Asia-Pacific
Economic Cooperation

PPP Best Practice

APEC Transportation Working Group

October 2015

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1. Executive Summary

1-1. Background and purpose

In the Asia -Pacific Economic Cooperation (APEC) Leaders' 2013 Declaration, economies shared their aspiration to reach a seamlessly and comprehensively connected and integrated Asia -Pacific through the pillars of Physical Connectivity, Institutional Connectivity and People -to -People Connectivity. For strengthening APEC connectivity, economies have made full efforts to develop transport networks in the region. Owing to devoted efforts, transport infrastructure has improved and have contributed to the economic growth in the APEC region.

Meanwhile, the remarkable economic growth in APEC has brought further increasing demand for transport infrastructure networks. On the other hand, APEC economies are facing difficulties in financing all their infrastructure projects due to their severe fiscal circumstances and the scale of the necessary costs. Therefore, Public Private Partnership (PPP) has become a promising measure since infrastructure including transport systems can be built and operated by utilizing the private sector's finance and know -how. By choosing the PPP scheme with appropriate role division and risk allocation between the public and the private sector, it is expected that APEC economies can build and operate transport infrastructure more effectively and efficiently under the APEC Connectivity Blueprint for 2015 -2025 endorsed at the 2014 APEC Leaders Meeting.

One year before the Leaders Meeting, the initiative of "PPP Best Practice" was launched at the 8th APEC Transportation Ministerial Meeting (TMM8) held in Tokyo in September 2013. TMM8 Joint Ministers declaration (JMS) describes that ministers instruct the TPTWG to explore opportunities for deepening cooperation including sharing experiences and best practices in transportation infrastructure investment, financing and operations, particularly with regard to public-private partnerships. In JMS, all ministers reaffirmed that transportation infrastructure development of essential to the promotion of economic growth in the APEC region. In addition, TMM8 also stressed economies aim to invest in new, upgraded or replacement infrastructure, in order to meet increased transportation needs. Therefore, public-private cooperation and inter-governmental dialogue are important to ensure adequate, sustainable investments in, and maintenance and management of, transportation related projects. The APEC Transportation Working Group Meeting (TPTWG) initiated a survey for compiling "PPP Best Practice" under the direction of TMM8. Aiming at promoting understanding on PPP in the transport sector and expanding it in the APEC region, the survey compiled transport PPP projects along with the analysis on transport -inherent risks as "PPP Best Practice".

In TPTWG held in Hong Kong in 2014, Japan as proposing economy shared its idea that outcomes is to create a compendium of PPP best practices that will act as a guidance for economies to effectively invest in and manage transportation infrastructure. Based on discussion in this TPTWG, the survey started in order to collect information such as project name, organization, place, period, total cost, background, flow of approval of the project as PPP project, contents of the project

(transport mode, form of PPP, project descriptions, roles of private and public sector, government support, responding to risks, etc.) and effects of the project (situation of utilization, income and expenditure, effects on solving problems) After the TPTWG 40, Japan sent questionnaires to all economies and kindly requested them to submit relevant information of PPP projects. All economies sent reply quickly and accept field survey team. We, Japan, would like to take this opportunity to express our sincere appreciation for all economies' acceptance and cooperation to this survey.

An interim report of the survey was presented in the TPTWG held in Jeju (Korea) in May 2015. This report has reflected valuable comments submitted from economies in and after the TPTWG.

The project has been supported by relevant PPP projects conducted under the APEC TPTWG framework. One example is "Workshop for Bankable Public-Private Partnership in Transport Supply Chain Infrastructure." TMM8, which adopted TMM8 Follow-up projects, supported increasing access for women in the transportation sector. This project aims at providing a framework to assist developing APEC Economies to develop well prepared and bankable PPP transport infrastructure projects and strategies to enable women to play a greater role in transport infrastructure development and implementation. There is a need for a framework to guide the development of bankable PPP proposals to help ensure the best transport infrastructure solutions are established across member APEC Economies. Australia took the initiative to develop a project for this purpose in conjunction with selected member economies, APEC TPTWG and UNESCAP. A five-day workshop for Bankable Public-Private Partnership in Transport Supply Chain Infrastructure was funded and hosted in Jakarta, Indonesia in March 2015 by Australian Government under this framework. This project also shows the guiding principles listed below for APEC economy leaders, policy makers and implementers across the entire PPP life cycle.

1. Political leadership and support for the PPP process is underpinned by capability within government to successfully plan and implement PPP projects.

2. Access to the resources for diligent project preparation, management and implementation is essential.

3. A clear and transparent procurement process results in successful contracts.

4. Comprehensive feasibility studies are essential, prior to the development of a robust business case. To ensure that viable projects become PPPs, a systematic approach to determining feasibility is required.

5. The best outcomes are achieved through close collaboration between stakeholders, responsible agencies, private sector and institutions, the public and consultants.

6. Projects need effective government throughout the entire lifecycle.

1-2. Outline

(1) PPP projects in this study

The cases in Best Practice on PPP as well as the legal frameworks of PPP in economies were collected through questionnaires, interview surveys to some economies. In total, 63 successful PPP projects are collected in the survey (**Figure 1-1**). Transport modes of the projects vary ranging from land transportation, maritime transportation to air transportation. The list of the projects is shown on **Figure 1-2**. Each case study describes the outline of the project and points out how the risks are dealt with.

Figure 1-1: The number of PPP projects by economy

Economy	The number of projects	Transportation mode			
		Land (road)	Land (rail)	Maritime	Air
Australia	2	2	0	0	0
Brunei	0	0	0	0	0
Canada	3	1	1	0	1
Chile	3	2	0	0	1
China	0	0	0	0	0
Hong Kong,China	0	0	0	0	0
Indonesia	9	3	4	1	1
Japan	9	1	3	0	5
Korea	2	1	1	0	0
Malaysia	4	1	2	0	1
Mexico	3	1	0	1	1
New Zealand	1	1	0	0	0
Papua New Guinea	1	0	0	0	1
Peru	0	0	0	0	0
The Philippines	8	2	2	1	3
The Russian Federation	3	1	2	0	0
Singapore	0	0	0	0	0
Chinese Taipei	3	1	1	1	0
Thailand	5	2	2	1	0
The United States	2	1	1	0	0
Viet Nam	5	3	0	1	1
Total	63	23	19	6	15

Figure 1-2: PPP projects picked up in Best Practices on PPP

Economy	Transportation mode	Project name	PPP form
Australia	Land transportation (road)	● Peninsula Link (Freeway)	BOT
	Land transportation (road)	● M7 motorway	BOT
Canada	Land transportation (road)	● Chief Peguis Trail Extension Project	BOT

Economy	Transportation mode	Project name	PPP form
	Land transportation (rail)	● The Canada Line	BOT
	Air transportation	● Iqaluit Airport Improvement	BOT
Chile	Land Transportation (road)	● Interconexión Vial Santiago -Valparaíso -Viña del Mar on Route 68	-
	Land Transportation (road)	● East - West International System	Concession
	Air transportation	● Arturo Merino Benítez de Santiago International Airport Concession (Second Bid)	Concession
Indonesia	Land transportation (road)	● Nusa Dua - Ngurah Rai - Benoa Toll Road	BOT
	Land transportation (road)	● Tanjung Priok Port Access Road	Operation
	Land transportation (road)	● Toll road between Pasirkoja and Soreang	-
	Land transportation (rail)	● Soekarno -Hatta International Airport Rail Link	BOT
	Land transportation (rail)	● Tugu Station Area Development, Malioboro Pedestrianization	BOT
	Land transportation (rail)	● Bandung Light Rail Transit System	-
	Land transportation (rail)	● Freight railway between Tanjung Enim and Tanjung Api Api	-
	Maritime transportation	● Maloy International Port	BOT
	Air transportation	● Bali International Airport	-
Japan	Land transportation (road)	● Matsuyama City Omnibus Town Plan	Privatization
	Land transportation (rail)	● Minato -Mirai Line	Joint Venture
	Land transportation (rail)	● Toyama Light Rail	Joint Venture
	Land transportation (rail)	● Tsukuba Express	Joint Venture
	Air transportation	● The Project on the Development and Operations of International Passenger Terminal at Tokyo (Haneda) International Airport	Stand-alone basis
	Air transportation	● Apron Construction Project in the International Airline Area of the Tokyo International Airport	Operation
	Air transportation	● Tajima Airport	Concession
	Air transportation	● Sendai Airport	Concession
	Air transportation	● New Kansai International Airport Co. Ltd	Concession
Korea	Land transportation (road)	● Incheon Bridge	BOT
	Land transportation (rail)	● Subway line 9 (Phase 1)	BOT
Malaysia	Land transportation (road)	● Kajang -Seremban Highway	BOT
	Land transportation (rail)	● STAR LRT	Operation (currently)

Economy	Transportation mode	Project name	PPP form
	Land transportation (rail)	● KLIA Ekspres	BOT
	Air transportation	● KLIA2	BOT
Mexico	Land transportation (rail)	● Suburban Train Mexico City - Toluca	BOT
	Maritime transportation	● Veracruz Port	BOT
	Air transportation	● New Mexico City International Airport	-
New Zealand	Land transportation (road)	● Transmission Gully (Highway)	BOT
Papua New Guinea	Air transportation	● Port Moresby International Airport (PMIA)	BTO
The Philippines	Land transportation (road)	● Tarlac-Pangasinan-La Union Expressway	BTO
	Land transportation (road)	● Cavite-Laguna Expressway	BOT
	Land transportation (rail)	● Manila LRT1 Line	BTO
	Land transportation (rail)	● North-South Railway (South Line)	Build-Gradual Transfer-Operate and Maintain (BGTOM)/(Build Transfer-Operate and Maintain (BTOM)
	Maritime transportation	● Davao Sasa International Port	BTO/BOT
	Air transportation	● Laguindingan International Airport	Operate - Add - Transfer (OAT)
	Air transportation	● Mactan-Cebu International Airport	BOT
	Air transportation	● New Bohol Airport	Operate - Add - Transfer (OAT)
Russia	Land transportation (road)	● Highway bridge over the Lena River	BOT
	Land transportation (rail)	● High -speed rail between St. Petersburg and Bulslovskaya	-
	Land transportation (rail)	● Baikal -Amur Mainline Railway and Trans -Siberian Railway	-
Chinese Taipei	Land transportation (road)	● Private Participation in the Installation and Operation of the National Freeway Electronic Toll Collection System	BOT
	Land transportation (rail)	● Taiwan High Speed Rail	BOT
	Maritime transportation	● Kaohsiung Port Wharves	BOT
Thailand	Land transportation (road)	● Sri Rat - Dao Khanong - Western Outer Ring Road Expressway	BOT
	Land transportation (road)	● Inland container depot	-
	Land transportation (rail)	● BTS	BOT
	Land transportation (rail)	● MRT	Operation

Economy	Transportation mode	Project name	PPP form
	Maritime transportation	● Laem Chabang Port B5 and C3 Berths	BOT and Operation
The United States	Land transportation (road)	● I -495 Capital Beltway HOT Lanes	BOT
	Land transportation (rail)	● Eagle project	BOT
Viet Nam	Land transportation (road)	● Bien Hoa -Vung Tau Highway	-
	Land transportation (road)	● Ho Chi Minh City - Trung Luong Highway	Operation
	Land transportation (road)	● Dau Giay -Phan Thiet Expressway	BOT
	Maritime transportation	● Lach Huyen International Port (port phase I)	Operation
	Air transportation	● Long Thanh International Airport	BOT

(2) PPP forms

There are various forms of PPP, depending on the level of participation of public sector. There are also some major PPP forms (types of contract or agreement) in respective categories separated by difference of responsibilities and allocation of risk between public and private sector. Typical forms are shown on **Figure 1-3.**

Figure 1-3: Characteristics of major PPP forms

Major PPP forms	Description
Privatization	● Private sector buys and operates the infrastructure which public sector built. The ownership is completely transferred to private sector.
Joint Venture	● Public sector and private sector jointly establish company to build and operate the infrastructure.
BOO (Build - Own - Operate)	● Private sector builds and operates the infrastructure with ownership
BOT (Build - Own - Transfer)	● After building and operating, private sector transfers the infrastructure to public sector
BTO (Build - Transfer - Operate)	● Private sector builds the infrastructure. After construction, private sector transfers the infrastructure to public sector and it is leased to private sector for operation
Concession	● Private sector buys business right and operates the infrastructure which public sector built
Operation	● Private sector operates the infrastructure under commission which public sector built

(3) Managing transport -inherent risks

PPP involves a wide range of risks such as political and regulatory risk, land acquisition risk, foreign currency exchange risk, natural disaster risk, design risk, cost -increase risk, investment risk (construction risk and completion risk), operating risk, demand risk, environmental risk and social risk. Among them, especially demand risk, operating risk, investment risk and land acquisition risk need to be managed in transport PPP projects. This survey analyzes how to manage these risks in respective transport PPP projects. The sheet for each project also shows useful management of other risks.

-Demand risk: It is difficult to make an accurate forecast of transport demand for a specific transport infrastructure due to passengers' behavioral change, excessive expectation and other reasons. If actual transport volume fall short of the forecast, income will be smaller than expected and revenue may not cover the cost of the operation.

-Operating risk: Operational cost is dependent on performance of transport operation as well as energy and wage inflation. In particular, it is not easy to predict energy and wage inflation in the long term. Sometimes, the cost can be shifted onto the price of transport. If it cannot be shifted, it will reduce business profit. Improvement of performance needs human development and introduction of appropriate technology. Performance improvement is also essential for reducing the risk of traffic accidents and providing higher quality service.

-Investment risk: Initial cost of transport infrastructure such as building roads, rails and stations tends to be large. Therefore, such large initial cost may not be able to be financed as planned and interest may be a huge burden on management. Appropriate measures such as using equity and low interest long term loan should be considered.

-Land acquisition risk: In general, transport infrastructure such as roads, railways, seaports and air ports require broad land areas. Sometimes land acquisition may be opposed by residents and may lead to social problems which take lengthy time to solve. Once a land acquisition problem occurs, project managers are forced to reconsider the initial plan and total cost will be increased. In the worst case, projects may be interrupted.

1-3. Lessons learned

(1) Viewpoints

In order to successfully conduct transport projects through PPP which are economically viable while solving social issues such as traffic congestion, this survey provides important lessons. Summarizing these important lessons, three essential viewpoints are identified. First of all, it is crucial to have “the legal and institutional framework for PPP” at the governmental level. The second viewpoint is that at the individual project level, throughout the process of transport PPP projects, “careful planning with substantive research and discussion among all parties” is required. The third viewpoint is that “management and allocation of risks” is also necessary at the individual transport PPP project level.

(2) The governmental level: “The legal and institutional framework for PPP”

[Issues]

- It is necessary to set legal and institutional framework for PPP at the governmental level in order to secure transparency and fairness of the process of transport PPP projects. Such framework also contributes to provide stability of the governmental commitment to transport PPP projects. Stable legal and institutional interpretation should be included in this framework.

[Lessons]

- It is found that the legal framework helps the private sector to foresee the future and calculate risk of PPP projects in advance. The legal and institutional framework defines the PPP scheme including the responsibility of governmental organizations in charge of PPP promotion, the procedures of approval and the target of PPP projects and their budgets. It also assists in establishing a legal framework favorable to private investment in the transport sector. Government support based on the legal and institutional framework is introduced into PPP framework to keep economic viability of transport PPP projects, by managing risks including transport -inherent risks.
- This survey observes that in many economies, directions and policies on PPP have been decided by departments which are established or designated as the organization in charge of promoting PPP within the government. There are cases in which such departments provide expertise and various support for the implementation of transport PPP projects.

(3) The individual project level: “Careful planning with substantive research and discussion among all parties” and “management and allocation of risks”

(I) Project Development

[Issues]

- Planning feasibility and visibility is crucial for successful PPP projects. To ensure this important point, careful planning including appropriate management and allocation of risks is necessary in drafting PPP projects. If feasibility and visibility of the project is not clear, it will be very difficult to find private partners to initiate the project. Sometimes political risk impedes project feasibility and

visibility. The private sector hopes to avoid sudden policy changes since it may harm the credibility of the project. Therefore the private sector examines past political changes carefully.

[Lessons]

- This survey shows that feasibility studies (FS) of transport PPP projects should be conducted at the drafting stage to assess economic feasibility and its expected outcome such as improvement of traffic congestion. Some well researched FSs contribute to steady implementation of the PPP project. In order to secure the budget for FS, some ASEAN Member States receive international assistance such as official development assistance (ODA) which also provides expertise of PPP.
- In some projects compiled under the survey, the unsolicited scheme under which the Government responsible for PPP adopts a proposal submitted by the private sector is helpful in increasing the private sector's incentive to participate in the PPP project,

(II) Project Planning

[Issues]

- It is necessary to clarify appropriate role division and risk allocation between the public and the private sector in implementing specific PPP projects. Role division and risk allocation among participants in specific PPP projects depend on the form of PPP such as BOO, BOT and BTO. Therefore the 'decision of the form of PPP is crucial in risk management.
- If the role division and risk allocation between the public and private sector cannot be agreed and therefore finding an appropriate private partner becomes difficult, then additional government support may be considered as a way to reduce private risk.
- When unexpected change surrounding the project harmed its economic viability, appropriate government support was considered in order to recover feasibility in some projects compiled.
- Realizing women in transport, transport PPP projects need to increase access of transport infrastructure for women.

[Lessons]

- Some economies deliberates the eligibility (economic viability and solving social issues) and the feasibility of the transport PPP projects based on FS in advance, considering the transport -inherent risks based on their transport master plan.
- Some economies conduct multistep evaluations by ministries and governmental organizations responsible for all PPP promotion, based on several perspectives before the adoption of individual transport PPP projects. In this process, double -check on the eligibility and the feasibility of the transport PPP projects is implemented. There are many cases compiled in the survey where the governmental organizations responsible for PPP promotion work together with transport ministries to find better role division and risk allocation between the public and the private sector.
- In the case where finding an appropriate private partner candidate seems difficult due to transport -inherent risks, some economies carry out additional governmental support such as:

  -Availability payment for demand risk: Payment from the public sector to the private sector depends on the maintenance of transport infrastructure, not on the volume of users.

-Subsidy for investment risk: Subsidy provided by the public sector for compensating unavoidable deficit to be expected in the transport PPP project.

-Equity finance and low interest long term loan for operating risk: High interest makes the private partner difficult to operate the PPP project because interest should be paid regardless of financial results. In particular, equity finance is helpful for improvement of balance sheet.

-Governmental land acquisition: The public sector purchases land necessary for the transport PPP projects under the land acquisition law instead of the private sector. If necessary, the public sector can purchase the land under the Compulsory Purchase of Land Act.

- Women in Transport has just started, and there are few transport PPP projects which paid much attention to women. But in the project planning phase, transport PPP projects need to consider not only improving convenience for women as users, but also engaging women as work force.

(III) Project Procurement

[Issues]

- If an inappropriate private partner is designated, the project will be badly organized and managed. Therefore, selection of the private partner is very crucial. In general, it is necessary to invite as many candidates as possible to ensure competitiveness. At the same time, a candidate with high capability and many experiences to manage the project should be selected through the screening process.
- It is possible that a partner designated through a transparent and fair procurement does not have enough capability, experience and reliability. Therefore, transparent, fair and competitive procurement should be introduced. This will increase the incentive of the private sector to be involved in PPP. Also, procurement providing appropriate specifications can help reduce risks and improve quality.
- The private sector will not participate in a PPP project which does not provide appropriate specifications or risk clarity. In the evaluation process, the quality of transport infrastructure such as user utility, safety and environmental impacts should be considered as well as the costs.

[Lessons]

- This survey shows that several economies launch market sounding nationally and internationally where the public sector explains the transport PPP projects under consideration to the private sector. The public sector can obtain feedback during the market sounding that will assist in framing an appropriate procurement process. Therefore, this acts as a research tool to assist in gathering information prior to developing a business plan and procurement strategy.
- In some economies, Ministries responsible for PPP under the support of PPP -promoting organizations explain in advance to the private sector how the winning bidder of specific transport PPP projects are selected (evaluation criteria). The organization responsible for promoting PPP in some economies publishes a guideline for appropriate procurement process for PPP projects. It also gives advice and information to the ministries or bodies which are ready to conduct the procurement. Sometimes the ministries in charge hire consultants with expertise for the procurement process.

(IV) Project Implementation and Monitoring

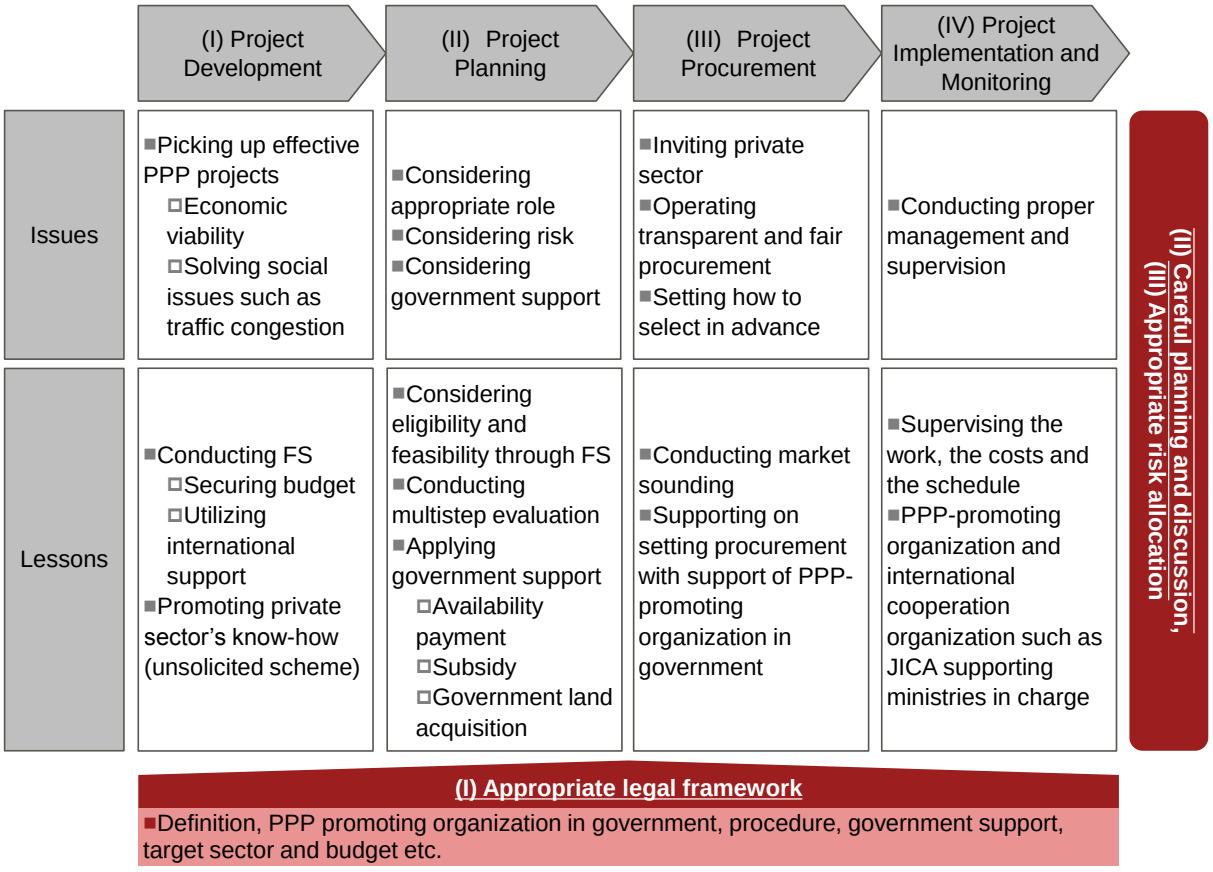
[Issues]

- If management and supervision over the PPP project is not appropriate, the project will not succeed. Appropriate management and supervision is essential throughout the implementation of a PPP project. If it becomes difficult to achieve the goals expected in the planning stage, the public sector should instruct the private partner to change the plan based on the current assessment of the PPP project.

[Lessons]

- It is found that the ministries responsible for the project supervises the work, the costs and the schedule of building and operation of the transport infrastructure managed by the private partners. When a serious problem arises, the ministries and the private partner should negotiate how to solve it and may review the contract under supervision of the ministry and/or organization responsible for promoting PPP projects.
- In some economies, multilateral organizations and fora and international cooperation organizations such as Japan International Cooperation Agency (JICA) hold training courses and dispatch experts to ministries which conduct evaluation of progress and effects of transport PPP projects.

