMP, Workshop • Develop promotion video and brochure

Source: DHUP of MPWT



Source: DHUP of MPWT

Figure 9-2: Draft Idea of Pilot Models of Business Utilization of VirGo

(3) Program 2: Establishment of License System for Architect and Engineer

The purpose of Program 2 is to enhance the capacity of government officers, architects, and engineers in the urban development management field through the operation of personal license system.

The draft idea of the output and activity for Program 2 is shown in Table 9-5, and the draft idea of framework of license system is shown in Figure 9-3.

Table 9-5: Output and Activity for Program 2 (Draft)

Output	Activity
1. Analysis on Current License and Education System	<ul style="list-style-type: none"> • Research existing license system/training and education program in Laos • Develop list of existing training and education program • Case study of license system in other country
2. Scope and Framework of License System	<ul style="list-style-type: none"> • Formulation of scope and framework of license system with following functions: <ul style="list-style-type: none"> ➢ Type of license (e.g. urban planner, architect, road engineer) ➢ Requirement of application ➢ Methods for obtaining qualifications (e.g. Examination-based Method, Credit-based Method) ➢ Effectiveness of license in business
3. Development of Program and the Manual	<ul style="list-style-type: none"> • Identify scope of curriculum and examination • Develop program and contents of curriculum and examination • Coordinate with lecturers • Develop draft of operation manual
4. Trial Operation of Program	<ul style="list-style-type: none"> • Conduct trial operation of curriculum and examination
5. Establish Legal System	<ul style="list-style-type: none"> • Formulation of Ministerial regulation on license of architect and engineer
6. Dissemination	<ul style="list-style-type: none"> • Introduce and discuss in UMP, Workshop • Develop promotion video and brochure

Source: DHUP of MPWT

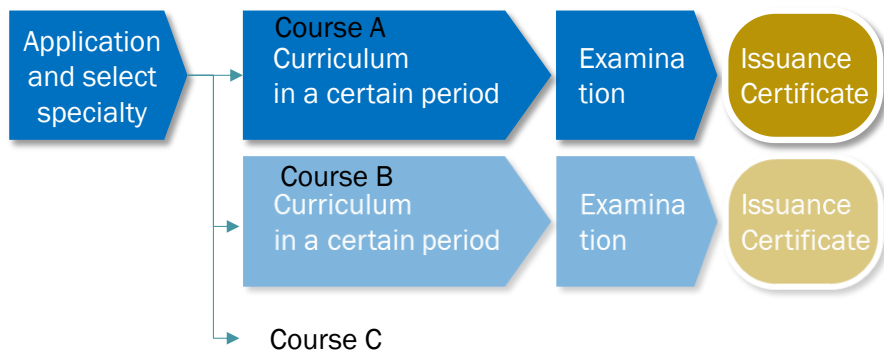
National License of Architect and Civil Engineer

- Specialty: Urban Planner, Architect, Road Engineer, Hydraulic Engineer, Geotechnics Engineer, Environmental Engineer, etc.
- Effectiveness: Government project requires expert/engineer to own the license
- Methods for obtaining qualifications (2 options)

Option1:

Examination-based Method

- Ordinally Method
- Take a curriculum and examination in a certain period



Option2:

Credit-based Method

- University style
- Take necessary classes and credits for applied specialty in long-period



Annual Curriculum Schedule	Class	4	5	6	7	8	9	10	11	12
	Urban Plan	•				•				•
Environment		•				•				•
Structure safety	•				•		•			
Fire safety		•				•		•		
Disaster			•			•		•		

Source: DHUP of MPWT

Figure 9-3: Draft Idea of Framework of License System

(4) Program 3: Implementation of Collaborative Urban Development Projects

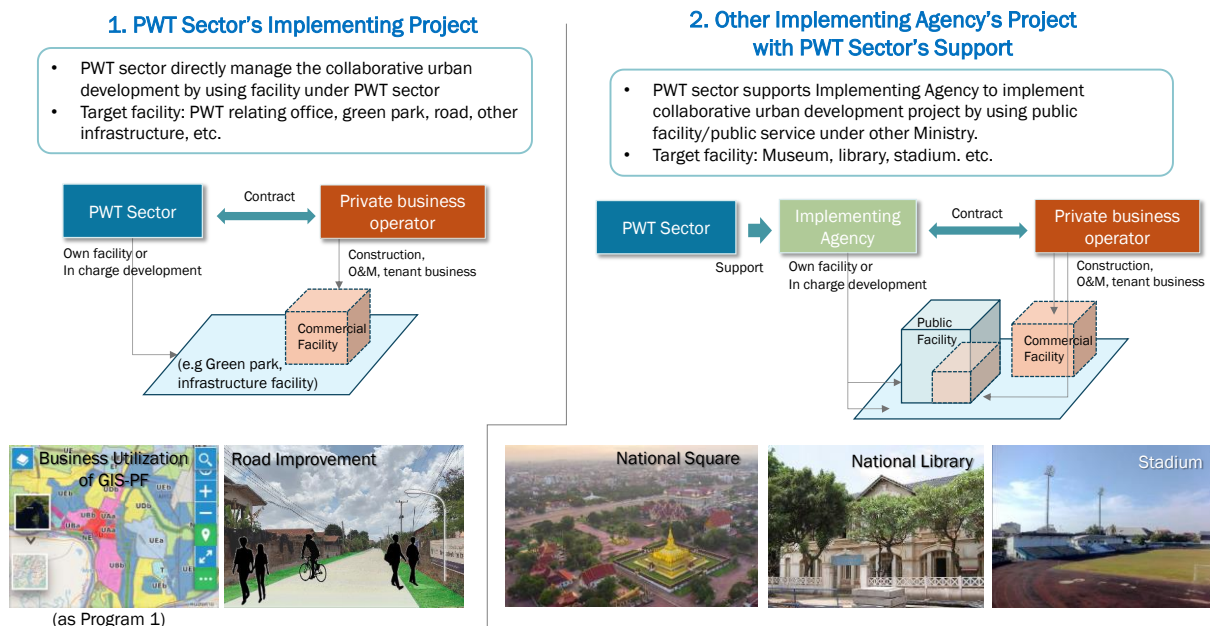
The purpose of Program 3 is to enhance the capacity of preparation and implementation of collaborative urban development projects in Vientiane Capital.

The draft idea of the output and activity for Program 3 is shown in Table 9-6, and the draft ideas of model project of collaborative urban development are shown in Figure 9-4.

Table 9-6: Output and Activity for Program 3 (Draft)

Output	Activity
1. Development of Long list of Candidate Project in Vientiane Capital	<ul style="list-style-type: none"> Collect information of on-going/planned government projects under PWT sector and other agency Research with implementing agency for the possibility of collaboration Develop long list of candidate project
2. Selection of Model Projects	<ul style="list-style-type: none"> Study on basic framework of collaboration Sounding survey to private business operator Coordinate with implementing agency Select 3 model projects (different type) from long list
3. Preparation of Model Projects	<ul style="list-style-type: none"> Conduct feasibility study of model project Formulate urban plan for model project site Prepare procurement of private business operator
4. Implementation of Model Projects	<ul style="list-style-type: none"> Conduct procurement and contract Supervise (or support) implementation (design, construction and O&M)
5. Establishment of Institutional System	<ul style="list-style-type: none"> Formulate rule on incentive for private business operator Update guideline
6. Dissemination	<ul style="list-style-type: none"> Introduce and discuss in UMP, Workshop Develop promotion video and brochure

Source: DHUP of MPWT



Source: DHUP of MPWT

Figure 9-4: Draft Ideas of Model Project of Collaborative Urban Development