Figure 1-4: Issues and lessons for steady implementation of transport PPP projects



2. Cases of Transport PPP Projects

2 -1. Australia

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Peninsula Link (Freeway)	BOT
2	Land transportation (road)	● M7 motorway	BOT

(2) Cases

1. Basic information

1 -1. Economy	● Australia
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Peninsula Link (Freeway)
1 -4. Major implementer	● LMA ● Southern Way consortium (consisting of Abigroup, Bilfinger Berger and Royal Bank of Scotland)
1 -5. Site	● The state of Victoria
1 -6. Period	● 2010 - 2013 (construction)
1 -7. Total cost	● AU$849 million (incl. land acquisition)
1 -8. Form	● BOT

2. Summary

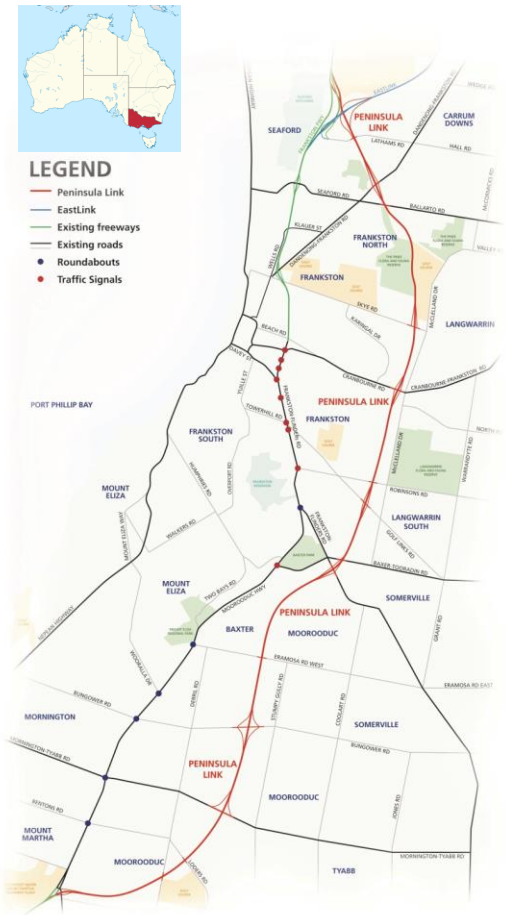
● Peninsula Link is a 27 kilometre four lane freeway between the Frankston Freeway -EastLink Interchange at Carrum Downs and the Mornington Peninsula Freeway at Mount Martha. The road opened to traffic on 17 January 2013 and has significantly reduced congestion on key traffic routes in Frankston and the Mornington Peninsula, particularly during peak periods. Furthermore, it facilitates tourism and business travel to the Peninsula.

● The project is the first availability PPP road project employed in Australia.

3. Background and purposes

● Peninsula Link is a key part of the AU$38 billion Victorian Transport Plan and is one of the first in a pipeline of Projects aimed at supporting the State's economic growth, reducing congestion, improving safety on our road network and linking communities.

● To assess the quantitative value for money outcome of the Project, the net present cost of the service payments to be paid to private sector was compared with the net present cost of State based delivery. If the cost of the service payments to be paid to private sector, it was AU$9 million lower than the cost of delivery by the State.

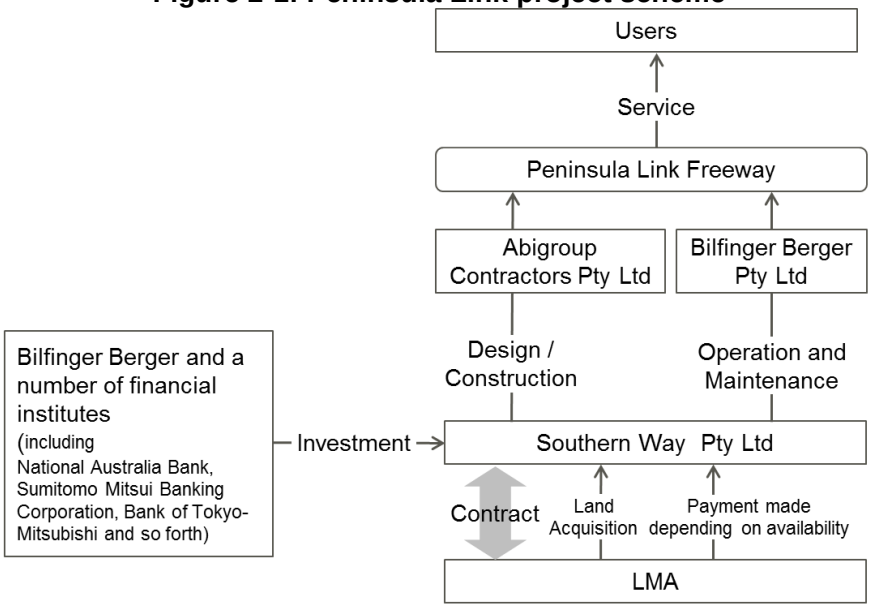


Source: Southern Way

4. Content of implementation (development and role divisions)

- LMA, as the road controlling authority on behalf of the state, managed the development of the project. In January 2010, the State executed the Project Deed with Southern Way to design, construct and finance the Project and to operate and maintain the Project over a 25 year period.
- Full ownership of the public infrastructure remains with the public sector.
- The service payment is made by the State - no toll applied.

Figure 2-1: Peninsula Link project scheme



Source: Created based on "Partnerships Victoria Project Summary",
Linking Melbourne Authority in conjunction with the Department of Treasury and Finance

5. Government support

- Risk of cost and delay associated with land acquisition, legal challenges to environmental protection and biodiversity conservation, and discovery of items of aboriginal heritage and artefacts at the site is taken by the State

6. Outcome (usage, achievement of the purposes and business situation)

- The Peninsula Link project successfully provides:
  - An alternative and resilient transport corridor between the Frankston Freeway -EastLink Interchange at Carrum Downs and the Mornington Peninsula Freeway at Mount Martha.
  - Reduction of travel time, with a full trip between Mt Martha and Carrum Downs taking just 17 minutes - a saving of up to 40 minutes in peak periods.

7. Management of transport -inherent risks

[Demand risk]

- Availability payment system has been introduced in the Peninsula Link project, and Southern Way can receive payment from LMA not depending on its usage, but on quality of maintenance. Therefore Southern Way can reduce demand risk.

1. Basic information

1 -1. Economy	● Australia
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● M7 motorway
1 -4. Major implementer	● NSW Roads and Traffic Authority (RTA) ● Westlink Motorway Ltd and WSO Co Pty Ltd
1 -5. Site	● the state of New South Wales
1 -6. Period	● 2001 - 2007 (construction)
1 -7. Total cost	● AU$2.64 billion (incl. AU$360million funding by the federal government)
1 -8. Form	● BOT

2. Summary

● The M7 is four lanes and 40 kilometres long (Sydney's longest motorway), with dual carriageways in both directions. A wide central median existed to cater for future transport needs. At the time of construction it was Australia's largest.

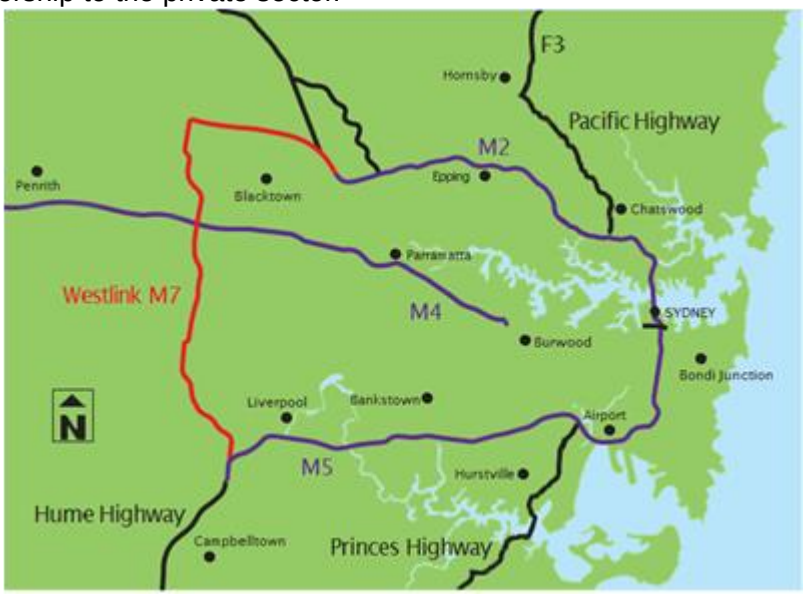
3. Background and purposes

● Conceptual planning occurred over several decades (can be traced back to the 1960s). The project was foreshadowed in several preliminary planning documents, allowing some expectation in the community and industry that a motorway would be developed in the future.

● Inclusion of the M7 in the Action for Transport 2010 plan gave priority to the project. Although briefly, the plan set out the motivation behind the project and committed the Government to a target delivery date. The plan gave preliminary indications of the how the project would be funded.

● The RTA performed a detailed cost−benefit analysis before proceeding to procurement of the project. The analysis captured the initial and recurring capital costs, operation and maintenance costs, road user benefits (savings in vehicle operating costs, travel time, and accident costs), pedestrian benefits and environmental externalities. The analysis confirmed a net present benefit for the project of AU$4.6 billion, and a benefit cost ratio of 3.4.

● The RTA procured the Project under a BOT PPP, allowing the NSW to transfer the majority of the risks of construction and ownership to the private sector.

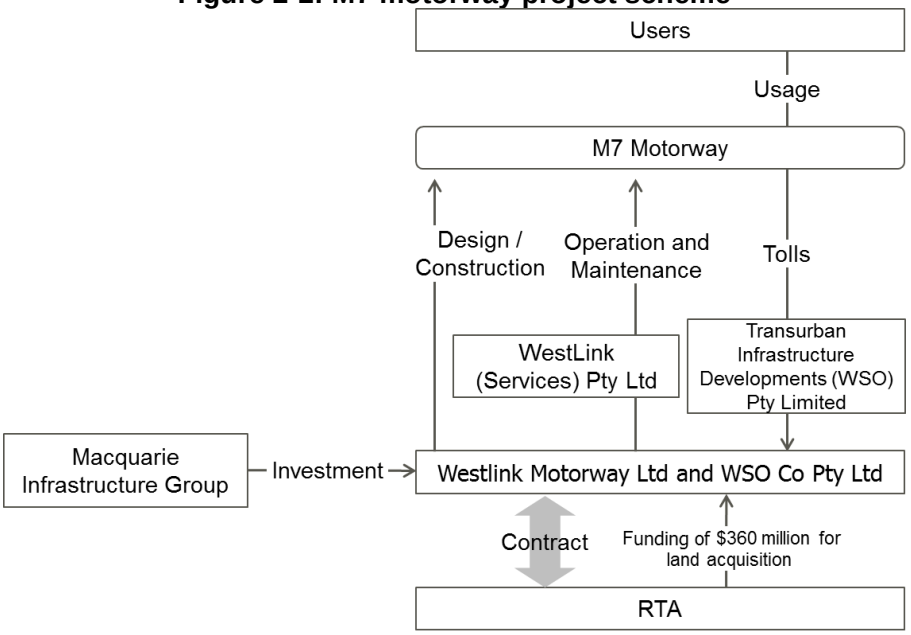


Source: Westlink Motorway Ltd

4. Content of implementation (development and role divisions)

- The winning consortium was Westlink Motorway, which included road constructors Abigroup and Leighton Contractors, tolling and customer management operator Transurban and motorway investor Macquarie Infrastructure Group. This consortium structure was unique at the time, being the first to include a tolling and customer management operator as an equity investor.

Figure 2-2: M7 motorway project scheme



Source: Created based on "Infrastructure Planning and Delivery: Best Practice Case Studies", Australian government, Department of Infrastructure and Transport

5. Government support

- The federal government contributed AU$360 million in funding, primarily for land acquisition, in acknowledgement of its status as an important connection in the National Highway network.

6. Outcome (usage, achievement of the purposes and business situation)

- The M7 was launched eight months ahead of schedule; and the electronic tolling system 10 months ahead of schedule. The Project became a successful example of how a BOT model allowed a motorway to be delivered when full government funding was not available, whilst also allowing for the transfer of appropriate risks to the private sector.
- In 2008 an Ernst and Young report commissioned by Transurban found that the net present value of the Sydney toll road network was approximately 15% higher than estimated in the cost benefit analyses of the original motorways. This was attributed to a number of factors including higher than forecast environmental benefits and higher than forecast traffic flows.
- Six months after tolling commenced on the motorway, Westlink Motorways commissioned the market research firm UMR to undertake a telephone survey of 600 western Sydney residents. Approximately 75% of respondents were of the opinion that the M7 was either 'very positive' or 'somewhat positive', with only 6% expressing a negative view.
- Whilst actual traffic flows on the M7 have fallen below initial forecasts, the increased average journey length, and an extended ramp -up period than forecast (with traffic still growing at 6 -7% per annum, five years after opening) have ensured that the motorway achieves its financial objectives.

7. Management of transport -inherent risks

[Demand risk]

- The M7 has a revenue -sharing agreement, which will see windfall revenue by the operators of the M7 provided back to the state government once a fixed patronage threshold is reached.

2 -2. Canada

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Chief Peguis Trail Extension Project	BOT
2	Land transportation (rail)	● The Canada Line	BOT
3	Air transportation	● Iqaluit Airport Improvement	BOT

(2) Cases

1. Basic information

1 -1. Economy	● Canada
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Chief Peguis Trail Extension Project
1 -4. Major implementer	● City of Winnipeg
1 -5. Site	● City of Winnipeg
1 -6. Period	● Construction: 2011 - 2013 ● Operation: 2014 - 2043
1 -7. Total cost	● CA$147.8 million
1 -8. Form	● BOT

2. Summary

- The Chief Peguis Trail extension Project involves the construction of a new segment extending the Chief Peguis Trail roadway between Henderson Highway and Lagimodiere Boulevard.
- The final VFM results demonstrate that PPP approach provide the City with estimated value saving of approximately CA$31 million, in comparison to the traditional delivery approach. This represents 17.6% savings.

3. Background and purposes

- The Chief Peguis Trail extension Project involves the construction of a new segment extending the Chief Peguis Trail roadway between Henderson Highway and Lagimodiere Boulevard.
- This new extension will be a four lane, divided roadway. This new section of roadway will be designated as a truck route there by attracting truck traffic from many of the surrounding streets. The design of the roadway will also allow for expansion to 6 lanes in the future.
- The Project will include several key features as follows;
  - Grade separation at Rothesay Street
  - Multi -use pathways and multi -use bridge
  - Pump station and dry pond
  - Intersection improvements and lane widening
  - Sound attenuation, noise walls, landscaping

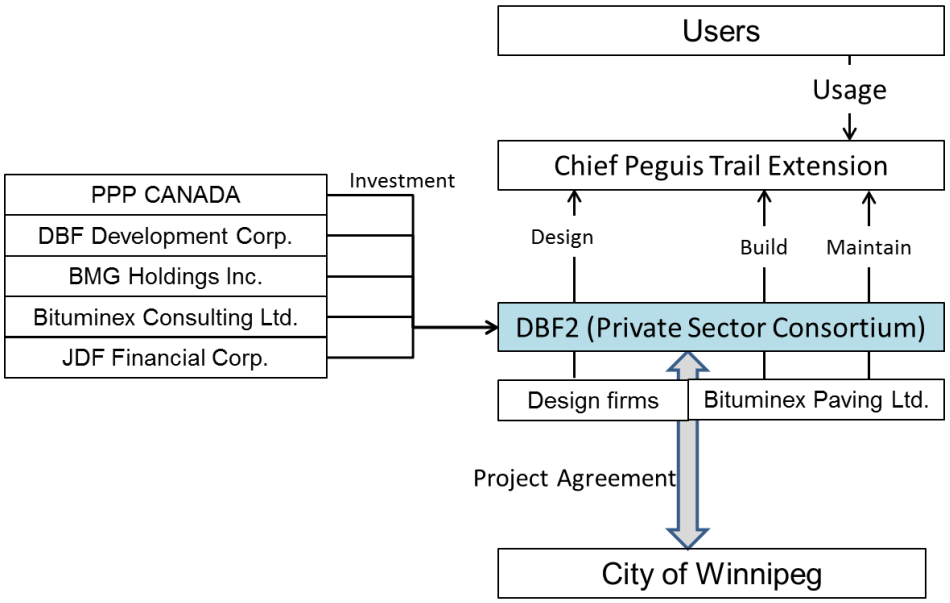
Figure 2-3: Location of the Chief Peguis Trail Roadway

Source : Google Map

4. Content of implementation (development and role divisions)

- Results of analysis (Preliminary Value for Money analysis, Qualitative analysis, Market analysis) the DBFM procurement model was selected.
- The DBFM model requires the private sector partner to obtain private debt and equity financing. This is because the private partner receives only partial payment for construction from the City during the construction period. The majority of payment for construction is held back until following the completion of construction. Therefore the private partner must obtain short term and long -term financing to fund construction.

Figure 2-4: PPP Consortium Structure



Source: 2011 Value for Money Report, PPP CANADA

5. Government support

- The Chief Peguis Trail Expansion Project is one of the first projects in the economy to receive funding approval from PPP CANADA. The City has obtained funding from PPP CANADA Inc for 25% of eligible costs up to a maximum of CA$25 Million.
- This funding has had a significant impact on the project as it has enabled the City to respond to feedback from the public consultation process and add a grade separation at Rothesay Street.

6. Outcome (usage, achievement of the purposes and business situation)

- The City owns the roadway and structures at all times. The City provides DBF2 (private sector consortium) with non -exclusive access to and use of relevant lands for the purposes of executing the project, via license granted in the Project Agreement.
- The City has specified, in detail, the condition that the roadway and structures must be in upon the expiry og the 30 -year maintenance term in the DBFM Agreement. These specifications are known as a “hand -back requirements”. If the roadway falls short of the hand -back requirements, DBF2 must either carry out a work plan designed to remedy the shortfall, or the City wil be entitled to the amount of funds required to carry out the work plan itself and fuifill the hand -back requirements.
- The final VFM results demonstrate that PPP approach provides the City with estimated value saving of approximately CA$31 million, in comparison to the traditional delivery approach. This represents 17.6% savings.

7. Management of transport -inherent risks

- None.
  - In Canada, PPP of application criteria are clearly defined, and PPP CANADA is going to consider only the project by which the risk such as the continuity of the business and consensus building with the surrounding resident, etc. could be cleared.
  - Therefore PPP CANADA says 3 specific risks (Demand risk, Investment risk, Land acquisition risk) is avoided about the PPP project in which PPP CANADA participates.

1. Basic information

1 -1. Economy	● Canada
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● The Canada Line
1 -4. Major implementer	● CLCO
1 -5. Site	● City of Vancouver
1 -6. Period	● Construction: 2005 - 2008 ● In Service: Nov. 2009
1 -7. Total cost	● CA$2 billion
1 -8. Form	● BOT

2. Summary

● The Canada Line project is the Canada's largest transit project with PPP.
● By PPP Scheme the partnership members expects to achieve CA$92 million (NPV) in savings, compared to a project solely delivered by the public sector.

3. Background and purposes

● Canada Line is a CAD 2 billion, 19.5 km-long rapid transit line connecting downtown Vancouver, central Broadway, Richmond and the Vancouver International Airport.
● City of Vancouver has a plan that 50% of Trips will be by Walking, Cycling, Transit.
● The System Characteristics of Canada Line are as follows;
  - ➢ Driverless Automated Light Rail System
  - ➢ Including 9km of tunnels
  - ➢ Includes 16 stations
  - ➢ Encompasses 3 water crossings, 2 bridges
  - ➢ Estimated 100,000 riders daily by 2010

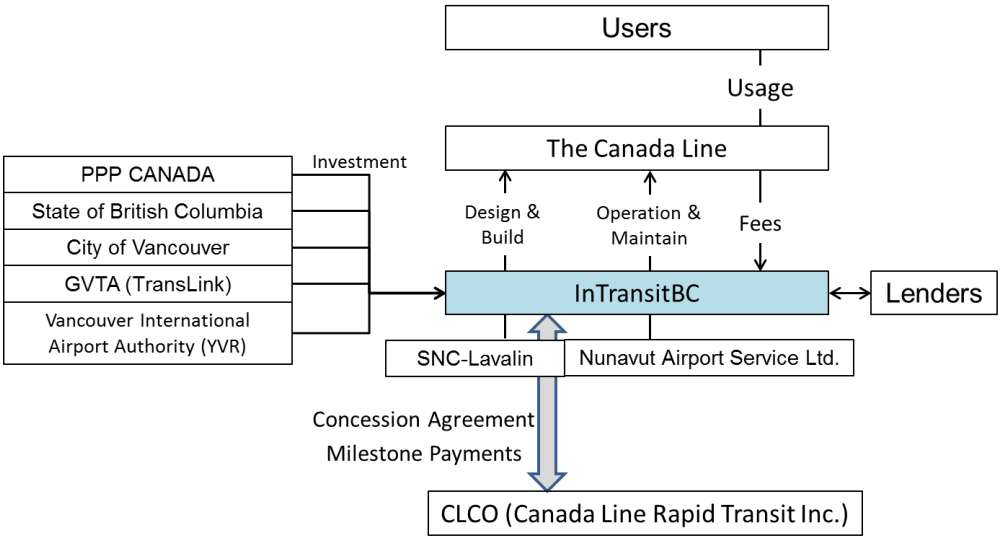
Figure 2-5: Overview of Canada Lone

Source : **2014 PPP Experience on the Canada Line, Trans Link**

4. Content of implementation (development and role divisions)

● Canada Line is being delivered through a 35 -year Design/Build/Finance/Operate/Maintain PPP.
● InTransitBC designed, constructed, and partially financed the system, owns the train vehicles, and will operate and maintain the Line under an operating license from the GVTA through to the end of the agreement.
● GVTA owns the line, collects all fare revenues and will continue to set system -wide transportation policies and fare levels.
● During the construction period, InTransitBC was paid after achieving identified milestones. During the operating period, payments wiil be made to InTransitBC for the achievement of performance targets that measure, for example, train frequency, safety, cleanliness and ridership.
● InTransitBC is the SPV created for the sole purpose of construction and operation of Canada Line. InTransitBC coordinates the flow of funds between the lenders and private contractors supporting project construction and operation.

Figure 2-6: PPP Agreement Framework



Source: 2014 PPP Experience on the Canada Line, Trans Link

5. Government support

- The Canada Line PPP was initiated and developed by the Provincial government of British Columbia through extensive project planning and financial modeling in the form of a PSC and VFM analysis.
- Government of Canada, Ministry of Transportation and Infrastructure, Province of British Columbia, GVTA, City of Vancouver, and YVR invest in CLCO (mentioned in 4.).

6. Outcome (usage, achievement of the purposes and business situation)

- Procurement process was fair and competitive delivering a good outcome.
- Expected Net Cost CA$92m NPV less than Public Sector Comparator.
- Expected to deliver higher transportation benefits (differential ridership estimates).
- This project suggests as follows;
  - Agree on funding framework before legal involvement
  - No amount of consultation is too much -engage stakeholders regularly
  - Develop an outcome driven governance structure
  - Distance project decisions from politics
  - Create a transition plan to operations early in the process -bring the accountable stakeholders in early
  - Be able to react to early completion
  - Ensure that partners have clear and common understanding of each other's expectations

7. Management of transport -inherent risks

- None.
  - In Canada, PPP of application criteria are clearly defined, and PPP CANADA is going to consider only the project by which the risk such as the continuity of the business and consensus building with the surrounding resident, etc. could be cleared.
  - Therefore PPP CANADA says 3 specific risks (Demand risk, Investment risk, Land acquisition risk is avoided about the PPP project in which PPP CANADA participates.

1. Basic information

1 -1. Economy	● Canada
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● Iqaluit Airport Improvement
1 -4. Major implementer	● The Government of Nunavut
1 -5. Site	● Iqaluit International Airport in Nunavut
1 -6. Period	● Construction: 2014 - 2017 ● Concession: 2018 - 2047
1 -7. Total cost	● CA$418.9 million
1 -8. Form	● BOT

2. Summary

- Iqaluit International Airport is a very important infrastructure in Nunavut without roads to connect its communities.
- Using the PPP procurement approach, the final Project Agreement is estimated to achieve value for taxpayers' dollars of CA$99.8 million when compared to traditional procurement.

3. Background and purposes

- Nunavut is a unique geographical land mass without roads to connect its communities. The territory is made up of a series of communities on islands and the mainland, with airports as the only transportation link. This makes airport infrastructure critical to life in Nunavut.
- And the airport is a key economic portal for the territory and several major industrial projects (including mining) are developing in the area and the current airport infrastructure will not able to handle the increased demand in air traffic without expanding both the airport buildings runaway.
- A PPP procurement model was selected as it was expected to generate a lower overall net present cost to taxpayers when compared with a traditional delivery method.

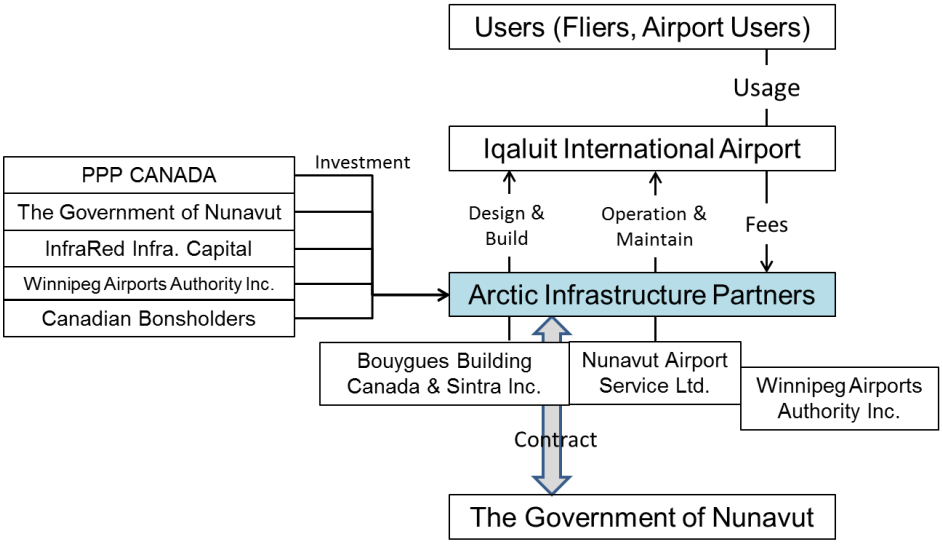
Figure 2-7: Location of Iqaluit International Airport

Source : Google Map

4. Content of implementation (development and role divisions)

- The Government of Nunavut also leveraged lessons learned from existing provincial PPP projects including by engaging Partnership BC to lead the procurement of the project. Partnership BC brought significant PPP procurement experience and a well -established PPP framework, which they adapted to the project.
- Stakeholders
  - Procuring Authority: The Government of Nunavut
  - Advisors: Partnership BC, Pricewaterhouse Coopers, Stantec Consulting
  - Funders: The Government of Nunavut and PPP CANADA
  - Government of Canada: Canada Air Transport Security Authority, Canadian Border Services Agency, and NAV Canada
  - Private Partners: Arctic Infrastructure Partners (Bouygues Building Canada, InfraRed Capital Partners Limited, Sintra and Winnipeg Airports Authority)

Figure 2-8: PPP Scheme



Source: 2014 Territorial Case Study, PPP CANADA

5. Government support

- The Government of Nunavut's PPP experience is limited with both capacity and resource challenges. Therefore, PPP CANADA was actively involved in reviewing key procurement documents (RFI, RFP) and advising the project sponsor in the structuring and delivery of the project.

6. Outcome (usage, achievement of the purposes and business situation)

- The estimated net present cost of the project delivered using a traditional (DBB) approach is CA$518.7 million. The estimated net present cost of the project delivered using the PPP procurement approach and Arctic Infrastructure Partners' (successful private sector partner) proposal is CA$418.9 million. In financial terms, the final Project Agreement is estimated to achieve value for taxpayers' dollars of CA$99.8 million when compared to traditional procurement.
- Throughout the operating period, the private partners' performance will be constantly monitored based on the availability of the infrastructure and achievement of key performance indicators. The public authority (Government of Nunavut) will be entitled to make deductions from its monthly payments if Arctic Infrastructure Partners does not meet the standards specified in the Project Agreement.

7. Management of transport -inherent risks

- None.
  - In Canada, PPP of application criteria are clearly defined, and PPP CANADA is going to consider only the project by which the risk such as the continuity of the business and consensus building with the surrounding resident, etc. could be cleared.
  - Therefore PPP CANADA says 3 specific risks (Demand risk, Investment risk, Land acquisition risk is avoided about the PPP project in which PPP CANADA participates.

2 -3. Chile

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land Transportation (road)	● Interconexión Vial Santiago -Valparaíso -Viña del Mar on Route 68	-
2	Land Transportation (road)	● East - West International System	Concession
3	Air transportation	● Arturo Merino Benítez de Santiago International Airport Concession (Second Bid)	Concession

(2) Cases

1. Basic information	
1 -1. Economy	● Chile
1 -2. Transportation mode	● Land Transportation (road)
1 -3. Project name	● Interconexión Vial Santiago -Valparaíso -Viña del Mar on Route 68
1 -4. Major implementer	● MOP
1 -5. Site	● Santiago de Chile
1 -6. Period	● Construction: 1999 -2002 ● Operation and maintenance: 2002 - 2024
1 -7. Total cost	● US$ 376,739,910
1 -8. Form	-

2. Summary

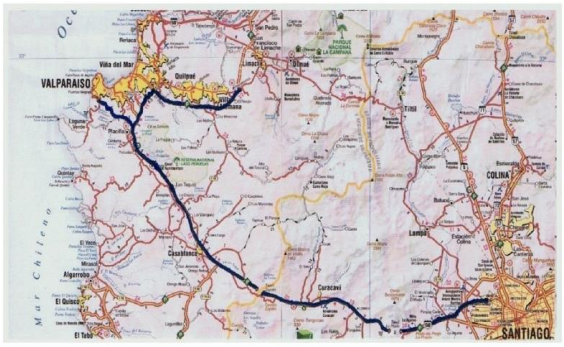
● This Project is to rehabilitate, construct, operate and maintain a roadway of 141.36 km in length that contains 109.60 Km on Route 68, 21.06 Km to Troncal Sur and 10.70 km on Vía Las Palmas.

3. Background and purposes

● Route 68 is the main connection between the Metropolitan area and the Valparaiso area, promoting fluid and safe transport for passengers. Its layout allows easy access to the port of Valparaiso, Viña del Mar, Quilpué and other inner cities. Troncal Sur and Las Palmas are characterized as an mining industry but also touristic areas, which present a traffic flow of more than 3 million vehicles during the summer season.

● The road of layout was previously rectified and restricted sectors with medium and auxiliary tracks that were causing slow traffic.

Figure 2-9: The location of project



Source: MOP

● Among the principal works on route 68 are as follows:
  - ➢ Tunnel Lo Prado 2 and Zapata 2 are constructed as a 59.9 km of service road with 10 overpasses, 5 bridge structures, 8 footbridges and 19 bus stops and 70 km of perimeter closings.
  - ➢ The 46 km of existing roadway was rehabilitated and widened to second access roads to tunnels.

● As for Troncal Sur, the principal works are construction of a dual carriageway motorway of 20.6 km with full access control. Twin tunnels of a road of 580 meters and two roads of 470 meters in length were made with a dual carriageway viaduct of 460 m, 8 over/under pass intersections, 3km of service roads, and 14.5 Km perimeter closings.

● The principal Works that includes route 60 -CH are building a road, with a length between 5.0 and 7.3 km in the direction Con Con - Viña del Mar,

● A road of 5.0km and 7.3 km between Con Con and Viña del Mar on route 60 -CH are built to improve the linkage of Rodelillo and Agua Santa between Las Palmas and Santiago.

4. Content of implementation (development and role divisions)

- In May 1998, MOP awarded the concession for the construction and operation of “Interconexión Vial Santiago - Valparaiso -Viña del Mar” project for a period of 3 years for the construction phase, and 22 years for the operation and maintenance phase to Concession Society Rutas del Pacifico S.A.
- The project was assessed for the approval based on a present value of revenue (PVR). Concessionary Rutas del Pacifico S.A offered a value at a discount rate of 10.5%. The PVR exceeded the total income of concession as of the end of the concession. This result meant that the concession’s term would be variable.

5. Government support

- The government invested more than US$ 484 on the project.

6. Outcome (usage, achievement of the purposes and business situation)

- Connectivity was improved in the west area of the greater Santiago, Americo Vespucio Beltway. Traveling time between the two areas was reduced.
- The following elements dramatically improved safety and traveling time: security defenses as median and roadside berm, hard protection, new modern signals, fixed and mobile demarcation of pavements, lighting and landscaping in the uneven intersections, maintenance and conservation of existing roadways, maintenance and repair of existing bridges and maintenance and improvement of drainage systems.

Figure 2-10: Route 68

Source: MOP

- The following new technologies installed also enhanced security: modern technology of CCTV systems for the control and monitoring of Lo Prado and Zapata 1 and 2 tunnels, control rooms which are contactable 24hours and 356 days with sensors for concentration of gases that automatically activate the ventilation systems and automatic fire detection, activate alarms in case of incidents.
- The infrastructure mentioned above brought about constant driving speed taken by drivers at 120 km per hour approximately on 70% of the highway.

7. Management of transport -inherent risks

[Demand risk]

- None; because of the variable term of the concession, the demand risk is reflected on the period of time that will take to the tendered company to recover their investment.

1. Basic information

1 -1. Economy	● Chile
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● East - West International System
1 -4. Major implementer	● Government Eduardo Frei R. ● Government Ricardo Lagos E.
1 -5. Site	● Metropolitan region, Communes: Lo Barnechea, Las Condes, Vitacura, Providencia, Recoleta, Santiago, Independencia, Quinta Normal, Renca, Cerro Navia and Pudahuel
1 -6. Period	● Construction: 2001 - 2007 ● Concession: 2003 - 2033
1 -7. Total cost	● UF 22,928,082
1 -8. Form	● Concession

2. Summary

● The “East -West International System” concessionBOT project, also known as “Costanera Norte” has the length of 42.4 km. Its designed speed is 100 km/h (80 km/h in tunnel) and an estimated 150,000 cars drive this modern route that passes through 11 communities with more than 1.5 million residents.

● One of the big innovations introduced on this freeway is the modern system that collects the toll electronically without slowing down or stopping the vehicle and does not require a toll collection place or tollbooth.

Source: MOP

3. Background and purposes

● The “Costanera Norte” project connects the city of Santiago from its starting point at Valparaíso and the Arturo Merino Benítez airport on Route 68 to La Dehesa on the eastern side.

● It reduces automobile congestion and creates an alternative parallel route for east -west transit to avenues of Libertador Bernardo O´Higgins, Providencia, Apoquindo and Las Condes.

● It interconnects eleven communities of el Gran Santiago to contribute to completing its urban structure and improves the connection between the east, the center and the west of the city and between the north and south banks of the Mapocho River by the construction of new bridges and the replacement of three existing structures.

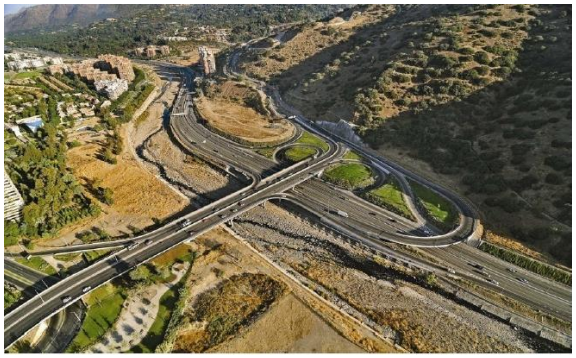
4. Contents of implementation (development and role divisions)

- The Urban Costanera Norte Freeway is arranged by two big main roads:

  a) East -West Axis:

  It is 35.41 km long and transits Santiago from east to west through the north bank of Mapocho River, from La Dehesa Bridge in Lo Barnechea Commune to Ventisqueros Bridge in Renca Commune and to the south bank of the river between its last segment and the intersection of Route 68 Santiago -Valparaíso -Viña del Mar. It is divided into four major sectors by socioeconomic and different urban characteristics:

  - East Sector: (10.85 km) and runs between La Dehesa bridge in Lo Barnechea Commune and Lo Saldes bridge in Vitacura Commune. Its major works are six intersections, two bridges over Mapocho River, construction of new flood defenses, other improvements and swamp drainage canals.
  - Center Sector: (6.75 km) from Lo Saldes Junction in Providencia Commune to Vivaceta Junction in Independencia Commune. Its major works are construction of a 27 km tunnel along the Mapocho River, a 4 km tunnel under the river, a Junction, eight bridges over Mapocho River, seven entrances and 5 exits of the tunnel, channeling of the Mapocho River by construction of a cutwater and lining its bed with rocks (“pindongos”) covered by fine concrete. This part involved the major technical challenge and complexity.
  - West Sector: (12.70 km) between Vivaceta Junction in Independencia Commune and Américo Vespucio Nor -Poniente in Pudahuel Commune. Its major works are six intersections, two bridges over the Mapocho River, an underpass and six overpasses, three pedestrian walkways and new flood defenses.
  - Route 68 Extension: (4.05 km) This extension is developed between Vespucio Poniente Junction in the Pudahuel Commune and Route 68. Its major works are the junction with access to Arturo Merino Benítez Airport and with Route 68.



Source: MOP

- **b) Axis Kennedy**
  - (7.4 km) It is developed from the Av. Tabancura (Estoril Junction) in Las Condes Commune to the Lo Saldes Bridge (Nudo Lo Saldes), in the Vitacura Commune. The most important works are the construction on ramps at Estoril bottom, improvement and construction of 3 green areas and modern illumination system on its route.

5. Government support

- It is governed under the Concession Law in which the contractor finances the construction of the works. The concessionaire operates the toll collection system during the concession period (30 years) with regulated tariffs according to the terms of the bidding contract.
- At the end of the contract, the infrastructure will be given to the state.

6. Outcome (usage, achievement of the purposes and business situation)

- Traffic congestion is reduced along with significant reductions in exhaust emissions (such as carbon monoxide, volatile organic compounds and particulate material).
- The project reduces travel time.
- The project provides green areas and public spaces (according to protocols of agreement with affected local councils).
- Noise pollution mitigation was implemented.

7. Management of transport -inherent risks

[Demand risk]

- The demand risk is covered by a mechanism of Minimum Guaranteed Entry that guarantees the income to cover the debt service and the operation and maintenance expenses if usage is less than projected.

1. Basic information

1 -1. Economy	● Chile
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● Arturo Merino Benítez de Santiago International Airport Concession (Second Bid)
1 -4. Major implementer	● MOP
1 -5. Site	● City of Santiago
1 -6. Period	● Construction 2016 -2019 ● Operation 2015 -2035
1 -7. Total cost	● US$ 700.000.000
1 -8. Form	● Concession

2. Summary

- The Arturo Merino Benítez International Airport of Santiago is one of the most important airports in Chile and has the greatest volume of passengers and cargos. Its ICAO code is SCEL. It is located 17 km northeast of Santiago in the Metropolitan Region. The passenger terminal has been operating since 1998 by the company “SCL Terminal Aéreo Santiago S.A. Sociedad Concesionaria”.
- The bidder group Nuevo Pudahuel won the bid process and will be obligated to be in charge of the airport operation from October 2015 and the construction of expansion work requested by MOP from 2016.

3. Background and purposes

- The current concession contract expires on September 30, 2015, because the Directorate General of Civil Aeronautic (DGAC) mandated the MOP to rebid the airport concession contract.
- The Bidder Group Nuevo Pudahuel, formed by Paris Airport Management Anonymous Society and Vinci Airports S.A.S. was awarded the concession. It is in charge of construction and operation of the airport from October 1, 2015 and the project development of the final engineering and the construction of the expansion works required by MOP in the draft reference from 2016.

Source:Google map

- The concession contract is under the public -private association framework, according to the Concession of Public Works Law, which went into effect in 1991.

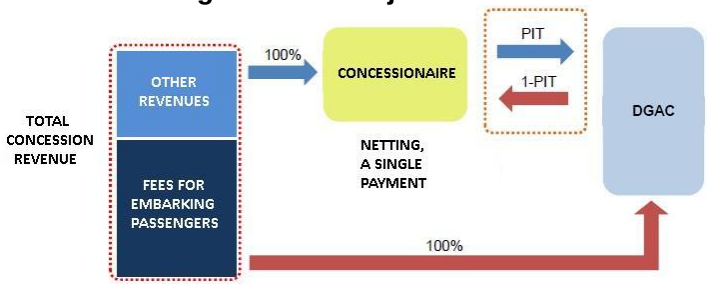
4. Contents of implementation (development and role divisions)

- The new contractor should plan and carry out all necessary works to render aviation and non -aviation services required in the tender set out in the draft reference delivered by the MOP, and the works that are not projected in the draft reference, but are required for purposes of implementing the works under the tender. The following non -exhaustive list of works is presented to be planned and carried out by the contractor:
  - Expansion and remodeling of the existing terminal building and construction of a new terminal building. The existing terminal building (T1) will be allocated to domestic traffic and will be expanded to the west. The new building (T2) will consist of a building or central processing and 4 (four) piers and will be allocated to international traffic. It will be constructed south of the existing terminal building T1.
  - Construction of the buildings and airport support installations will replace the existing ones that should be relocated.

- Expansion of parking platforms for passenger and cargo aircraft.
- Extension of Taxiways Zulu, Papa, Alpha and Mike, with connections to the track and / or parking apron.
- Construction and expansion of parking lots for automobiles.
- Construction of the streets of aeronautical service roads, including construction of an underpass service road connecting the east and west platforms.
- Construction of the cargo area of the airport.
- Expansion of the existing power station and expansion of the electric substations and the control system of the visual assistance of the DGAC (illumination towers of platform).
- Modernization of the impulsion plant and pressurization of the network of the distribution of potable water and of fire and potable water supply for all new installations and expansion of the existing wastewater treatment plant.
- Construction of perimeter fence and of security and landscape works in the concession area. Works associated to the installation of electro -mechanic equipment (elevators, service lifts, escalators, moving sidewalks, boarding bridges, luggage handling belts, automatic doors, electronic scales, X -ray machines, metal detector portals, among others), which should be provided by the concessioner.
- Demolition, relocation or reinstallation of the existing works to make room for new works of the project.

● The business model is shown right, where PIT is the percentage of shares of total income with the state (77.56%):

Figure 2-11: Project scheme



Source: MOP

5. Government support

- "The Nuevo Pudahuel S.A. concessionaire finances the construction of the expansion work and operation and maintenance of the same and the preexisting ones during the whole concession period (20 years). Estimated amount: US$ 700,000,000
- The repayment of this investment during the concession period will be managed by the commercial income from the operation and management of the airport, in the percentage of requested partnership by the contractor of 22.44%; the state (DGAC) should pay the remaining 77.56%.
- The MOP will arrange funding for additional minor works not included in the project that will benefit the users and the community, up to a maximum estimated amount of US$ 2,750,000.

6. Outcome (usage, achievement of the purposes and business situation)

- The new concession will permit the following:
  - Align the incentives between the states and the contractor to implement better public infrastructure.
  - Provide certainty to the business model through known and diversified income sources.
  - Assure the quality of service providing to the users through the service level requirement.

7. Management of transport -inherent risks

[Operational risk].

- It anticipates some operation risk due to the complexity of passing from the contractor who has operated the airport for 16 years to the new contractor; however, this risk will be relieved through the process of induction and coordination that is carrying out with the new contractor because the new contractor will hire a large part of personnel of the current contractor (more than 90% of the personnel) and will add additional personnel as needed.

2 -4. Indonesia

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Nusa Dua - Ngurah Rai - Benoa Toll Road	BOT
2	Land transportation (road)	● Tanjung Priok Port Access Road	Operation
3	Land transportation (road)	● Toll road between Pasirkoja and Soreang	-
4	Land transportation (rail)	● Soekarno -Hatta International Airport Rail Link	BOT
5	Land transportation (rail)	● Tugu Station Area Development, Malioboro Pedestrianization	BOT
6	Land transportation (rail)	● Bandung Light Rail Transit System	-
7	Land transportation (rail)	● Freight railway between Tanjung Enim and Tanjung Api Api	-
8	Maritime transportation	● Maloy International Port	BOT
9	Air transportation	● Bali International Airport	-

(2) Cases

1. Basic information

1 -1. Economy	● Indonesia
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Nusa Dua - Ngurah Rai - Benoa Toll Road
1 -4. Major implementer	● MPW, PT Jasamarga Bali Tol
1 -5. Site	● Nusa Dua - Ngurah Rai - Benoa
1 -6. Period	● Since 2013
1 -7. Total cost	● US$196.1 million
1 -8. Form	● BOT

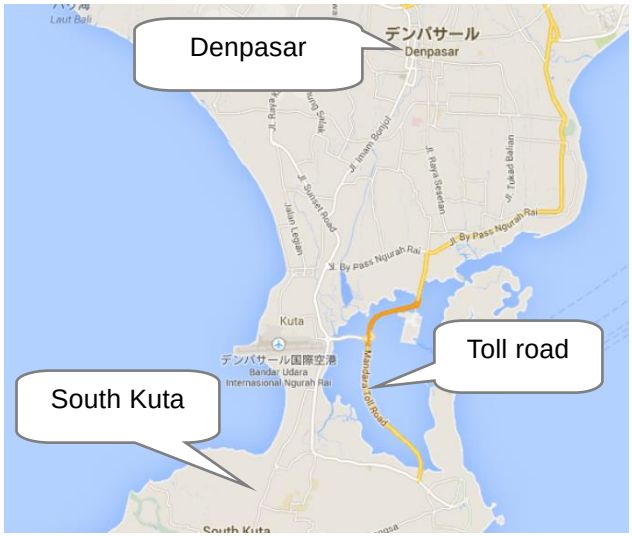
2. Summary

- There is only one major road connecting South Kuta with Denpasar. Traffic congestion is getting worse. MPW developed the Nusa Dua - Ngurah Rai - Benoa Toll Road that connects South Kuta with Denpasar as a construction and operation PPP project. In the PPP Book, this is already procured project.
- PT Jasamarga Bali Tol started the operation in 2013.

3. Background and purposes

- With the development of the Bali economy, people have begun moving around more actively, causing traffic congestion, especially in the economically active South Kuta region as many people are traveling there (**Figure 2-12**). However, the Jalan Ngurah Rai Road is the only major road connecting South Kuta with Denpasar and this is creating a bottleneck.
- MPW has a PPP project for the Nusa Dua - Ngurah Rai - Benoa Toll Road, which connects South Kuta with Denpasar. It is classified as construction and operation. In the PPP Book, this PPP project is described “procurement completed.” The operation of the Nusa Dua - Ngurah Rai - Benoa Toll Road PPP project has been done by the consortium named PT Jasamarga Bali Tol since 2013. It is expected that movement between South Kuta and Denpasar will be smoother and traffic congestion will be mitigated because of the Nusa Dua - Ngurah Rai - Benoa Toll Road PPP project.

Figure 2-12: Location of toll road



Source: Google Maps

4. Content of implementation (development and role divisions)

- According to the 2011 PPP Book, the Nusa Dua - Ngurah Rai - Benoa Toll Road PPP project is to be constructed and operated by PT Jasamarga Bali Tol for 35 years. It is 9.7km long with 3 lanes on each side (**Figure 2-13**). The estimated traffic is 12,119 vehicles per day. Vehicles can travel at up to 100kph.

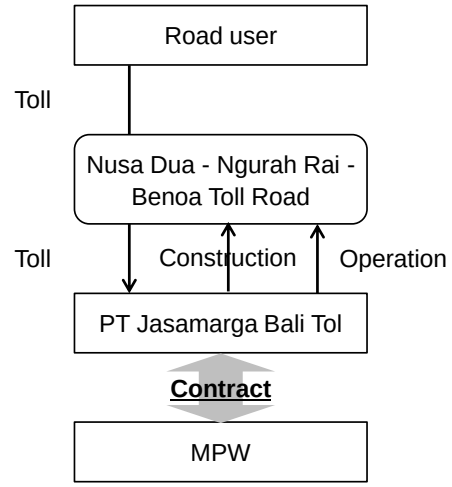
Figure 2-13: Nusa Dua - Ngurah Rai - Benoa Toll Road

Total length	● 9.7km
Number of lanes	● 3 lanes on each side
Lane width	● 3.6m
Speed	● 100kph

Source: 2011 PPP Book, BAPPENAS

● The cost of the Nusa Dua - Ngurah Rai - Benoa Toll Road PPP project is US$196.1 million according to the 2011 PPP Book. PT Jasamarga Bali Tol is procuring the capital on its own and will recoup the construction and operation cost from the toll fee revenue.

Figure 2-19: PPP project scheme for the Nusa Dua - Ngurah Rai - Benoa Toll Road



Source: 2011 PPP Book, BAPPENAS

5. Government support

● The traffic volume of the Nusa Dua - Ngurah Rai - Beona Toll Road is expected to be large with the development of Bali economy. Any government support is not required, since PT Jasamarga Bali Tol can expect certain income based on the secure traffic volume.

6. Outcome (usage, achievement of the purposes and business situation)

● The economic internal rate of return (EIRR) for Nusa Dua - Ngurah Rai - Benoa Toll Road PPP project described in the 2011 PPP Book is estimated as 18.47% when considering the monetary value of the societal effects such as mitigating traffic congestion. This is above the average social discount rate (approx. 12%) for public projects in general among the ASEAN Member States.

7. Management of transport -inherent risks

[Demand risk]

● Nusa Dua - Ngurah Rai - Benoa Toll Road is meant to supplement the Jalan Ngurah Rai Road, which has serious traffic congestion. It is assumed to have predictable level of demand; therefore, the demand risk for PT Jasamarga Bali Tol would appear to be minimal.

1. Basic information

1 -1. Economy	● Indonesia
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Tanjung Priok Port Access Road
1 -4. Major implementer	● MPW
1 -5. Site	● Tanjung Priok Port
1 -6. Period	● Since 2014
1 -7. Total cost	● US$620 million
1 -8. Form	● Operation

2. Summary

- Tanjung Priok Port is an important international trading port close to Jakarta. MPW builds and operates access road connecting Jakarta and Tanjung Priok.
- The so -called "scheme of separating infrastructure and operation" with international yen loan for the Tanjung Priok Port Access Road PPP project is being studied. Government support such as availability payments and land acquisition by government are also under discussion.

3. Background and purposes

- In Indonesia, the volume of cargo to be handled at Tanjung Priok Port close to Jakarta is increasing as the economy grows (**Figure 2-14**). However, in Jakarta, the transport infrastructure improvement such as road construction is not keeping up with the increase in traffic, resulting in congestion. Transport of goods between Jakarta and Tanjung Priok Port is subject to delays, increasing the transport cost. Also during local downpours, urban floods are becoming more and more serious.
- MPW is planning a construction and operation PPP project utilizing international yen loans to fund a toll access road as a part of the Jakarta Outer Ring Road connecting central Jakarta and Tanjung Priok Port.
- It is expected that the Tanjung Priok Port Access Road PPP project may make transport between Jakarta and Tanjung Priok Port smoother, and this will enable increased logistics activity and stimulate economic growth. Additionally, safety will be improved by providing timely traffic information to the users through ITS.

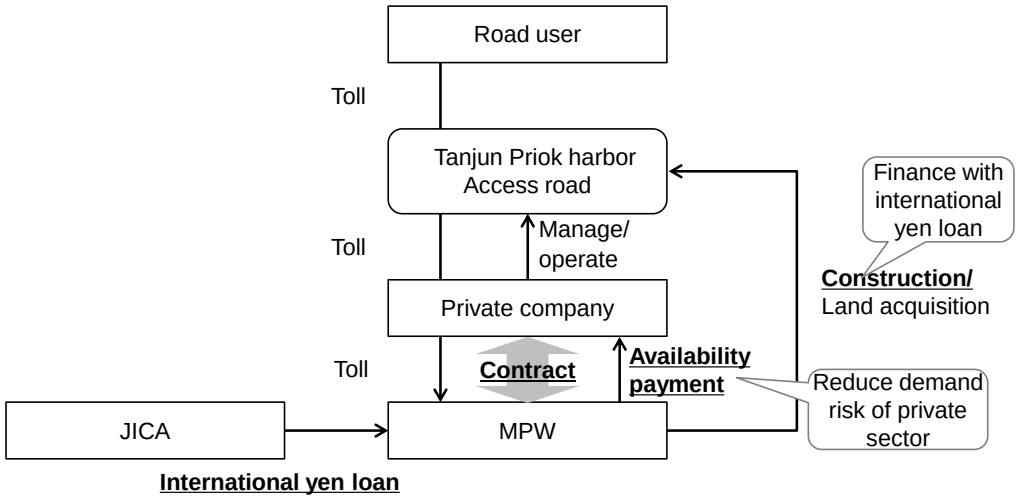
Figure 2-14: Location of Tanjung Priok Port Access Road

Source: 2013 PPP Book, BAPPENAS

4. Content of implementation (development and role divisions)

- JETRO and JICA conducted a feasibility study starting in 2003 about the Tanjung Priok Port Access Road PPP project. Construction and operation of a toll road in 5 sections with a total length of 11.4km is under discussion. Using ITS for the Tanjung Priok Port Access Road is also being discussed (**Figure 2-15**).
- The cost of road construction and ITS to be used for the Tanjung Priok Port Access Road PPP project is estimated at US$620 million. This is too great of a cost for either the private sector or MPW to bear alone. Therefore MPW plans to use the international yen loan with the private company operating and maintaining the toll road under the scheme of “separating infrastructure and operation”.

Figure 2-15: Tanjung Priok Port Access Road PPP project scheme



Source: 2013 PPP Book, BAPPENAS

5. Government support

- MPW is also trying to reduce the financial risk to the private sector by providing the availability payment that will avoid demand risk. Also, other forms of government support are under discussion, such the government taking responsibility for land acquisition.

6. Outcome (usage, achievement of the purposes and business situation)

- The Tanjung Priok Port Access Road PPP project will reduce the transport time between Jakarta and Tanjung Priok Port. Increased logistics activity will promote economic growth. Reduced time will reduce fuel cost. The job creation due to new construction of roads and installing of ITS are also expected. In addition, safety will improve due to rapid updating of traffic information to road users through ITS.
- The estimated EIRR, taking into account the monetary value of the societal effect, such as increased logistics activity, is 38.1%. This is much greater than the average social discount of about 12% for public works in the ASEAN Member States.

7. Management of transport -inherent risks

[Demand risk]

- Using the availability payment system is being studied for the Tanjung Priok Port Access Road PPP project, whereby the private company can avoid the demand risk, as MPW will pay the cost of appropriately maintaining the road.

[Investment risk]

- MPW is studying using the scheme of “separating infrastructure and operation” for the Tanjung Priok Port Access Road PPP project in which MPW builds the road and installs ITS using the international yen loan, and the private company operates it, thus avoiding the large amount of construction cost. MPW can also utilize the international yen loan to reduce the investment risk.

[Land acquisition risk]

- In the Tanjung Priok Port Access Road PPP project, the private company may be able to avoid the land acquisition risk, as the Indonesian government is considering having government deal with land acquisition.

1. Basic information

1 -1. Economy	● Indonesia
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Toll road between Pasirkoja and Soreang
1 -4. Major implementer	-
1 -5. Site	● Between Pasirkoja and Soreang
1 -6. Period	● Environmental impact assessment was performed in 2013 ● Land acquisition is planned to take place in 2015
1 -7. Total cost	● US$160 million
1 -8. Form	-

2. Summary

● Bandung and Soreang are major cities and economic centers of Sumatra Island. Traffic congestion is becoming serious in these cities as vehicle ownership has increased. The Indonesian government is planning a build -operate PPP project for a toll road for the segment between Pasirkoja and Soreang. It will be published in the 2015 PPP Book as "preparation completed".

● The environmental impact assessment was completed for the build -operate PPP project for the toll road segment between Pasirkoja and Soreang. The government is planning to do the land acquisition in 2015. The economic internal rate of return is estimated to be as high as 21.12%.

3. Background and purposes

● In the Bandung area of Sumatra Island, the purchasing power of the people improved along with economic growth. Motor vehicle use is widespread. In Bandung City and Soreang City, the major cities and economic centers of the Bandung area, vehicle ownership increased and traffic congestion has become becoming increasingly serious. The Indonesian government is planning the build -operate PPP project for the toll road segment between Pasirkoja and Soreang in Bandung. This will be published as “preparation completed” in the 2015 PPP book, which summarizes the PPP projects in Indonesia (**Figure 2-16**).

Figure 2-16: Location of toll road segment between Pasirkoja and Soreang

Source：Google maps

4. Contents of implementation (development and role divisions)

● Total length of the toll road segment between Pasirkoja and Soreang is 15 km. One portion will have 2 lanes in each direction and the rest will have 3 lanes in each direction. The speed limit for the toll road segment between Pasirkoja and Soreang will be 80km per hour.

- Total cost of the build -operate PPP project for the toll road segment between Pasirkoja and Soreang is US$160 million US. In 2013, the environmental impact assessment was conducted. The government plans to spend US$63.27 million US in 2015 to acquire the necessary 1,270,000 m^2 of land.

5. Government support

- The land to be used for the build -operate PPP project for the toll road segment between Pasirkoja and Soreang will be acquired by the government.

6. Outcome (usage, achievement of the purposes and business situation)

- The estimated traffic volume for the build -operate PPP project for the toll road segment between Pasirkoja and Soreang is 17,528 cars per hour based on the actual data from 2011.
- Economic internal rate of return for the build -operate PPP project for the toll road segment between Pasirkoja and Soreang is estimated at 21.2%. This rate is higher than the average social discount rate of approximately 12% for public work projects among ASEAN member economies. Based on this factor, the profitability of this project considering the social benefit of reducing the traffic congestion can be seen as high.

7. Management of transport -inherent risks

[Land acquisition risk]

- The land to be used for the toll road segment will be acquired by the government so that the private company partner on this project can avoid land acquisition risk.

1. Basic information

1 -1. Economy	● Indonesia
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Soekarno -Hatta International Airport Rail Link
1 -4. Major implementer	● MOT
1 -5. Site	● Soekarno -Hatta International Airport - Jakarta - HalimAirport
1 -6. Period	● Procurement in 2015
1 -7. Total cost	● US$2.57 billion
1 -8. Form	● BOT

2. Summary

- Soekarno Hatta International Airport is one of the world's 10 busiest airports. Traffic volume is increasing between it and central Jakarta and traffic congestion is serious, resulting in worsening access. MOT makes the construction and operation PPP project. It is listed as a prospective PPP project in the PPP Book.
- Soekarno -Hatta International Airport Rail Link PPP project is for the private sector to construct and operate. Government does the land acquisition.
- Plan is to select and conclude a contract with a private company in 2015.

3. Background and purposes

- In Indonesia, the number of passengers and the volume of the cargo handled at Soekarno Hatta International Airport are on the increase as the economy grows. In 2012, over 50 million passengers used this airport, making it among the ten busiest airports in the world, according to Airport Council International. Traffic volume between Soekarno Hatta International Airport and central Jakarta has increased and congestion is serious. The average driving speed in central Jakarta is 20kph, down by roughly 25% from the eight -year average of 26kph. Access to the airport is getting worse as travel time between the airport and central Jakarta increased.

Figure 2-17: Location of Soekarno Hatta International Airport

Source: Material provided by JICA

- MOT is aiming to develop the access railway between Soekarno Hatta International Airport and central Jakarta as a construction and operation PPP project. Economic activity is expected to pick up as logistics become smoother with improved airport access (**Figure 2-17**). This is listed as a prospective PPP project in the PPP Book.

4. Content of implementation (development and role divisions)

- The Soekarno - Hatta International Airport Rail Link will be an electric railway with total length of 33.86km connecting Soekarno Hatta International Airport, central Jakarta and Halim Airport. Maximum speed will be 120kph. MOT is aiming to build Soekarno -Hatta International Airport Rail Link with high convenience and low fare (**Figure 2-18**).

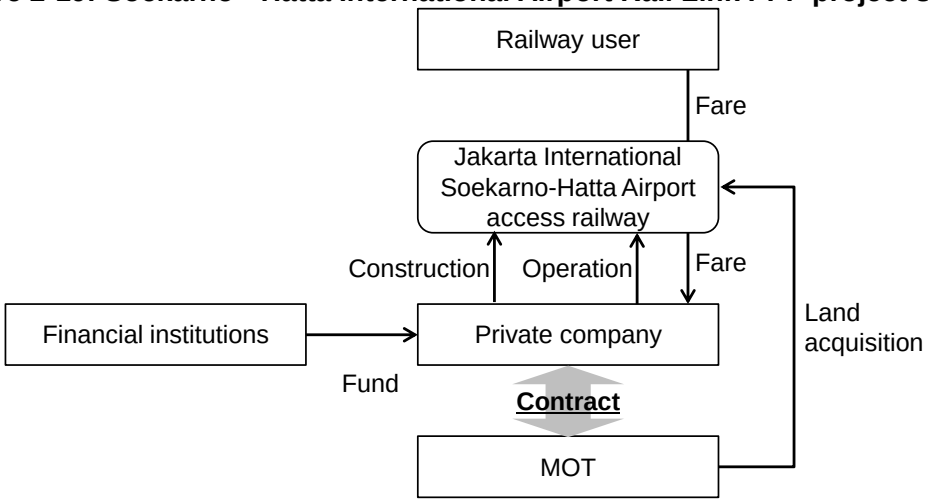
Figure 2-18: Features of Soekarno - Hatta International Airport Rail Link

- Build a station in central Jakarta with links to other transport modes
- Build an environment for easy transfer at the station in central Jakarta
- Build a station close to airport terminals
- Maintain on -time operation
- Set the fare that is competitive with other transportation means
- Move more quickly than regular commuter trains by running at faster speed and stopping at fewer stations
- Run frequently during peak hours (at intervals of less than 10 minutes)

Source: 2013 PPP Book, BAPPENAS

- The cost for the Soekarno - Hatta International Airport Rail Link construction and operation PPP project is estimated at US$2.57 billion. The private company will raise capital from the financial institutions to perform civil engineering work, build the railways and procure traffic signals, cars and power generation facilities. After construction is completed, the private company will operate it and receive the fare revenue (**Figure 2-19**). Much of the necessary land is government land. The plan is to transfer its ownership from government to the private sector. If there are other parcels of land necessary for the project, the Indonesian government will do the land acquisition, i.e., the government will provide compensation. In this way the private company can reduce the land -acquisition risk.

Figure 2-19: Soekarno - Hatta International Airport Rail Link PPP project scheme



Source: 2013 PPP Book, BAPPENAS

5. Government support

- In the Soekarno Hatta International Airport Link PPP project, the Indonesian government is studying doing land acquisition instead of private company.

6. Outcome (usage, achievement of the purposes and business situation)

- The Soekarno Hatta International Airport Link PPP project will provide another transportation means from/to the city center of Jakarta. Modal shift will be promoted and traffic congestion in Jakarta is expected to be reduced.

7. Management of transport -inherent risks

[Land acquisition risk]

- The Indonesian government is studying doing land acquisition for the Soekarno Hatta International Airport Link PPP project. If this is implemented, the private company can avoid land -acquisition risk.

1. Basic information

1 -1. Economy	● Indonesia
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Tugu Station Area Development, Malioboro Pedestrianization
1 -4. Major implementer	● Yogyakarta
1 -5. Site	● Tugu Station ● Malioboro
1 -6. Period	● Procurement in 2015
1 -7. Total cost	● US$732.78 million - US$828.63 million
1 -8. Form	● BOT

2. Summary

- Many tourists visit Yogyakarta with its rich sightseeing resources resulting in congestion at Tugu Station and Malioboro. Renovation of Tugu Station and improvement of its surrounding area and the sidewalks of Malioboro are a prospective PPP project listed in the PPP Book.
- The private campany will receive the fees from Tugu Station area development and will renovate and operate Tugu Station and construct sidewalks. Yoguyakaruta is discussing the government guarantee and subsidy in addition to doing land acquisition.
- Plan is to select and conclude a contract with a private company in 2015.

3. Background and purposes

- Yogyakarta is the cultural center of Java and has rich sightseeing resources. In 2007, 2.5 million passengers used Adisucipto International Airport. The number of railway passengers was 1.9 million. Many of them visited Tugu Station and Malioboro. The large number of tourists creates traffic congestion.
- Yogyakarta is aiming to implement a construction and operation PPP project for Tugu Station and the Malioboro sidewalks. In the PPP Book, it is listed as a prospective PPP project (**Figure 2-20**). This is expected to stimulate industrial development and to increase the attractiveness of Malioboro as a tourism destination.

Figure 2-20: Yogyakarta

Source: Google Maps

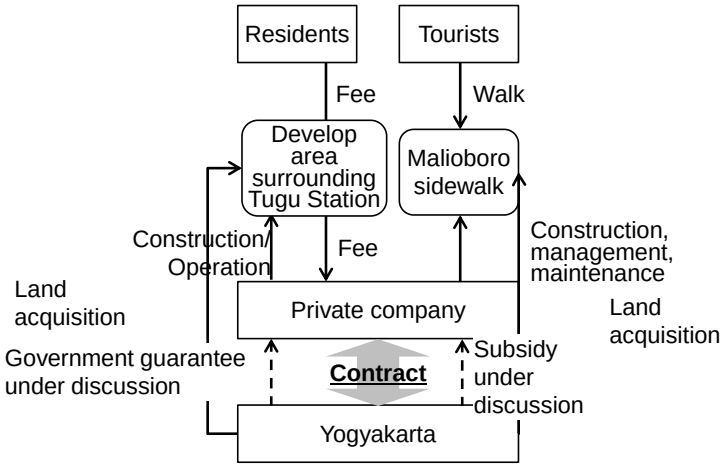
4. Content of implementation (development and role divisions)

- In the Revitalization of Yogyakarta Rail Station and Pedestrianization of Malioboro PPP project, renovation of Tugu Station and development of the surrounding 25,000ha will take place, such as developing commercial buildings, underground parking lots, warehouses, office buildings, hotels, and apartment buildings. In addition, there will be 1.5km of sidewalks and parking lots on and around Malioboro Avenue. There are two different options planned. Option one is on -ground road improvement without an underground structure. Option two is on -ground road improvement plus an underground pedestrian street with shops. Option one will cost US$733 million and option two will cost US$829 million. The option with the underground sidewalks is

13.1% more expensive to construct than the option without it.

- Under the Revitalization of Yogyakarta Rail Station and Pedestrianization of Malioboro PPP project, a private company will develop and construct facilities in the area surrounding Tugu Station and the Malioboro sidewalks (**Figure 2-21**). The revenue from sales and rental fees for the commercial buildings, underground parking facilities, warehouses, office buildings, hotels and apartment buildings will be the revenue to recoup the initial investment cost (Figure 2 -17). The role of Yogyakarta is to acquire the needed land. This way, the private company can avoid the land acquisition risk. Additionally, in order to reduce investment risk for the private company, Yogyakarta is reviewing the possibility of government guarantees by IIGF or other types of subsidies

Figure 2-21: Revitalization of Yogyakarta Rail Station and Pedestrianization of Malioboro PPP project scheme



Source: 2013 PPP Book, BAPPENAS

5. Government support

- The Revitalization of Yogyakarta Rail Station and Pedestrianization of Malioboro PPP project, Yogyakarta is studying government guarantees and providing subsidies by IIGF and doing the land acquisition.

6. Outcome (usage, achievement of the purposes and business situation)

- Increases in the number of tourists and in land values, improved access to parking lots, and reduction of traffic accidents are expected effects, in addition to the expected job creation by the Revitalization of Yogyakarta Rail Station and Pedestrianization of Malioboro PPP project. EIRR is estimated at 14.5% taking into account the increase in tourists and reduction in traffic accidents. This is somewhat above the social discount rate of public works in Indonesia of 12%.

7. Management of transport -inherent risks

[Investment risk]

- Yogyakarta is studying government guarantees and providing subsidies by IIGF for the Revitalization of Yogyakarta Rail Station and Pedestrianization of Malioboro PPP project. In this project, the private company can be assured of cost recovery through the government guarantee and reduction in the cost of developing the area surrounding Tugu Station and construction of the Malioboro sidewalk, by taking advantage of subsidies; therefore it is possible to reduce the investment risk.

[Land acquisition risk]

- In the Revitalization of Yogyakarta Rail Station and Pedestrianization of Malioboro PPP project, Yogyakarta is studying doing the land acquisition. If this is implemented, the private company can avoid land -acquisition risk.

1. Basic information

1 -1. Economy	● Indonesia
1 -2. Transportation mode	● Land Transportation (rail)
1 -3. Project name	● Bandung Light Rail Transit System
1 -4. Major implementer	● Bandung City
1 -5. Site	● Bandung
1 -6. Period	● Viability study performed in 2013 ● Market study performed in 2014 ● In preparation for pre -approval process
1 -7. Total cost	● US$560 million
1 -8. Form	-

2. Summary

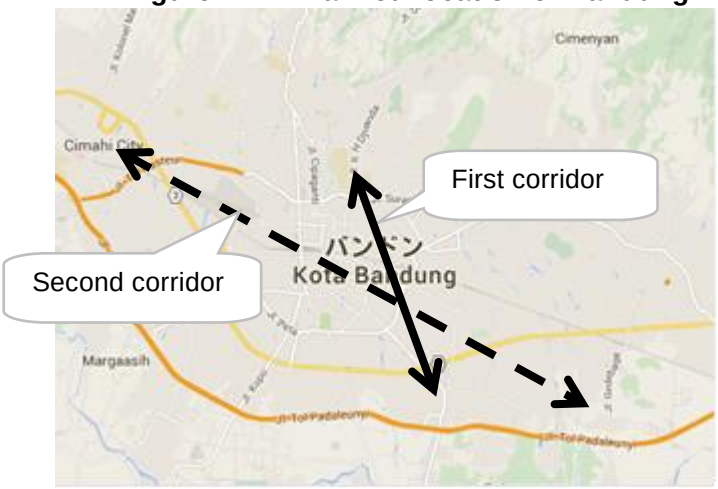
● Bandung is a tourist destination. As the number of tourists has increased, traffic has become more congested. A PPP project is being planned to build and operate two LRT lines. In the PPP book of 2015, this project will be described as “preparation completed.”

● After the completion of the build - operate Bandung LRT PPP project, there will be more options for transportation beyond vehicle transportation, and mitigation of traffic congestion is expected.

3. Background and purposes

● Bandung City, the capital city of the province of West Java, is a well - known tourist destination. Many tourists visit there, especially during holidays. However, the transportation infrastructure buildup is sluggish. As the number of tourists has increased, traffic has become more congested. A PPP project is being planned to build and operate two LRT lines, one for the first corridor and the other for the second corridor as PPP project (**Figure 2-22**). The PPP project to build and operate the Bandung LRT will be published in 2015 PPP Book, which summarizes the PPP projects in Indonesia.

Figure 2-22: Planned location of Bandung LRT



Source：BAPPENAS and Google Maps

4. Contents of implementation (development and role divisions)

● The total length of the first corridor of the Bandung LRT, which runs north to south, is 10.15 km with 6 stations. The total length of the second corridor, which runs east to west, is 20.04km with 21 stations.

- The total project cost for the build -operate Bandung LRT PPP project is US$560 million. In 2013, a feasibility study was performed, and a market sounding was performed in 2014. Currently, the City is in the pre -approval process of preparing to select a private company.

5. Government support

- Bandung city has conducted a feasibility study on the build -operate Bandung LRT PPP project to evaluate its economic viability and identify appropriate risk allocation with a private company.

6. Outcome (usage, achievement of the purposes and business situation)

- Upon completion of construction and startup of operations of the Bandung LRT PPP project, there will be more options for transportation beyond vehicle transportation within Bandung City, and it is expected this will reduce traffic congestion due to the decrease in vehicle usage.

7. Management of transport -inherent risks

[Demand risk]

- Bandung city is famous for tourism and a lot of tourists are visiting. So the build -operate Bandung LRT PPP project can expect certain traffic volume with low demand risk.

1. Basic information

1 -1. Economy	● Indonesia
1 -2. Transportation mode	● Land transport (rail)
1 -3. Project name	● Freight railway between Tanjung Enim and Tanjung Api Api
1 -4. Major implementer	-
1 -5. Site	● Between Tanjung Enim and Tanjung Api Api
1 -6. Period	● Preparing a preliminary review
1 -7. Total cost	● US$3 billion
1 -8. Form	-

2. Summary

- Tanjung Enim in the southern part of Sumatra Island has large known coal reserves. However, its development has been delayed due to an undeveloped transportation infrastructure. The Indonesian government is planning a build -operate PPP project for a freight railway segment between Tanjung Enim and Tanjung Api Api. This project will be described as “preparation completed” in the 2015 PPP Book.
- The build -operate PPP project for the freight railway between Tanjung Enim and Tanjung Api Api is expected to advance the development of the coal reserves in Tanjung Enim.
- Indonesian PPP framework has an unsolicited projects scheme. The project was one of projects proposed by a private company and brought about the project through a governmental careful assessment.

3. Background and purposes

- There is an estimated 22.24 billion tons of coal reserves in the south of Sumatra Island, which is 48% of the total reserves of Indonesia. However it has not been well developed due to the undeveloped transportation infrastructure. To promote the development of coal production in the south of Sumatra Island, the Indonesian government designated the Tanjung Api Api area, with Tanjung Api Port, as a special economic district. The Indonesian government aims to build and operate a freight railway connecting Tanjung Api Api and Tanjung Enim (**Figure 2-23**). The build -operate PPP project for the freight railway between Tanjung Enim and Tanjung Api Api will be described as “preparation completed” in the 2015 PPP Book.

Figure 2-23: Location of freight railway segment between Tanjung Enim and Tanjung Api Api

Source: BAPPENAS and Google maps

4. Contents of implementation (development and role divisions)

- Total length of the freight railway segment between Tanjung Enim and Tanjung Api Api is 375km. The minimum transport volume will be 22.5t. Operations will run 365 days a year.
- The build -operate PPP project for the freight railway between Tanjung Enim and Tanjung Api Api is a proposal initiated by a private company, PT. Mega Guna Gand Semesta, whose business is coal development. Total cost of the project is US$3 billion. Currently, the build -operate PPP project for the freight railway between Tanjung Enim and Tanjung Api Api is at the stage of preparing the preliminary review for selecting a private company.

5. Government support

- The Indonesian government duly opens business chances to the private sector by having the unsolicited project scheme, while trying to meet the people's demands for public transportations more effectively. With this scheme, the private sector is promoted to participate in the public transport market with utilizing its know -how and finance at its best.

6. Outcome (usage, achievement of the purposes and business situation)

- It is expected that development of coal production in Tanjung Enim will go forward with the development of the transportation means from Tanjung Enim, where there are large coal reserves, to the special economic district of Tanjung Api Api, with the Port of Tanjung Api.

7. Management of transport -inherent risks

[Demand risk]

- Tanjung Enim has large coal reserves and its freight transportation demand for Tanjung Api Api with its port is large. So the build -operate PPP project for the freight railway between Tanjung Enim and Tanjung Api Api can expect certain traffic volume with low demand risk.

1. Basic information

1 -1. Economy	● Indonesia
1 -2. Transportation mode	● Maritime transportation
1 -3. Project name	● Maloy International Port
1 -4. Major implementer	● MOT
1 -5. Site	● Maloy International Port
1 -6. Period	● Procurement in 2016
1 -7. Total cost	● US$2.57 billion
1 -8. Form	● BOT

2. Summary

- MOT is planning to build Maloy International Port as a PPP project at East Kalimantan, a strategic point of international maritime trade. It is listed as potential PPP project in the PPP Book.
- The private company will obtain capital from the financial institutions to build Maloy International Port, then operate it and receive the revenue from user fees from shipping companies using the port. MOT is discussing the possibility of providing subsidies.
- Plan is to select and conclude a contract with a private company in 2016.

3. Background and purposes

- East Kalimantan, in addition to being blessed with abundant natural resources, is located in Indonesian Archipelago Sea Line Channel II of Lombok Strait, Makassar Strait, and the Celebes Sea. It has become a strategic point of international maritime trade. According to the investigation by MOT, building Maloy International Port in East Kalimantan will increase the international maritime trade activity and attract development in agriculture, mining, fishing and shipbuilding industries.
- MOT is aiming to build Maloy International Port as an construction and operation type of PPP project. It is expected that this will promote the export of crude palm oil and coal, as well as other industries (**Figure 2-24**). In the BAPPENAS' PPP Book, this is listed as a potential PPP project.

Figure 2-24: Location of Maloy International Port

Source: 2013 PPP Book, BAPPENAS

4. Content of implementation (development and role divisions)

- The Maloy International Port PPP project has a plan to develop the port in six stages (**Figure 2-25**).

Figure 2-25: Necessary steps to build Maloy International Port

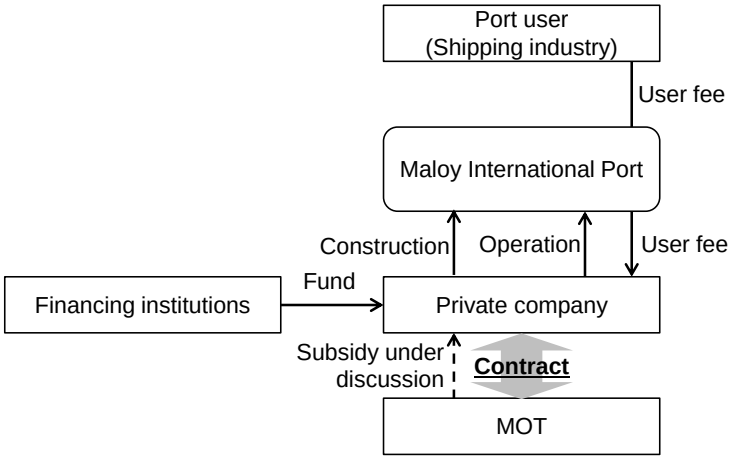
- ○ Land acquisition
- ○ Calculation and preparation of land
- ○ Building the infrastructure such as roads and green spaces
- ○ Building service facilities (office spaces, hospitals, fire station, place of worship)
- ○ Building supporting facilities
- ○ Creating the storage facility for crude palm oil

Source: 2013 PPP Book, BAPPENAS, page 51

- The Maloy International Port PPP project cost is estimated at US$1.78 billion. The private company will need to secure loans from financial institutions to build Maloy International Port. It will receive revenue from usage fees from users of the port such as maritime shipping

companies (**Figure 2-26**). To reduce the investment risk of the private company working on the Maloy International Port PPP project, MOT is discussing the possibility of providing a subsidy. Discussions have not been held as to whether land acquisition would be done by the Indonesian government or the private company.

Figure 2-26: Maloy International Port PPP project scheme



Source: 2013 PPP Book, BAPPENAS

5. Government support

- In the Maloy International Port PPP project, MOT is discussing the possibility of providing the subsidies.

6. Outcome (usage, achievement of the purposes and business situation)

- With the Maloy International Port PPP project, East Kalimantan will be a strategic point of international maritime trade and promote economic activities in relevant industries.

7. Management of transport -inherent risks

[Investment risk]

- MOT is discussing the possibility of providing the subsidies to Maloy International Port PPP project. If subsidies are provided, the cost burden to build infrastructure such as service facilities and crude palm oil storage facilities will be reduced, thus reducing the investment risk for the private company.

1. Basic information

1 -1. Economy	● Indonesia
1 -2. Transportation mode	● Airport Sector
1 -3. Project name	● Bali International Airport
1 -4. Major implementer	● Bali
1 -5. Site	● Bali International Airport
1 -6. Period	● Procurement in 2016
1 -7. Total cost	● US$510 million
1 -8. Form	-

2. Summary

- New Bali International Airport is to be built and operated as a PPP project to solve traffic congestion at the Ngurah Rai International Airport. Of the three candidate locations, the frontrunner is Kubutambahan, Buleleng, which can accommodate two runways. It is listed as a potential PPP project in the PPP Book.
- The scheme is undecided but Bali is in discussion to do land acquisition.
- It is planned to select and conclude a contract with a private company in 2016.

3. Background and purposes

- Bali is a famous and popular tourist destination. The Ngurah Rai International Airport had 11.1 million users and congestion worsened considerably, and the airport cannot increase in the number of flights.
- Bali is aiming to create a PPP project of Bali International Airport construction and operation. It is expected to mitigate the congestion at the Ngurah Rai International Airport and draw more tourists, so that tourism will be promoted in the northern part of Bali (**Figure 2-27**). The Bali International Airport PPP project is listed as a potential PPP project in the BAPPENAS PPP Book

Figure 2-27: New Bali International Airport location

Source: 2013 PPP Book, BAPPENAS

4. Content of implementation (development and role divisions)

- In Bali, 3 locations are listed as candidates for building Bali International Airport (**Figure 2-28**). Out of them, Bali says that Kubutambahan, Buleleng in the northeast part of Bali Island, where two runways can be built, is the frontrunner. Bali has announced a plan to build a toll road between Bali International Airport and the southern part of the Island.

Figure 2-28: Bali International Airport candidate locations

- ○ Gerogkak
- ○ Celukan Bawang
- ○ Kubutambahan, Buleleng (2 runaway construction is possible, most feasible)

Source: 2013 PPP Book, BAPPENAS:

- The cost of the Bali International Airport PPP project is estimated at US$510 million. Bali is

currently discussing the scheme and the possibility of Bali doing the land acquisition to reduce land -acquisition risks for the private company that would implement the project.

5. Government support

- In the Bali International Airport PPP project, Bali might take the responsibility for land acquisition.

6. Outcome (usage, achievement of the purposes and business situation)

- The Bali International Airport PPP project will attract tourists besides the Ngurah Rai International Airport, reduce traffic congestion in the Ngurah Rai International Airport and promote tourism in Bali.

7. Management of transport -inherent risks

[Land acquisition risk]

- For the Bali International Airport PPP project, it is being discussed that Bali might take the responsibility for land acquisition. If this is implemented, the private company can avoid land -acquisition risk.

2 -5. Japan

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Matsuyama City Omnibus Town Plan	Privatization
2	Land transportation (rail)	● Minato -Mirai Line	Joint Venture
3	Land transportation (rail)	● Toyama Light Rail	Joint Venture
4	Land transportation (rail)	● Tsukuba Express	Joint Venture
5	Air transportation	● The Project on the Development and Operations of International Passenger Terminal at Tokyo (Haneda) International Airport	Stand-alone basis
6	Air transportation	● Apron Construction Project in the International Airline Area of the Tokyo International Airport	Operation
7	Air transportation	● Tajima Airport	Concession
8	Air transportation	● Sendai Airport	Concession
9	Air transportation	● New Kansai International Airport Co. Ltd	Concession

(2) Cases

1. Basic information

1 -1. Economy	● Japan
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Matsuyama City Omnibus Town Plan
1 -4. Major implementer	● Matsuyama City, Iyo Railway Co. Ltd.
1 -5. Site	● Matsuyama City
1 -6. Period	● 2005 - 2009
1 -7. Total cost	● Plan: 2.18 billion yen (about US$18 million)
1 -8. Form	● Privatization

2. Summary

- Matsuyama City worked on promoting public transportation with low CO_2 emissions. Matsuyama City and Iyo Railway Co. Ltd. (which operates not only railway but also the bus) requested MLIT subsidies for establishing the Matsuyama City Omnibus Town Plan. This plan aims at improving the environment for bus use. It was implemented from FY 2005 to FY 2009 at a cost of 2.18 billion yen (about US$18 million) under the form of privatization.
- Under the Matsuyama City Omnibus Town Plan, the convenience for bus users has remarkably improved. According to the survey conducted by Matsuyama City, 62.3% of users are satisfied with this bus service. The decline in bus passenger stopped because the convenience for bus user has improved. In recent years, the number of users remain stable.

3. Background and purposes

- Matsuyama City is a transport hub in Ehime Prefecture, and is connected by various transport modes ranging from automobiles, streetcars, buses and airplanes. In comparison with other local cities, the share of public transport users was relatively small, and automobile and bicycle users had higher shares. Under this situation, it became important for public transport to be made more attractive to users in Matsuyama City. In FY 2004, the city established an integrated General Transportation Section by merging the traffic safety group, commercial and industrial group and civil engineering group. This shows that public transport was recognized in the city office as an important public service.
- Matsuyama City promotes the concept of Compact City, which is a concept on city planning that urban functions and residential units should be integrated and concentrated in the urban area to improve convenience. This idea is one of the counter measures against the decreasing and aging population which local communities are facing in Japan. Matsuyama City established the Matsuyama City Community Building Transportation Plan, which aims at promoting bicycle traffic and an optimal combination of different transportation means. It includes efforts to promote the use of public transportation by using low CO_2 emission buses. The Matsuyama City Omnibus Town Plan from FY 2005 to FY 2009 has been implemented in coordination with related sections in the city office. Assessment on cost effectiveness has been conducted in parallel. Several measures to improve the environment for bus users have been conducted by Iyo Railway Co. Ltd. under the Matsuyama City Omnibus Town Plan established by Matsuyama city. It is recognized as a type of privatization.

4. Content of implementation (development and role divisions)

- In Matsuyama City, Iyo Railway Co. Ltd. operates the bus transport. Because the number of bus users had been declining, Matsuyama City and Iyo Railway Co. Ltd. strengthen their alliance from 2004 to improve the convenience of bus users. Matsuyama City and Iyo Railway Co. Ltd. studied the MLIT subsidy program and requested it to implement the Matsuyama City Omnibus

Town Plan. It was implemented from FY 2005 to FY 2009 with 2.18 billion yen (about US$18 million). Iyo Railway Co. Ltd. introduced low -floor and environmental -friendly buses, bus stops with roofs and benches, prepaid e -ticket card systems for smooth riding on buses, park and ride programs and real -time bus locating service systems under the Matsuyama City Omnibus Town Plan (**Figure 2-29**).

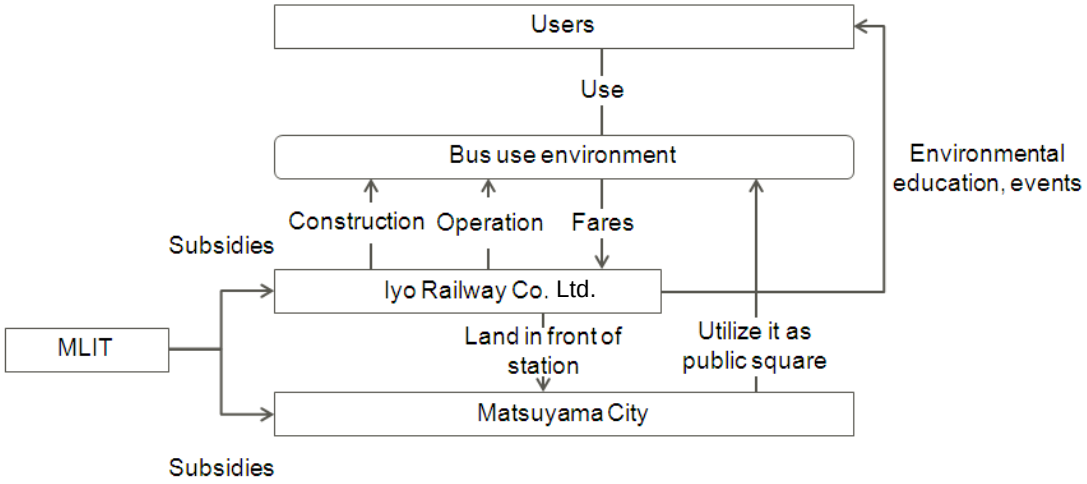
- With the view of increasing users by deepening the understanding of the effectiveness of bus transport by the residents, the Matsuyama City Omnibus Town Plan gives lectures about the low environmental -impact and high convenience of bus transport. It also holds events for providing information in using bus transport (**Figure 2-30**).

Figure 2-29: Matsuyama City Omnibus Town Plan (examples)

[Low floor bus, low pollution] **[Covered bus stop]** **[Fare settlement by IC card]**

Source: Matsuyama City

Figure 2-30: Matsuyama City Omnibus Town Plan PPP project scheme



Source: based on information from Matsuyama City

5. Government support

- The Matsuyama City Omnibus Town Plan utilized the MLIT subsidies for improving the convenience of bus use.

6. Outcome (usage, achievement of the purposes and business situation)

- Under the Matsuyama City Omnibus Town Plan, the convenience of bus use has improved. According to the “Post -implementation Evaluation of the Matsuyama City Omnibus Town Plan,” (Matsuyama City, 2011) 62.3% of the users were satisfied with the bus service. In Matsuyama City, the decline in bus users stopped because the bus transport service improved. In recent years, the number of bus users remain stable.

7. Management of transport -inherent risks

[Investment risk]

- In the implementation of the Matsuyama City Omnibus Town Plan, Matsuyama City and Iyo Railway Co. Ltd. utilized the subsidy program provided by MLIT to improve the environment for bus users and reduced the investment risk.

1. Basic information

1 -1. Economy	● Japan
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Minato -Mirai Line
1 -4. Major implementer	● Yokohama High -Speed Railway, Yokohama, Kanagawa Prefecture, Tokyu Railway Co., Mitsubishi Estate Co.
1 -5. Site	● Yokohama City
1 -6. Period	● From 1992
1 -7. Total cost	● Construction cost: about 257 billion yen (about US$2.141 billion)
1 -8. Form	● Joint Venture

2. Summary

- Yokohama City made an integrated redevelopment plan for the Minato -Mirai 21 area and Yokohama's urban area where shipbuilding factories and cargo terminals used to be.
- Yokohama City established the Yokohama High -Speed Railway Company jointly with a group of private corporations. This company built and operates the Minato -Mirai Line connecting Minato -Mirai 21 and Yokohama's urban area. The construction cost is partly born by the beneficiaries.
- Ordinary income is still at a loss due to the construction cost for the Yokohama High -Speed Railway. However, ridership is increasing.

3. Background and purposes

- Yokohama City in Kanagawa Prefecture is adjacent to Tokyo Metropolis. In the 1960s, the population showed a sharp increase. The urban area was expanding at a rate higher than the development plan. Yokohama City implemented an integrated redevelopment plan for the Minato -Mirai 21 area and the Yokohama urban area to develop over 186ha on the site of disused shipbuilding factories and cargo terminals (**Figure 2-31**).
- The development of Minato -Mirai 21 was conducted from 1983 to 2011. The Minato -Mirai Line was constructed between 1992 and 2004, which connects the Minato -Mirai 21 area and Yokohama's urban area. The Minato -Mirai Line has been constructed and is operated by Yokohama High -Speed Railway Co., which was established by major parties such as Yokohama City, Kanagawa Prefecture, Tokyu Railway Co. and Mitsubishi Estate Co., while utilizing the subsidy system. This company is recognized as a joint venture.

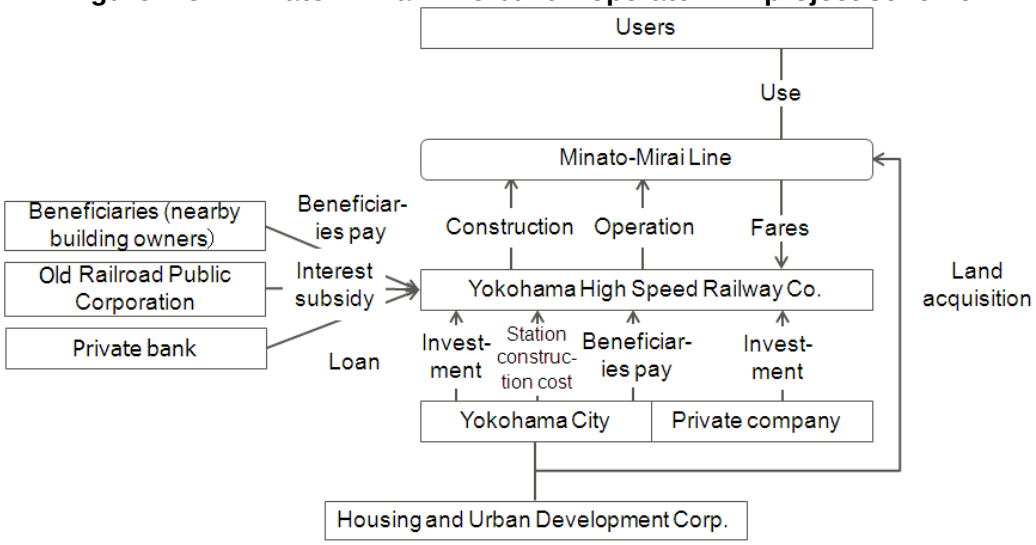
Figure 2-31: Location of Minato -Mirai 21 area and Minato -Mirai Line

Source: Minato -Mirai information by Yokohama City

4. Contents of implementation (development and role divisions)

- The Minato -Mirai Line is 4.1 km long, connecting Yokohama, Motomachi and Chinatown, with 6 stations.
- After Yokohama City and the Housing and Urban Development Corp. acquired the land for the Minato -Mirai Line, Yokohama High -Speed Railway Co. began construction in 1992 (**Figure 2-32**). There are many cases where the convenience of the land is improved by development of railways and land price along the line increases. Therefore, considering such circumstances, the city enacted an ordinance whereby beneficiaries of the rise in land price must bear a portion of the construction cost. Yokohama High -Speed Railway Co. raised 50 billion yen (About US$416 million) through the Urban Transportation Infrastructure Construction Fund. These funds were collected from the City of Yokohama, Housing and Urban Development Corp. and owners of building located in and around the area who would gain benefit from development of the line. In addition, it raised 20 billion yen (about US$166 million) from Yokohama to construct the New Takashima Station. It also received interest subsidies from the former Railroad Public Corporation (currently Japan Railway Construction, Transport and Technology Agency) and received a loan from a private bank.

Figure 2-32: Minato - Mirai Line build - operate PPP project scheme



Source: based on information by MLIT

5. Government support

- Yokohama City enacted the ordinance whereby cost for the construction of the Minato -Mirai Line shall be partially born by beneficiaries. It defined the method and reason for calculating the share of each financial burden. It helped forming agreements on the financial burden of beneficiaries.
- Yokohama City bore the cost for construction of New Takashima Station on the Minato -Mirai Line. The former Railway Public Corporation subsidized Yokohama High -Speed Railway Co.'s interest payments.

6. Outcome (usage, achievement of the purposes and business situation)

- Ordinary income is still at a loss due to the construction cost for the Yokohama High -Speed Railway. However average daily passengers on the Minato -Mirai Line increased to 191,000 in 2014. Operating profit of Yokohama High -Speed Railway Co. is expected to improve due to the increase in passengers.

7. Management of transport -inherent risks

[Investment risk]

- The beneficiaries, Yokohama City and the old Railway Public Corporation supported the Yokohama High -Speed Railway Co. to reduce the cost burden. This helped to reduce the investment risk.

1. Basic information

1 -1. Economy	● Japan
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Toyama Light Rail
1 -4. Major implementer	● Toyama Light Rail Co., Toyama City, Toyama Prefecture
1 -5. Site	● Toyama City
1 -6. Period	● From 2006
1 -7. Total cost	● Construction cost: about 5.8 billion yen (approx. US $48 million)
1 -8. Form	● Joint venture

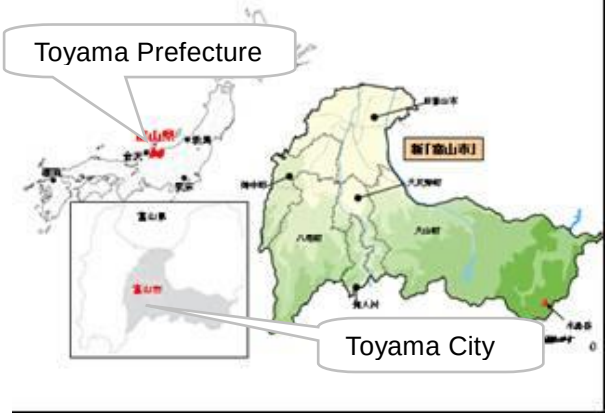
2. Summary

- When West Japan Railway Company (JR West) planned to terminate operation of the Toyama Port Line running through Toyama City, Toyama City and Toyama Prefecture invested in the establishment of Toyama Light Rail Co. The purpose of the company is reconstruction of the Toyama Port Line. The operation started in 2006.
- Under the policy of public building and private operation, Toyama Light Rail's construction cost was born by Toyama City and Toyama Prefecture with a national government grant and cooperation funds from JR West. The urban area is linked by the Toyama light Rail and the number of residents along this line Rail increased. This rail contributes to development of the city under the concept of "compact city".

3. Background and purposes

- Toyama City is located in the center of Toyama Prefecture. As of July 2015, its population is about 420,000, which is approximately 40% of the population of Toyama Prefecture., The city forms a major urban area in the prefecture. Among the cities along the Japan Sea coastal area, it is a significantly sized city. Urban functions are scattered in the whole city area since the built -up urban area has expanded. In addition, Public transport network had not been developed well. Consequently dependency on automobile use for a trip became higher. The high dependency on automobile use caused an increase in CO_2 emissions from transport sector. Therefore, Toyama City has promoted the concept of "compact city." The compact city is a concept identified by the following characteristics, dense and proximate development pattern, urban areas linked by public transport system and accessibility to local service and jobs. As JR West was going to terminate the Toyama Port Line running through Toyama City, Toyama City and Toyama Prefecture invested to establish Toyama Light Rail Co. to renovate the Toyama Port Line into Toyama Light Rail. It began operating in 2006.
- In Toyama City, Toyama Light Rail was reconstructed and renovated by the public sector. After this reconstruction, private operator funded by local government and private companies operates the light rail. This is a kind of joint venture project.

Figure 2-33: Location of Toyama City



Source: Toyama City

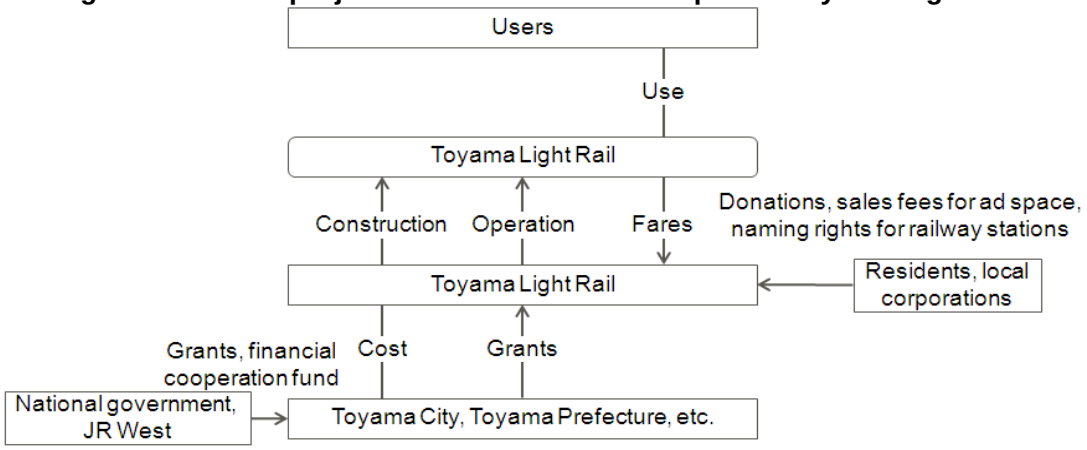
4. Contents of implementation (development and role divisions)

- When JR West planned to terminate the operation of the Toyama Port Line, the line was

planned to be renovated into Toyama Light Rail. Toyama City invested 33.1% and Toyama Prefecture 16.1% in Toyama Light Rail Co. Toyama Light Rail connects Toyama Station North and Iwasehama and is 7.6km long with 13 railway stations. The construction cost was about 5.8 billion yen (about US $48 million). This was paid by Toyama City and Toyama Prefecture under the policy of “public building, private operation.” In addition, it utilized the national government grant and cooperation funds from JR West when the line was discontinued (**Figure 2-34**).

- In the operation of Toyama Light Rail, operation costs such as labor and utilities are to be paid from fare revenues to the Toyama Light Rail Co. However, the repair and maintenance fees such as facility repair costs are subsidized by Toyama City. Additionally, Toyama Light Rail Co. is seeking other sources of revenue, such as donations to place plaques in memory of donors on benches, as well as selling ad space and naming rights for new stations.

Figure 2-34: PPP project scheme to build and operate Toyama Light Rail



Source: “Overview of urban development plan in Toyama City,” Toyama City, 2011

5. Government support

- To construct Toyama Light Rail, Toyama City and Toyama Prefecture paid the cost in addition to the grant from the national government.

6. Outcome (usage, achievement of the purposes and business situation)

- Average weekday daily ridership on the Toyama Light Rail has more than doubled from that of Toyama Port Line, rising from 2,286 in 2005 to 4,800 today. In Toyama City, the residents in the areas adjacent to the Toyama Light Rail have increased. Starting in 2011, the influx of residents has been greater than the number leaving. As users of the Toyama Light Rail has increased, the modal shift from automobile transport has taken place. Transport -sector CO_2 emissions are expected to decrease.

7. Management of transport -inherent risks

[Demand risk]

- For construction and operation of Toyama Light Rail, Toyama Light Rail Co. assumed the demand risk to operate with the fare revenue. However, Toyama City helps the maintenance cost for Toyama Light Rail. By reducing the burden of operation in this way, Toyama Light Rail Co. has also reduced the demand risk.

[Investment risk]

- For the Toyama Light Rail project, reconstruction of the Toyama Port Line was costly, about 5.8 billion yen (US $48 million). The construction cost of the Toyama Light Rail was paid by Toyama City and Toyama Prefecture. However, by utilizing a grant from the national government and cooperation funds from JR West, the investment risk was reduced as the total construction cost burden was alleviated.

1. Basic information

1 -1. Economy	● Japan
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Tsukuba Express
1 -4. Major implementer	● Metropolitan Intercity Railway Company (MIRC)
1 -5. Site	● Tokyo Metropolis, Saitama Prefecture, Chiba Prefecture, Ibaraki Prefecture
1 -6. Period	● From 1991
1 -7. Total cost	● Construction cost: 808.1 billion yen (approx. US$ 6.734 billion)
1 -8. Form	● Privatization (BOO)

2. Summary

● To mitigate traffic congestion in the metropolitan area, the Metropolitan Intercity Railway Company (MIRC, formerly known as Japan Railway Construction Public Corp.) opened Tsukuba Express in 2005. It connects Akihabara, Tokyo and Tsukuba Scientific City in Ibaraki Prefecture. Local governments along the line provided investment to establish MIRC. Land acquisition proceeded smoothly based on the Integration Act. The urban railway construction subsidy was utilized to build the Tsukuba Express. This project is implemented under BOO type in PPP scheme.

● The population in the areas along the Tsukuba Express line is increasing. This increase of population causes an increase of railway users. It ensures stable management and profitable operation.

3. Background and purposes

● During the high -growth economy period between 1950 and 1970, the population increased in the Tokyo metropolitan area. Transport congestion became a problem to be tackled. It was also a big problem to meet growing housing demand in the area. To mitigate the congestion and provide housing sites in the metropolitan area such as on the JR Joban Line, in 1975 the Council for Transport Policy published plans to supply a large volume of good quality housing in the northeastern metropolitan area as well as to develop rapid rail transit.

● In 1991, MIRC was established with investment by the Tokyo Metropolitan Government and the governments of Saitama, Chiba, and Ibaraki Prefectures. MIRC operates Tsukuba Express as rapid rail transit connecting Akihabara and Tsukuba Scientific City. MIRC took over the Tsukuba Express constructed by the former Japan Railway Construction Public Corporation (currently Japan Railway Construction, Transport and Technology Agency) and has operated it since 2005. Construction and operation of the Tsukuba Express project is a PPP project of BOO type.

4. Contents of implementation (development and role divisions)

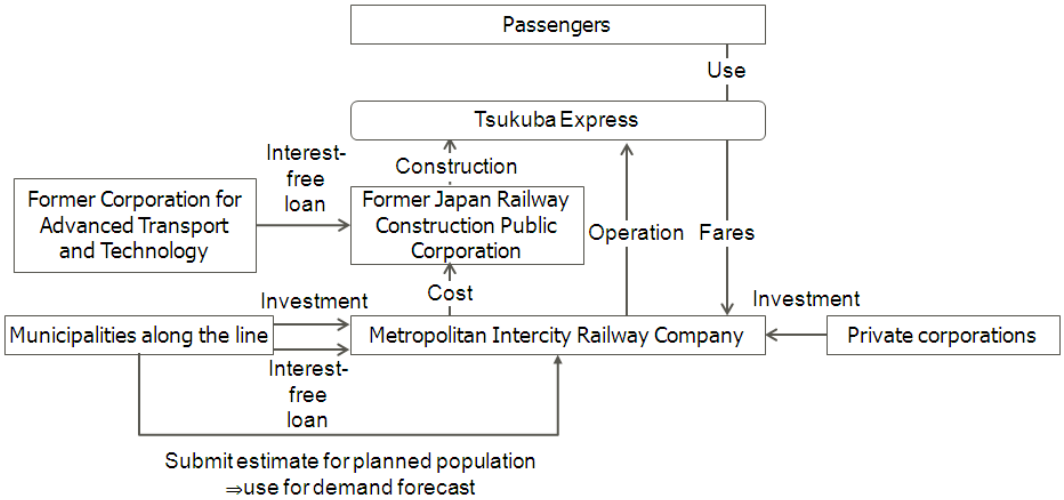
● The Tsukuba Express, from Akihabara to Tsukuba Scientific City, is 58.3km in length, with 20 stations. It runs 6 -car high -speed trains at 130km per hour. The fastest takes 45 minutes.

● In 1989, the “Act on Special Measures for Integrated Promotion of Residential Land Development and Railway Development in Metropolitan Areas” (Integration Act) was enacted. It describes the special exemptions for creating agreements among stakeholders facing the railway construction as well as enabling the previously purchased land to be included within the space for railway -related facilities. To construct Tsukuba Express, MIRC negotiated with farmers and residents in surrounding areas to acquire land based on the Integration Act. MIRC utilized this act to exchange land it had bought with that needed for the railway facilities. Thus, the land was acquired efficiently. Governments along the line promoted community development matching the construction of Tsukuba Express and submitted population forecasts according to

city planning. MIRC therefore easily forecasted the ridership of Tsukuba Express.

- The construction of Tsukuba Express cost 808.1 billion yen (approximately US $6.734 billion). MIRC purchased the Tsukuba Express constructed by the Japan Railway Construction Public Corp. by utilizing the investments by the local governments along the line and interest -free loans **(Figure 2-35)**. The Japan Railway Construction Public Corp. utilized interest -free loans based on the urban railway construction subsidy program of the Transportation Facilities Maintenance Corporation (currently Japan Railway Construction, Transport and Technology Agency). This scheme reduced the construction cost.

Figure 2-35: Tsukuba Express Build - Operate PPP project scheme



Source: "Tsukuba Express Construction Story," Urban Rapid Transit Study Group, Seizan -do Shoten, 2007

5. Government support

- To construct the Tsukuba Express, MIRC acquired the necessary land efficiently under the Integration Act which was designed for this project..
- Governments along the Tsukuba Express line provided the cooperative environment by providing population forecasts according to city planning, which enabled MIRC to easily forecast ridership.
- The Japan Railway Construction Public Corp. received interest -free loans from the Transportation Facilities Maintenance Corporation, based on the urban railway construction subsidy program, to construct the Tsukuba Express.

6. Outcome (usage, achievement of the purposes and business situation)

- While population decrease is seen nationwide in Japan, population along the Tsukuba Express is on the rise. The number of people transported by Tsukuba Express has increased since its opening in 2005, reaching 117.77 million in 2014. The business revenue has increased to 40.5 billion yen in 2014 and its profit is stable.
- Tsukuba Express promoted the development of the northeastern part of the Tokyo Metropolitan Area and the residential population increased. Congestion on the JR Joban line is alleviated by operation of a fast route between Akihabara, Tokyo and Tsukuba Scientific City in Ibaraki Prefecture.

7. Management of transport -inherent risks

[Demand Risk]

- The MIRC ridership forecast was more accurate due to adjacent governments promoting city planning for development and increased population. This reduced the demand risk.

[Investment risk]

- The Japan Railway Construction Public Corp. constructed the Tsukuba Express with interest -free loans provided from the urban railway construction subsidy program, which reduced the construction cost, and therefore, the investment risk.

[Land acquisition risk]

- Based on the Integration Act, MIRC acquired the land for Tsukuba Express efficiently. This reduced the land acquisition risk.

1. Basic information

1-1. Economy	● Japan
1-2. Transportation mode	● Air transportation
1-3. Project name	● The Project on the Development and Operations of International Passenger Terminal at Tokyo (Haneda) International Airport
1-4. Main implementer	● Tokyo International Air Terminal Corporation (TIAT)
1-5. Site	● The International Passenger Terminal Area in Haneda Airport
1-6. Period	● From 2006 to 2038
1-7. Total cost	-
1-8. Form	● On a stand-alone basis (After the completion of the project, the government of Japan or the third party designated by it can purchase the facility from the SPC in current value)

2. Summary

● Tokyo Regional Civil Aviation Bureau of MLIT has implemented the project on the Development and Operations of International Passenger Terminal at Tokyo Int'l Airport through PFI method, which is positioned as part of PPP projects.
Since International Passenger Terminal has been placed in service, the number of passengers is on a steady rise and it reached 11.56mil. in the year 2014 alone. Also, TIAT was certified with the highest 5-Star Airport rating by SKYTRAX for the second consecutive year (2014 and 2015) .

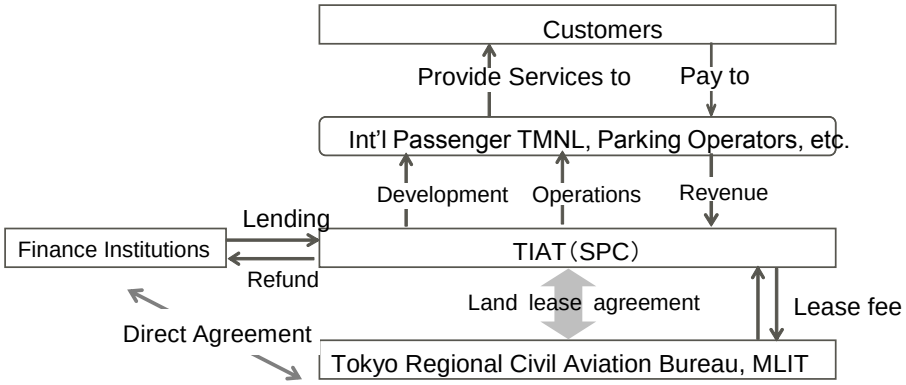
3. Background and purposes

● In 2002, the Basic Policies for Economic and Fiscal Management, and Structural Reform decided by the cabinet was announced, and the government of Japan made a statement that MLIT shall further expand Haneda Airport to operate scheduled international flights between 2006 and 2009 to make Japan more competitive economy, and that it shall make tangible efforts to use PFI method more frequently in order to increase efficiency in public spending.
● In response to the request from the government, MLIT has decided to develop and operate International Passenger Terminal building, etc. through PFI method to increase the level of customer service by developing airport facilities efficiently and effectively using knowledge, skills and experiences of the private sector.

4. Contents of implementation (development and role divisions)

● In the case of the Project on the Development and Operations of International Passenger Terminal at Tokyo (Haneda) International Airport, MLIT has selected a group by auction. The group has established TIAT as a SPC and, in 2006, it has entered into a contract with MLIT to implement the project through to 2038 (**Figure 2-36**).
● TIAT takes a loan from finance institutions and has constructed International Passenger Terminal building, etc. on the land leased from MLIT to operate it.
● TIAT charges customers passenger service facility charge (PSFC), other charges including parking fee to recover all cost associated with the development and operations.
● After the completion of the project, MLIT or the third party designated by it can purchase the facility from TIAT in current value.

Figure 2-36: Flow Chart of the Project on the Development and Operations of International Passenger Terminal at Tokyo (Haneda) International Airport



Source：created from MLIT information

5. Government support

- Further expansion of Haneda Airport, operating scheduled air transport services, and promoting PFI were announced by the 2002 Basic Policies for Economic and Fiscal Management, and Structural Reform, and the whole government has worked on the development of the international passenger terminal area in Haneda Airport.
- MLIT entered into the direct agreement with financial institutions to stably continue the project.

6. Outcome (usage, objective achievement and business situation)

- Since International Passenger Terminal has been placed in service, the number of passengers is on the steady rise and it reached 11.56mil. in the year 2014 alone.
- TIAT was certified with the highest 5-Star Airport world rating by SKYTRAX for the second consecutive year (2014 and 2015).

7. Management of transport -inherent risks

[Demand risk]

- TIAT shall take risks posed by demand fluctuations, except for irresistible force due to policy changes by the government, including the limitation on aircraft movements.
- However, in cases where any change is needed on its facility or operations depending on the needs of customers or social situations during the project, TIAT can have consultations with the government on layout and size of facility, how to operate it.

1. Basic information

1 -1. Economy	● Japan
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● Apron Construction Project in the International Airline Area of the Tokyo International Airport
1 -4. Major implementer	● MLIT (Kanto Regional Development Bureau), Haneda Airport International Apron PFI Co, Ltd
1 -5. Site	● Tokyo International Airport, international airline area
1 -6. Period	● From 2006 to 2035
1 -7. Total cost	● 67billion yen (about US$ 560million) as of 1st August 2015
1 -8. Form	● Maintenance

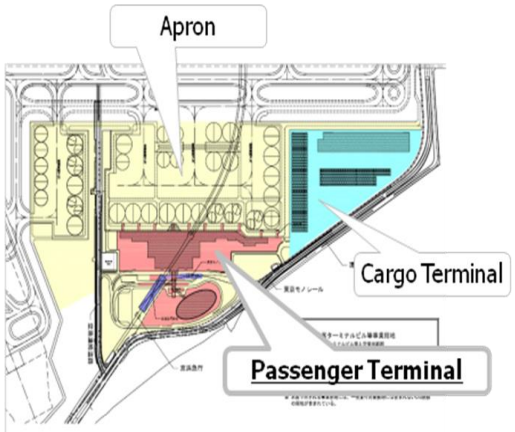
2. Summary

- The MLIT Kanto Regional Development Bureau promotes the work on the apron construction project in the international airline area of Tokyo International Airport during the period from 2006 to 2035 under private finance initiative (PFI) as a one of PPP forms. The apron commenced its operation in 2010.
- Haneda Airport International Apron PFI Co. Ltd received a loan from a financial group to implement the apron construction project in the international airline area of the Tokyo International Airport. The MLIT Kanto Regional Development Bureau pays the cost in installments.

3. Background and purposes

- Tokyo International Airport (Haneda Airport) is located close to the center of the Greater Tokyo Area, which is one of the national government -managed airports. In 2014, customers exceeding 70 million use the airport, which is the busiest one in Japan and an air transport hub. In the past, since Narita International Airport opened, Tokyo International Airport had been mainly used for domestic air travel. When constructing the 4th runway, MLIT decided to construct the international airline apron and passenger terminal, as well as cargo terminal. These opened in 2010 (**Figure 2-37**).

Figure 2-37: Location of international airline area construction project



Source：created from information by MLIT

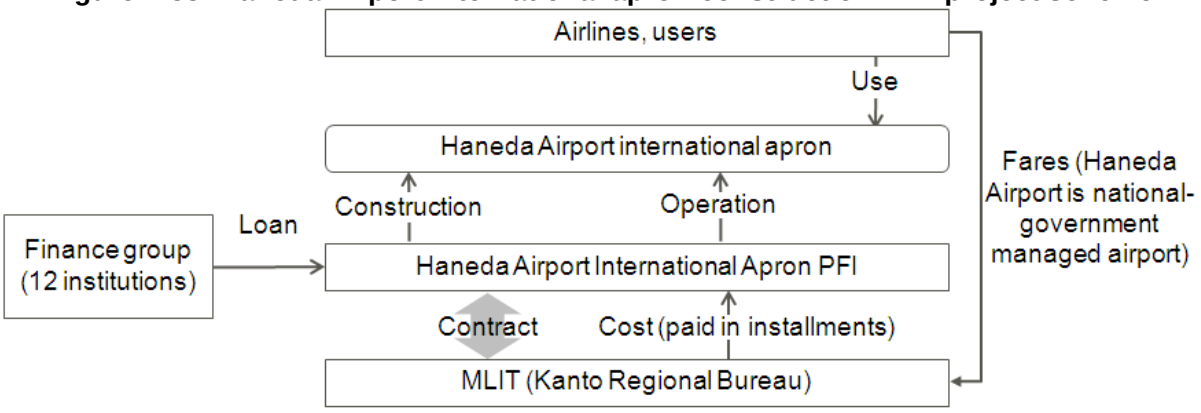
- The Apron Construction Project in the International Airline Area of the Tokyo International Airport used the private sector's know -how and finance, aiming at efficient and effective implementation. For this purpose, the private finance initiative (PFI) which is one of PPP forms was introduced. There were separate PPP projects for the apron, the passenger terminal and cargo terminal. For the Apron Construction Project in the International Airline Area, the special purpose corporation, Haneda Airport International Apron PFI Co., Ltd. (representative company: Taisei Corporation) made a successful bid. The implementation period is for 2006 to 2035. The successful bid amount was around 52 billion yen (about US $430 million). In 2012, the contract amount was increased by 10 billion yen (US $83 million) for

expansion of apron in the international airline area.

4. Contents of implementation (development and role divisions)

- In the Apron Construction Project in the International Airline Area of the Tokyo International Airport, Haneda Airport International Apron PFI Co., Ltd. was established to carry out the project in a stable fashion. It received a loan from a consortium of 12 financial institutions. The contract is to construct and manage the Haneda Airport international apron, which consists of an airport security facility, incidental facilities, airport premise roads, car park and green spaces until 2035. This is a long -term build -operate contract. Therefore, the PFI company was established for avoiding the influence from the financial and business condition of the implementing private corporation.
- The MLIT Kanto Regional Development Bureau pays the cost in installments (**Figure 2-38**). This spreads out the financial burden of the construction costs.
- The New Growth Strategy (Cabinet Decision of 2010) announced that the annual international airline capacity for landings and takeoffs from the Tokyo International Airport will be increased from 60,000 in 2010 to 90,000 in 2013. To achieve the strategy, the International airline area needs to be extended. Therefore, the contract was modified for additional construction and improvement of the apron area in 2012. The amount of this contract was increased by 10 billion yen (about US$ 83 million).

Figure 2-38: Haneda Airport international apron construction PPP project scheme



Source: created from information by MLIT

5. Government support

- Basic Policies for Economic and Fiscal Policy Management and Structural Reform 2002 (Cabinet Decision 2002) determined the re -expansion, promoting international airline routes and use of PFI with regards to Haneda Airport. Therefore, the entire national government is promoting this project.
- Considering public meanings and objectives of the project, MLIT and financial institutions concluded an agreement on mutual cooperation to ensure smooth implementation and continuity during the period of the project.

6. Outcome (usage, achievement of the purposes and business situation)

- The construction of apron construction has been completed on schedule. After the apron commenced its operation, International flights are being operated and many customers are using the apron.

7. Management of transport -inherent risks

[Investment risk]

- In the project, Haneda Airport International Apron PFI Co. Ltd implements the project and procures the necessary funds. The MLIT Kanto Regional Development Bureau pays the cost in installments so that the financing burden can be leveled. The contract between the Government and Haneda Airport International Apron PFI Co. Ltd clarifies the risk allocation between Haneda Airport International Apron PFI Co. Ltd and the public side.

1. Basic information

1 -1. Economy	● Japan
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● Tajima Airport
1 -4. Major implementer	● Hyogo Prefecture, Tajima Airport Terminal Co., Ltd.
1 -5. Site	● Tajima Airport
1 -6. Period	● 2015 to 2020
1 -7. Total cost	-
1 -8. Form	● Concession

2. Summary

- Hyogo Prefecture sold out operation rights consolidating basic airport facilities and related facilities of the surrounding airport to Tajima Airport Terminal Co. Ltd in 2013 under the “Act on Management and Operation of National Government -Managed Airports through Participation of Private Entities”. Operation rights were sold for the period of 2015 to 2020.
- Hyogo Prefecture can provide financial support for the operation except for voluntary business by the private sector and profitable business within its budget limitations. Hyogo Prefecture estimates the cost reduction of 42 million yen (about US $350,000) for the period of 2015 to 2020.

3. Background and purposes

- Tajima Airport is a locally managed airport. It opened in 1994 as the solution to the lack of high -speed transport in the Tajima area and a project to stimulate the local economy. Currently, many tourists use Tajima Airport to visit Takeda Castle selected as one of Japan top 100 castles (**Figure 2-39**). Tajima Airport’s basic facilities (runway, landing strip, taxiway, and apron) were operated and maintained by Hyogo Prefecture. The terminal building facility, parking lots and incidental airport facilities were operated and maintained by Tajima Airport Terminal Co., Ltd. designated as a management corporation, which was established by Hyogo Prefecture, other local governments, Japan Airport Co Ltd and the local merchants association.
- In 2013, the “Act on Management and Operation of National Government -Managed Airports through Participation of Private Entities” was enacted, which permits selling out operation rights of airports managed by the national government and local governments to a private operator and enables this private operator to operate and manage the facilities. Hyogo Prefecture sold out the operation rights in fixed term under the act, which was consolidated operations for the basic airport facilities and the incidental facilities of Tajima Airport. This project is recognized as one of PPP forms. Tajima Airport Terminal Co. Ltd was selected, as it has airport operation know -how and is expected to create collaboration with regional industries based on the close relations with the local Merchants Association. It is operating Tajima Airport from 2015 to 2020.

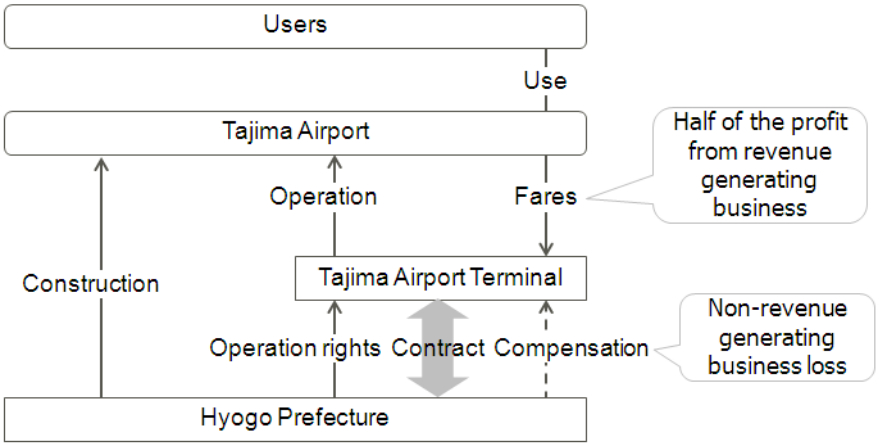
Figure 2-39: Tajima Airport

Source：Google Maps

4. Contents of implementation (development and role divisions)

- Japan Air Commuter flies the route between Tajima Airport and Osaka International Airport twice a day. In FY 2013, the number of users was 26,410. The length of Tajima Airport's runway is 1,200m. There are 3 berths and 8 spots in the terminal apron.
- Tajima Airport has the airport operation business, airport aviation security facility operation business, environmental response business, and other related business. The first step was to consolidate basic airport facilities and other related facilities surrounding the airport. Tajima Airport Terminal Co. Ltd, which acquired the operation rights to Tajima Airport, receives revenue from user fees such as landing fees during the period of 2015 to 2020 and operates the facilities.
  Hyogo Prefecture can provide financial support for the operation except for voluntary business by private sector and profitable business within its budget limitations (**Figure 2-40**). If those businesses make profit, half the profit may be retained by the company. This system encourages management effort in the business operations.

Figure 2-40: Tajima Airport operation PPP project scheme



Source: created from information by Hyogo prefecture

5. Government support

- In the operation of Tajima Airport, other than for businesses that generate steady revenue, Hyogo Prefecture provides financial support within its budget for necessary expenditure except for profitable business conducted by Tajima Airport Terminal Co. Therefore, steady management is expected for basic airport facilities of Tajima Airport..

6. Outcome (usage, achievement of the purposes and business situation)

- Hyogo Prefecture estimates the cost reduction of about 42 million yen (about US $350,000) during the period of 2015 to 2020 by having a private operator run Tajima Airport. The savings come from reviewing staffing allocation and reorganizing the system to be efficient.

7. Management of transport -inherent risks

[Demand risk]

- Tajima Airport's revenue from collecting user fees is assumed to vary depending on the usage volume. Tajima Airport Terminal Co. assumes the demand risk. However, Hyogo Prefecture provides financial support within its budget for business except for profitable business. Thus demand risk is reduced. Tajima Airport Terminal Co. is allowed to keep half of the profit from these business operations. Therefore, it is possible to reduce the demand risk by actively doing sales work to increase the number of flights and to increase the number of air transport users.

1. Basic information

1 -1. Economy	● Japan
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● Sendai Airport
1 -4. Major implementer	● MLIT
1 -5. Site	● Sendai Airport
1 -6. Period	● From 2016 (maximum period is 65 years (30 years initial contract, optional contract extension up to 30 years upon completion of initial contract period, as well as additional extension option due to unavoidable circumstances))
1 -7. Total cost	● Undecided
1 -8. Form	● Concession

2. Summary

- MLIT is considering a PPP project to sell operating rights for Sendai Airport to a private corporation starting 2016, for maximum 65 years.
- As of July 2015, the process of selecting a private corporation to operate the Sendai Airport is underway. MLIT aims at concluding the final selection within FY 2015.

3. Background and purposes

- Sendai Airport is one of the airports managed by the national government. It is located in Miyagi Prefecture and is a major air -transport hub for the Tohoku Region. However, volume of airport customer and cargo has recently been declining. The number of passengers peaked at 3.35 million in 2007 and cargo handled peaked at 24,000 tons in 2000. The Great East Japan Earthquake in 2011 further depressed the numbers. Sendai Airport also has all the necessary facilities and functions for international aviation. This airport has other advantages of being located in the proximity of the highly industrialized Sendai City area. More recently, airport customer and cargo has recovered in tandem with the reconstruction following the Great East Japan Earthquake. In 2013, the number of passengers was 3.07 million and the air cargo handled was 5,900 tons.
- In 2013, the "Act on Management and Operation of National Government - Managed Airports through Participation of Private Entities (Act on Airport Management through Private Entities)" was enacted. Operating rights of airports managed by the national government or local governments can be sold out to Private Corporations and operations can be implemented by the private sector under the act. As a means of accelerating the Great East Japan Earthquake restoration effort through utilizing Sendai Airport, MLIT is aiming at selling the operation right of Sendai Airport for 30 years. The basic facilities and passenger facilities, as well as the cargo building facility and parking facilities are included into

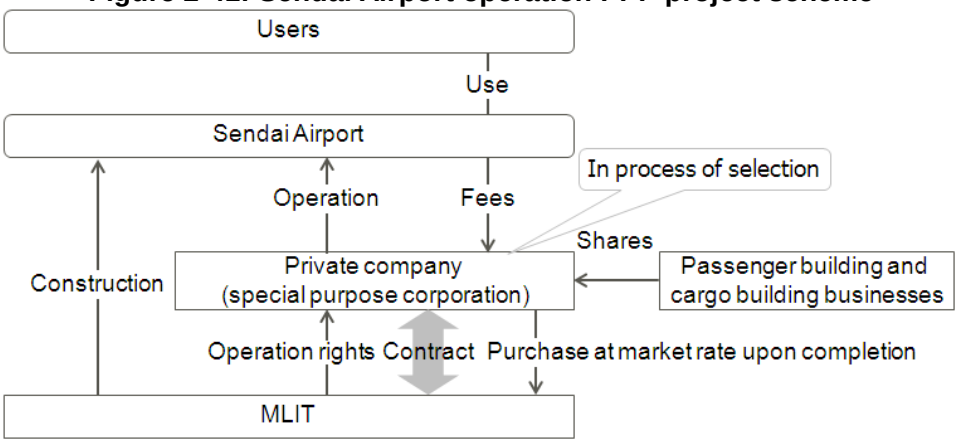
one contract on selling operational right. It is regarded as one of PPP projects. The contract to operate Sendai Airport can be extended to a maximum 65 years, including an optional extension of up to 30 years and another 5 year extension for unavoidable circumstances.

4. Contents of implementation (development and role divisions)

In 2014, the implementation policy for operation of Sendai Airport was disclosed. Operation of the airport's basic facilities, the passenger terminal building, cargo building facilities, and parking facilities are all consolidated under one single operator. A private corporation can receive usage fees such as landing fees. The operation will begin in 2016 and will extend to maximum 65 years (**Figure 2-41**). Because the operation of Sendai Airport is a long -term contract, a special purpose corporation will be established to ensure business stability, avoiding influence from financial management situations. It will also receive investment from the business operators which currently do business in the passenger terminal facilities and cargo handling facilities. Upon termination of the Sendai Airport operation contract, MLIT will purchase the buildings and facilities at market rate.

- A private corporation is to be selected as the operator of Sendai Airport through two phases of examination. As of July 2015, the first phase of screening was completed. The second examination is planned to be conducted within FY 2015.

Figure 2-41: Sendai Airport operation PPP project scheme



Source：Implementation Policy on Operation of Specified Business at Sendai Airport, MLIT, 2014

5. Government support

- The 2015 Cabinet Decision “Japan Revitalization Strategy (Revised June 2015)” announced further promotion of PFI/PPP. National Government and Miyagi Prefecture actively promotes this concession project for the Sendai Airport operation.

6. Outcome (usage, achievement of the purposes and business situation)

- It is expected that, along with the innovative operation of Sendai Airport to be implemented by a private corporation, rehabilitation following the Great East Japan Earthquake will be further promoted. For instance, by using the profit from passenger terminal facilities, the landing fees can be lowered. This may result in an increase in the number of commercial services operated by low -cost airlines, which will in turn increase the number of passengers and stimulate the tourism industry.

7. Management of transport -inherent risks

[Demand Risk]

- For the Sendai Airport project, the private corporation plans to use the landing fees to cover operating costs. The demand risk is carried by the private corporation.

1. Basic information

1 -1. Economy	● Japan
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● Kansai International Airport/Itami Airport
1 -4. Major implementer	● New Kansai International Airport Co. Ltd
1 -5. Site	● Kansai International Airport, Itami Airport
1 -6. Period	● 2016 - 2060
1 -7. Total cost	● Undecided
1 -8. Form	● Concession

2. Summary

- Selling operating rights for Kansai International Airport and Itami Airport for the period of 2016 to 2060 to a private operator is in the process of selection. It will be implemented under concession style as one of PPP forms. The reference price is 39.2 billion yen per business year (approximately US$330 million).
- As of July 2015, the selection of a private operator for Kansai International Airport and Itami Airport is in process. Two groups have passed the first selection.

3. Background and purposes

- The Act for Integrated and Efficient Establishment and Administration of Kansai International Airport and Osaka International Airport (Integration Act) was enacted in 2012. Based on this law, the management of Kansai International Airport and Osaka International Airport (Itami Airport) was integrated in 2012 (**Figure 2-42**). Since this integration, both airports are managed by New Kansai International Airport Co., Ltd. This corporation is wholly owned by the national government. In FY 2014, there were 284,000 airplane takeoffs and landings at Kansai International Airport and Itami Airport and 34.66 million users. It is the air transport hub for the Kansai Region.
- New Kansai International Airport Co. Ltd carries a debt from the construction of Kansai International Airport. The Integration Act states that the sale of the operating rights to Kansai International Airport and Itami Airport must be attempted, in order to pay back the debt early. Based on the Integration Act, New Kansai International Airport Co. Ltd is selling the operating rights for 45 years (2016 to 2060) for these airports to a private business operator. In the implementation of this operation project of New Kansai International Airport Co. Ltd, the private operator carries the demand risk. This project is implemented under concession scheme as one of PPP forms.

Figure 2-42: Location of Kansai Airport & Itami Airport

Source：New Kansai International Airport Co.

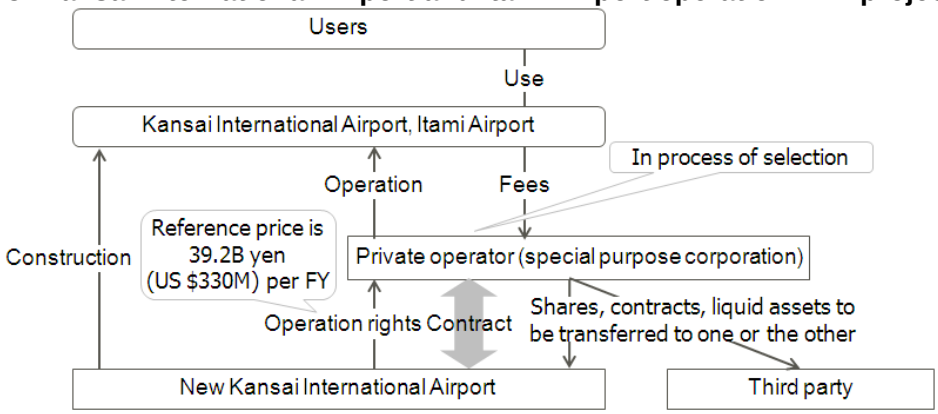
4. Contents of implementation (development and role divisions)

- In 2014, the implementation policy to operate Kansai International Airport and Itami Airport was published. In this policy, a private business operator will implement between 2016 and 2060 specified airport operation business including operation for basic airport facilities such as runways, taxiways, and aprons, as well as other airport management business such as the fuel

supply facilities at Kansai International Airport through earning revenue from these business (**Figure 2-43**). The operation of Kansai International Airport and Itami Airport will long term (45 years). The implementing private operator will establish a special purpose corporation so that it can perform business with stability, avoiding the influence from the financial management situation for an implementing private operator. Upon completion of the operation contract with Kansai International Airport and Itami Airport, all the shares, contracts and movable properties will be transferred to the third party designated by New Kansai International Airport Co. Ltd.

- As of July 2015, selection of a private operator to run Kansai International Airport and Itami Airport is in process, with an aim to start operating in 2016. New Kansai International Airport Co. Ltd has determined the reference price for the operation rights. Participants are required to propose an amount greater than the reference price. According to the requirement to apply for the operation of Kansai International Airport and Itami Airport, the reference price 39.2 billion yen per business year (about US$330 million), and the total price through the project period is 1.8 trillion yen (approximately US$14.85 billion). Two groups passed the first selection process, ORIX Company and VINCI Airport.

Figure 2-43: Kansai International Airport and Itami Airport operation PPP project scheme



Source：" Implementation Policy on the Qualified Project Etc. for Airport Operation of. Kansai International Airport and Osaka International Airport," New Kansai International Airport Co., 2014 and press release by New Kansai International Airport Co.

5. Government support

- Cabinet Decision "Japan Revitalization Strategy (Revised June 2015)" decided to promote PFI/PPP. Based on this decision, New Kansai International Airport actively promotes operation of Kansai International Airport and Itami Airport under a PPP project.

6. Outcome (usage, achievement of the purposes and business situation)

- It is expected that New Kansai International Airport will reduce the debt as dictated in the "Act for Integrated and Efficient Establishment and Administration of Kansai International Airport and Osaka International Airport," by selling the right for operation of Kansai International Airport and Itami Airport for an amount greater than the reference price, as well as responding to the strong aviation demand in the Kansai Region.

7. Management of transport -inherent risks

[Demand Risk]

- Kansai International Airport and Itami Airport are to be operated by a private operator utilizing user fees. Demand risk will be carried by the private operator. It will reduce the demand risk by promoting commercial routes by low cost airlines, as New Kansai International Airport Co. has announced, and by transforming itself into a cargo hub for FedEx in the North Pacific region, thus increasing the number of users and volume of cargo handled.

2 -6. Korea

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Incheon Bridge	BOT
2	Land transportation (rail)	● Subway line 9 (Phase 1)	BOT

(2) Cases

1. Basic information

1 -1. Economy	● Republic of Korea
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Incheon Bridge
1 -4. Major implementer	● MOLIT ● Incheon Bridge Corporation (IBC)
1 -5. Site	● Connecting Incheon International Airport and Songdo
1 -6. Period	● 2005 - 2039
1 -7. Total cost	● 1,520 billion won (approximately US$16 million)
1 -8. Form	● BOT

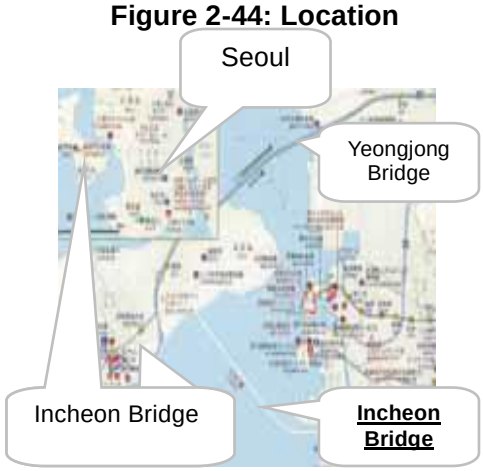
2. Summary

● The project to build and operate Incheon Bridge from 2005 through 2039 is a PPP project with MOLIT providing generous governmental support and IBC implementing it. It is to increase the number of access roads to Incheon International Airport and to improve access to Songdo.
● In 2013, the operation was profitable. However, toll revenue has been less than estimated. MOLIT guarantees the minimum revenue for IBC.

3. Background and purposes

● Prior to the Incheon Bridge project, the Yeongjong Bridge was the only access road to Incheon International Airport. With the increase in passengers and cargo using Incheon International Airport, traffic congestion on the Yeongjong Bridge became serious. In addition, the Songdo International Business District was established. MOLIT determined that Incheon Bridge should be a build -operate PPP to contribute to increasing the number of access roads to Incheon International Airport and to improve the accessibility of Songdo. (**Figure 2-44**)

Figure 2-44: Location

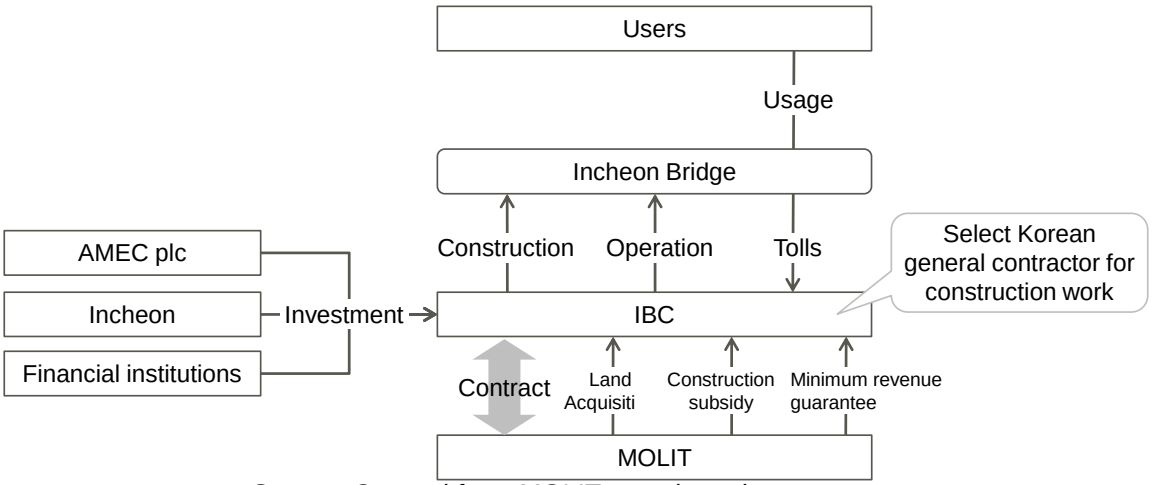


Source : Created from IBC

4. Contents of implementation (development and role divisions)

● The cost of the Incheon Bridge build -operate PPP is 1,520 billion won (approximately US$16 million US). IBC is the special purpose company (SPC) created with investment by the multinational urban development company AMEC plc of the UK, along with the Incheon City and financial institutions. IBC built the bridge with a total length of 21.4 km from 2005 to 2009 (**Figure 2-45**). IBC selected a Korean general contractor to build the bridge. MOLIT provided the land and subsidies for the bridge.
● IBC is operating the bridge from 2009 through 2039. It collects tolls to pay for operation and maintenance. MOLIT guarantees the minimum bridge revenue. When toll revenue falls below 80% of the estimated amount, MOLIT covers the difference.

Figure 2-45: Project scheme of Incheon Bridge Build -Operate PPP Project



Source: Created from MOLIT questionnaire responses

5. Government support

- For the Incheon Bridge build -operate PPP project, MOLIT provided the subsidy to reduce the burden of construction costs. It also guaranteed the minimum revenue so that construction and operation of Incheon Bridge would be financially solid. In Korea, the practice of giving PPP projects minimum revenue guarantees fell out of favor in 2006 after it was criticized as giving special treatment to private corporations. MOLIT secured the land and provided it to IBC for the Incheon Bridge build -operate PPP project.
- MOLIT gave generous support of 733.5 billion won, which was nearly half of the total cost (48.3%) for the Incheon Bridge build -operate PPP project as a subsidy for construction cost. MOLIT also provided a guarantee of minimum revenue and acquired the land.

6. Outcome (usage, achievement of the purposes and business situation)

- The number of vehicles using Incheon Bridge in 2013 was 30,993 per day. Fee income was 77.3 billion won (US$814 million); expense was 43.7 billion won (US$498 million). While Incheon Bridge operated profitably, usage was lower than estimated. With this, MOLIT has provided IBC 13.8 billion won (US$145 million) as a minimum revenue guarantee payment.

7. Management of transport -inherent risks

[Demand risk]

- The Incheon Bridge build -operate PPP project used the minimum revenue guarantee for toll revenue that fell below 80% of the initial estimate. MOLIT Korea paid the difference to IBC, reducing IBC's demand risk.

[Investment risk]

- MOLIT provided a subsidy for construction of the costly Incheon Bridge, reducing IBC's investment risk.

[Land acquisition risk]

- MOLIT acquired land for the Incheon Bridge build -operate PPP project, avoiding acquisition risk for IBC.

1. Basic information

1 -1. Economy	● Republic of Korea
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Subway line 9 (Phase 1)
1 -4. Major implementer	● Seoul City ● Seoul Metro Line9 Corporation
1 -5. Site	● Between Gaewha and Sinnonhyeon
1 -6. Period	● 2005 to 2039
1 -7. Total cost	● US$2.42 billion
1 -8. Form	● BOT

2. Summary

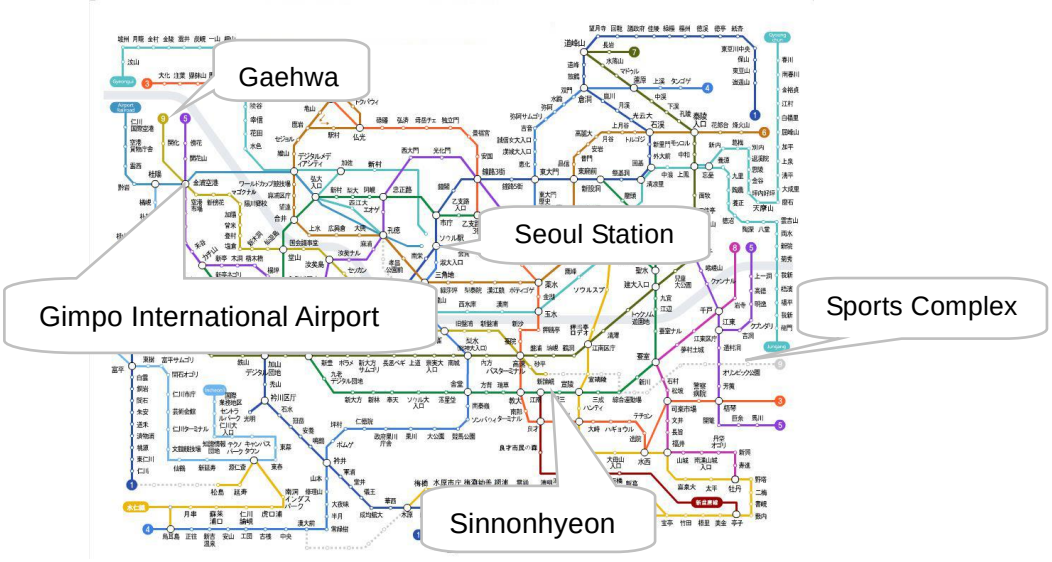
● In Seoul City, subway line 9 (Phase 1) was constructed as a BOT PPP project from 2005 to 2009. Implementation was by IBC, a partnership of general contractors and financial institutions.

● Seoul City bore 80% of the total business cost including land acquisition and construction of a part of the infrastructure. The scheme of separating infrastructure and operation was used in part. The minimum revenue guarantee was introduced but has not been utilized.

3. Background and purposes

● The Gangnam District has been developed in the eastern part of Seoul City. This necessitated improving access to the western areas such as Gimpo International Airport. Subway line 9 (phase 1) connecting Gaewha near Gimpo International Airport and Sinnonhyeon near Gangnam is a BOT PPP project for the period from 2005 to 2039. It began operating in 2009 (**Figure 2-46**). This was the first rail transport -sector PPP project in the Republic of Korea. In Seoul City, phase 2 was implemented to extend subway line 9 eastward to the Sports Complex. It opened in March 2015.

Figure 2-46: Seoul City subway map (line 9 phase 1 in gold)

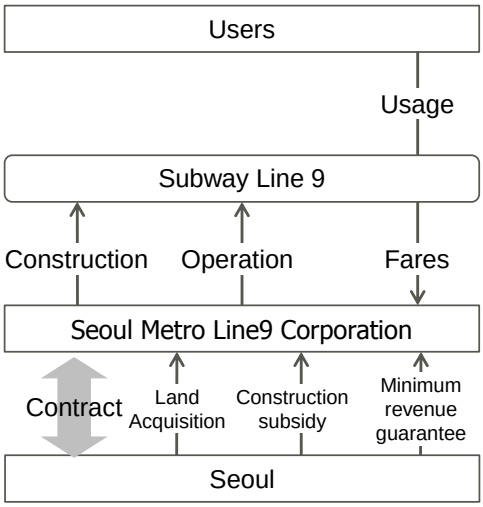


Source：Seoul City

4. Contents of implementation (development and role divisions)

- This is a BOT PPP project of 25.5km with 25 stations and one switchyard, implemented by the Seoul Metro Line9 Corporation. This special purpose company (SPC) was established by Korean general contractors and financial institutions. Consultation was provided by Veolia Transport Company of France, which has rich experience in rail transport sector PPP projects.
- Total cost was US$2.42 billion, US$1.92 billion of which was provided by Seoul for land acquisition and preparation and switchyard construction (**Figure 2-47**). Seoul Metro Line9 Corporation spent US$500 million to construct stations and railways from 2005 to 2009 with the subsidy provided by Seoul City. It will operate the line until 2039. Seoul City guarantees that when revenue drops below 80% of the estimate, the difference will be paid under the minimum revenue guarantee.

Figure 2-47: PPP BOT project scheme subway line 9, phase 1



Source: Information from PIMAC

5. Government support

- The scheme of separating infrastructure and operation was partially used. Seoul City paid 80% of the total project cost in the subway line 9, phase 1 BOT PPP project. The city acquired the land and built a part of the infrastructure. The Seoul Metro Line9 Corporation constructed the rest of the infrastructure and operates the line.
- The scheme of the minimum revenue guarantee is used to secure the revenue for Seoul Metro Line9 Corporation. In Korea, the practice of giving PPP projects minimum revenue guarantees fell out of favor in 2006 after it was criticized as giving special treatment to private corporations.

6. Outcome (revenue, achievement of the purposes and business situation)

- The minimum revenue guarantee scheme has not been needed, due to the line having enough ridership by improving passenger convenience, creating the express train for the first time on Korean subways and making ticket purchases available in the retail stores.

7. Management of transport -inherent risks

[Demand risk]

- The scheme of minimum revenue guarantee was included in the subway line 9 phase1 BOT PPP project. If revenue drops below 80% of the estimate, the difference will be paid, thus reducing demand risk for Seoul Metro Line9 Corporation. However, since it has remained above this line, the minimum revenue guarantee program had not been utilized.

[Investment risk]

- Seoul City has provided the construction subsidy to Seoul Metro Line9 Corporation for the costly construction of subway line 9 phase 1. This reduced the company's investment risk.

[Land acquisition risk]

- Seoul City provided the land for the subway line 9 phase 1 BOT PPP project, thus avoiding the land acquisition risk for Seoul Metro Line9 Corporation.

2 -7. Malaysia

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Kajang -Seremban Highway	BOT
2	Land transportation (rail)	● STAR LRT	Operation (currently)
3	Land transportation (rail)	● KLIA Ekspres	BOT
4	Air transportation	● KLIA2	BOT

(2) Cases

1. Basic information

1 -1. Economy	● Malaysia
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Kajang -Seremban Highway
1 -4. Major implementer	● MHA, LEKAS
1 -5. Site	● Kajang -Seremban
1 -6. Period	● Since 2010
1 -7. Total cost	● 1.8 billion ringgit (US$576 million)
1 -8. Form	● BOT

2. Summary

- Toll highway of 44km connecting Seremban and Kajang in the area south of Kuala Lumpur
- KASEH was the first contractor. It fell into financial problems, which led to a five -year delay in the construction. The new company, LEKAS, a 50:50 joint venture between IJM Corporation and KASEH, became the new contractor to restart the construction.
- Currently, all sections are operating.

3. Background and purposes

- The Kajang -Seremban Highway runs southeast of Kuala Lumpur. It connects Seremban, the capital of Negeri Sembilan, and Kajang of Selangor with 3 lanes each side over the total distance of 44.3km.
- The Kajang -Seremban Highway was built with the aim of mitigating congestion on the commute in and out of Kuala Lumpur and in the city centers of Kajang and Seremban. This PPP project was planned and built with the objective of becoming a less expensive bypass route to the existing South -North Highway toll road. It opened one section at a time and became fully operational in 2010.

4. Content of implementation (development and role divisions) and outcome

- In 1997, the Malaysian government approved the Kajang -Seremban Highway construction and operation PPP project. The contract concluded between MHA and KASEH assigned to KASEH the construction and operation of the Kajang -Seremban Highway. In 2002, construction commenced (**Figure 2-48**). However, KASEH's financial status deteriorated and it was unable to pay the large construction cost; therefore construction was delayed for over 5 years.

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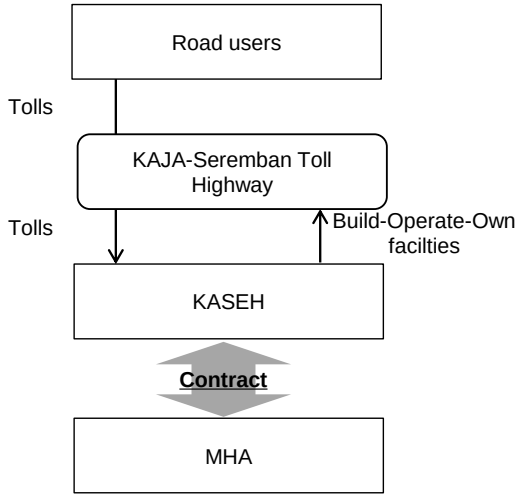
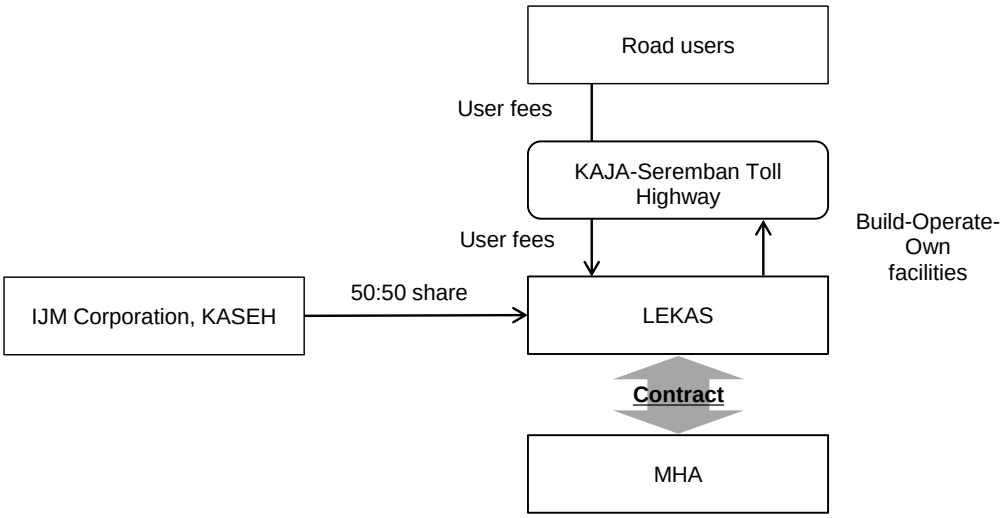
Figure 2-48: Kajang -Seremban Highway PPP project scheme (initial)



Source: LEKAS

● In 2006, IJM Corporation and KASEH created LEKAS, a 50:50 joint venture. LEKAS concluded the new contract with MHA to restart the project (**Figure 2-49**). The cost of the project was US$576 million.

Figure 2-49: Kajang -Seremban Highway PPP project scheme (current)



Source: LEKAS

● Traffic volume immediately after the opening was small (70,000 to 80,000 vehicles per day). But development and growth in the areas surrounding the Kajang -Seremban Highway are gradually increasing.

5. Government support

● With the financial problems of KASEH, a first contractor, MHA reviewed the contract of the Kajang -Seremban Highway PPP project and changed its scheme. Under the current scheme, traffic volume of the Kajang -Seremban Highway PPP project increases with larger income.

6. Outcome (usage, achievement of the purposes and business situation)

● The Kajang -Seremban Highway PPP project facilitate smooth traffic around Kuala Lumpur and reduce traffic congestion.

7. Management of transport -inherent risks

[Demand risk]

● Demand risk is surfacing as the number of users immediately after the opening of the road was lower than estimated in the Kajang -Seremban Highway PPP project.

[Investment risk]

● The financial status of the initial contractor KASEH became worse due to the large construction cost for the Kajang -Seremban Highway PPP project. The construction completion was delayed.

1. Basic information

1 -1. Economy	● Malaysia
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● STAR LRT
1 -4. Major implementer	● MOT, STAR Consortium, Prasarana, RapidKL
1 -5. Site	● Kuala Lumpur
1 -6. Period	● Since 1996
1 -7. Total cost	● US$900 million
1 -8. Form	● Operation (currently)

2. Summary

- The first LRT to open in Kuala Lumpur.
- Star Consortium, the joint venture of MOT and two private corporations, had a build -own -operate contract for 60 years. The number of passengers did not increase as forecast. Star Consortium was unable to pay its debt. Currently, Prasarana owns the assets. The subsidiary of Prasarana, RapidKL does the operation of the line.

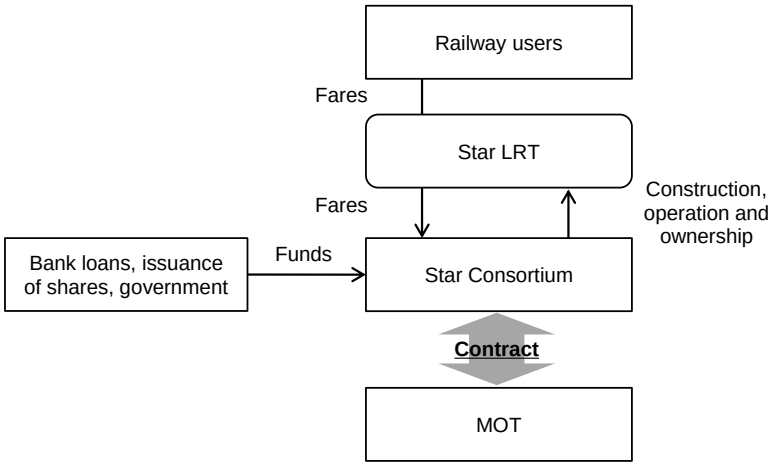
3. Background and purposes

- STAR LRT was the first LRT to open in 1996 in Kuala Lumpur. Total distance is 27km.
- STAR LRT was planned as way of alleviating chronic road congestion on the route to Kuala Lumpur International Airport.
- In addition, in 1998, economies and regions of the British Commonwealth held a sports competition, the Commonwealth Games, in Kuala Lumpur. The transport needs of the athletes, spectators and visitors were studied. MOT decided to do the STAR LRT construction and operation as a PPP project.

4. Content of implementation (development and role divisions)

- STAR Consortium proposed the PPP project of STAR LRT. The Consortium consisted of Taylor Woodrow, a United Kingdom corporation and its largest shareholder, and the Adtranz Company. In 1995, MOT contracted with STAR Consortium with the condition that the private company would retain ownership during the construction and post -construction periods. The consortium will perform construction and operation for 60 years and receive US$900 million (**Figure 2-50**). STAR Consortium obtained 60% of the construction cost through bank loans, 24% through stock issuance, and 16% from a Malaysian government loan.

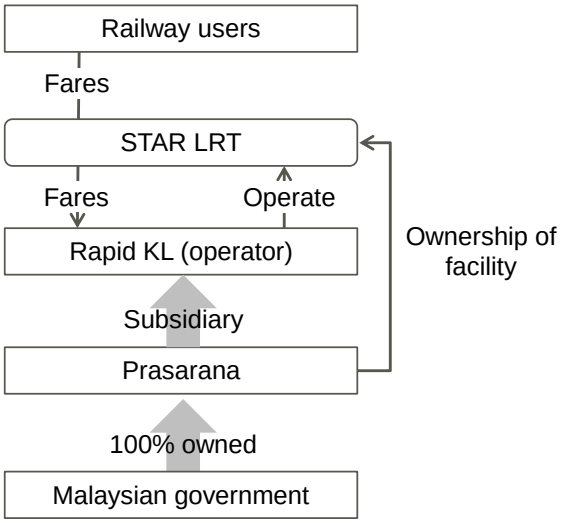
Figure 2-50: STAR LRT PPP project scheme (STAR Consortium before the bankruptcy)



Source: Rapid KL

● STAR LRT was partially opened in 1996 and fully opened in 1998. However, the economic recession in Malaysia triggered by the 1997 Asian currency crisis influenced the number of passengers. Ridership and fare revenue did not reach the forecast, and the STAR Consortium defaulted on its debt, canceling the contract in the middle. The STAR LRT project and ownership of the related facilities were handed over from the STAR Consortium to the State -owned Prasarana through legal proceedings by the Malaysian government in 2002. The debt was US$1.61 billion at the time. Prasarana issued a bond to pay off the debt. Currently, the operation is carried out by Rapid KL, a subsidiary of Prasarana (**Figure 2-51**).

Figure 2-51: STAR LRT PPP project scheme (current)



Source: Rapid KL

5. Government support

● Currently, the operation of STAR LRT is carried out by Rapid KL, a subsidiary of Prasarana.

6. Outcome (usage, achievement of the purposes and business situation)

● With the financial problems of STAR Consortium, Malaysian government reviewed the contract of STAR LRT and changed its scheme. Under the current scheme, PRASARANA, which is owned by Malaysian government, owns facilities of STAR LRT and subsidize Rapid KL.

7. Management of transport -inherent risks

[Demand risk]

● Ridership was lower than forecast, due in part by the Asian currency crisis, and demand risk became actualized.

[Investment risk]

● Ridership was lower than forecast. The fare revenue was insufficient for the STAR LRT PPP project. The construction cost became too burdensome; therefore, the financial status deteriorated and led to bankruptcy. The project was transferred to Prasarana.

1. Basic information

1 -1. Economy	● Malaysia
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● KLIA Ekspres
1 -4. Major implementer	● MOT, ERLSB, E -MAS
1 -5. Site	● Kuala Lumpur International Airport - Kuala Lumpur
1 -6. Period	● Since 2002
1 -7. Total cost	● 2.4 billion ringgit (US$768 million)
1 -8. Form	● BOT

2. Summary

- KLIA Ekspres was planned to be constructed in tandem with the airport construction. It will be the fastest transport mode connecting Kuala Lumpur International Airport and the city. It opened one year after the airport opening.
- ERLSB, the joint venture of 3 companies, has concluded the contract. Its 100% subsidiary, E -MAS, does only operation and maintenance. The experienced staff with know -how has remained in this subsidiary.

3. Background and purposes

- KLIA Ekspres is the railway connecting Kuala Lumpur International Airport with Kuala Lumpur. It has been in operation since 2002.
- It takes 28 minutes to get from Kuala Lumpur International Airport to Kuala Lumpur Central Station. It is the fastest transport mode from the airport (**Figure 2-52**).
- KLIA Ekspres was planned before the opening of Kuala Lumpur International Airport in 1998 as the smooth way to get to and from the airport in Kuala Lumpur, where chronic traffic congestion has been a problem. It was decided to be implemented as a PPP project. In 2014 KLIA2, the new airport terminal dedicated for low -cost carriers (LCCs), opened and the railway was extended to KLIA2.

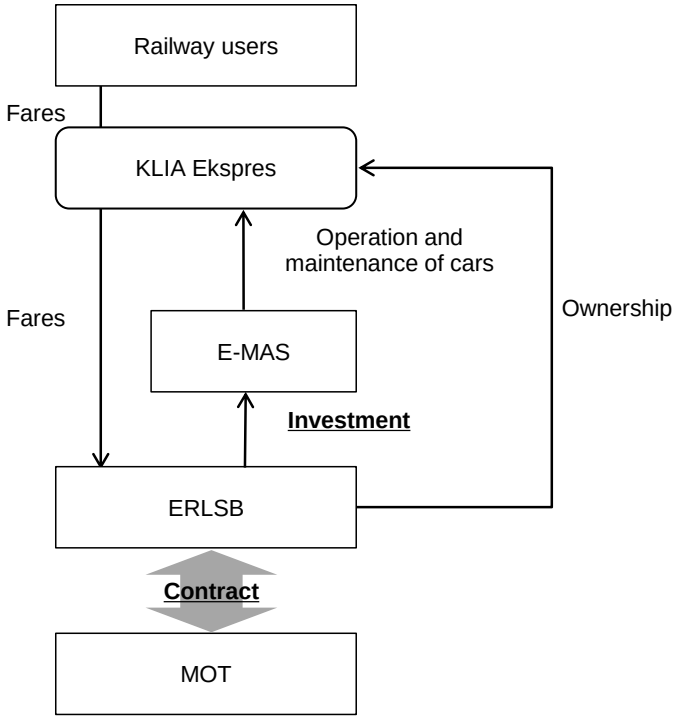
Figure 2-52: KLIA Ekspres route

Source: Tourism Malaysia

4. Content of implementation (development and role divisions)

- E -MAS, the subsidiary of ERSLB, carries out only the train construction and operation to maximize efficiency and specialized expertise. At the opening, shares of E -MAS were 51% owned by Siemens and 48% by ERLSB. In 2005, ERLSB took 100% ownership, keeping all of the employees. KLIA Ekspres transported 400,000 passengers in its first 10 years. It is the fastest train in the Southeast Asian region and has a 99.7% on -time operating record over 10 years. It was named the North Star AirRail Link of the Year at the Global AirRail Awards 2012.

Figure 2-53: KLIA Ekspres PPP project scheme



Source: KLIA Ekspres:

5. Government support

- Malaysian government has developed Kuala Lumpur International Airport with large number of passengers which brings secure traffic demand to KLIA Ekspres.

6. Outcome (usage, achievement of the purposes and business situation)

- With KLIA Ekspres, heavy traffic has been loosened and traffic congestion has been reduced.

7. Management of transport -inherent risks

[Demand risk]

- Kuala Lumpur International Airport has many users. KLIA Ekspres is the fastest transportation means and is highly convenient. Many passengers use it; therefore, the demand risk would appear to be minimal.

1. Basic information

1 -1. Economy	● Malaysia
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● KLIA2
1 -4. Major implementer	● MOT, MAHB
1 -5. Site	● Kuala Lumpur International Airport
1 -6. Period	● Since 2014
1 -7. Total cost	● 4 billion ringgit(US$1.28 billion)
1 -8. Form	● BOT

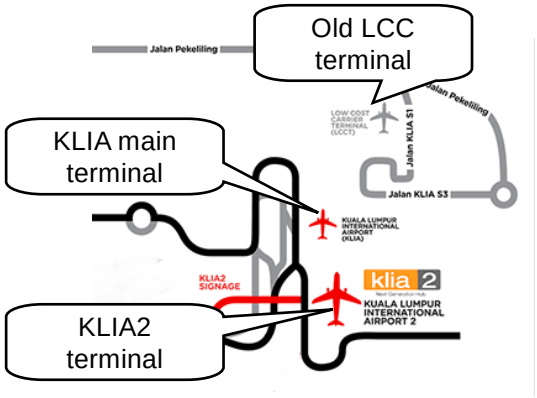
2. Summary

- With the background of fast growth of low -cost carriers (LCCs) whose intention is to get airport usage fees, the new KLIA2 terminal dedicated for LCCs was built at Kuala Lumpur International Airport.
- MAHB, which operates Kuala Lumpur International Airport, used sukuk finance, and has built and operated the terminal.
- KLIA2 is currently in service.

3. Background and purposes

- Air Asia group, an exemplary Asian LCC, is based at Kuala Lumpur International Airport (KLIA). Recently, it has begun growing rapidly. In 2013, Air Asia Group passengers have been about 38% of the international users of Kuala Lumpur International Airport. With the background of the global rise of LCCs such as Air Asia Group and the economic growth of Malaysia, the number of users of KLIA and especially the number of LCC passengers have been increasing.
- LCC companies have the goal of reducing costs, including airport usage fees, to keep fares low. The need for a LCC -dedicated terminal was apparent. In 2006, a temporary LCC -dedicated terminal was built alongside the existing KLIA main terminal. But in 2014, the permanent LCC -dedicated terminal KLIA2 was built and opened about 2km from KLIA (**Figure 2-54**).

Figure 2-54: KLIA2 location



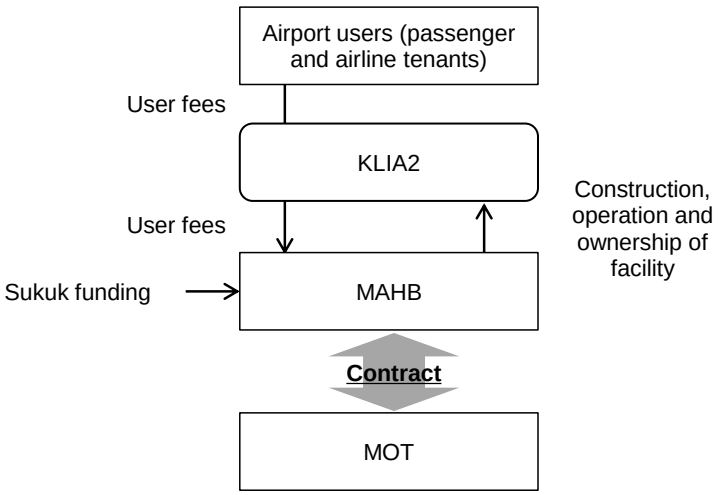
Source: Air Asia

- Construction and operation of KLIA2 was carried out as PPP project by MAHB which is the operating company for the project by MOT and Kuala Lumpur International Airport.

4. Content of implementation (development and role divisions)

- MOT and MAHB concluded a contract whereby MAHB does construction and operation of KLIA2 and has ownership of the facility. MAHB is the first Asian company and the sixth in the world to go public on the Malaysian Stock Exchange. MAHB operates 5 international airports, 16 domestic airports and 18 small airports.
- The project cost for KLIA2 (about US$1.28 billion) was funded by sukuk (financial products similar to bonds with investment yields based on the Islamic law prohibiting charging of interest) (**Figure 2-55**).

Figure 2-55: KLIA2 PPP project scheme



Source: MAHB

5. Government support

- None.

6. Outcome (usage, achievement of the purposes and business situation)

- There were 79.6 million people using KLIA's main terminal in 2013, including international, domestic and transit passengers. With KLIA2 added to Kuala Lumpur International Airport, capacity is now an additional 45 million users annually.

7. Management of transport -inherent risks

[Demand risk]

- The number of passengers and LCC companies such as Air Asia Group in KLIA2 is forecast to increase. So transportation volume seems to be large and demand risk would appear to be minimal.

2 -8. Mexico

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (rail)	● Suburban Train Mexico City - Toluca	BOT
2	Maritime transportation	● Veracruz Port	BOT
3	Air transportation	● New Mexico City International Airport	-

(2) Cases

1. Basic information	
1 -1. Economy	● Mexico
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Suburban Train Mexico City - Toluca
1 -4. Major implementer	● SCT
1 -5. Site	● Between Mexico City and Toluca
1 -6. Period	● From 2014
1 -7. Total cost	● Construction cost: 42.722 billion pesos (US$2.654 billion)
1 -8. Form	● BOT

2. Summary

- The initial policy of President Enrique Peña Nieto listed the construction and operation of the high -speed railway between Mexico City and Toluca. SCT implemented it as a PPP project using capital from the public and private sectors.
- For the PPP project to build and operate the high -speed railway between Mexico City and Toluca, SCT and the SCHP will pay for civil engineering work, and a private company will construct station buildings, purchase railcars and operate the railway. It is necessary to manage land acquisition risk and the response to geological issues. The internal rate of return is high at 13.19%.

3. Background and purposes

- President Enrique Peña Nieto was sworn in in 2012. The basic policy of the new government listed solutions for public safety, eradication of poverty and economic disparities, economic growth, and an active foreign policy. It also lists 13 initiatives to promote this basic policy. Within those concrete initiatives, railway construction is described in the economic policy area. Six lines including the high -speed railway between Mexico City and Toluca are listed (**Figure 2-56**). SCT is planning to construct and operate the high -speed rail between Mexico City and Toluca as a PPP project using the capital from the public and private sectors.

Figure 2-56: High -speed railway between Mexico City and Toluca map (planned)

Source: SCT

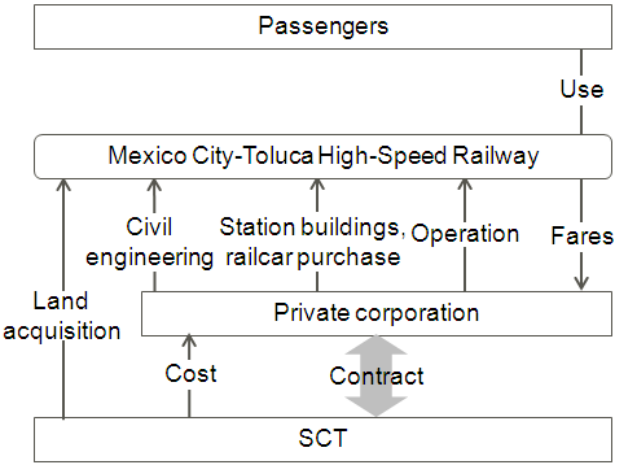
4. Contents of implementation (development and role divisions)

- The high -speed railway between Mexico City and Toluca is about 58km in length. The construction cost is 42.722 billion pesos (US$2.654 billion). The PPP project to build and operate the high -speed railway between Mexico City and Toluca was proposed by SCT to

SCHP to secure the capital by use of public funding, and is now under discussion. In the future, a private company will be selected. SCT and SCHP will pay the cost of civil engineering, and the private company will build railway stations, purchase railcars and operate the line (**Figure 2-57**). The plan is to begin operations in 2018.

- The land acquisition is to be done by SCT. SCT is aware of the necessity to acquire the land carefully so that residents do not oppose the plan. There are also geological issues. SCT is cognizant of the need for appropriate engineering technology in the construction.

Figure 2-57: PPP project scheme to build and operate the high -speed railway between Mexico City and Toluca



Source: Based on SCT information

5. Government support

- For the PPP project scheme to build and operate the high -speed railway between Mexico City and Toluca, SCT and SCHP pay for the civil engineering cost, and SCT acquires the necessary land.

6. Outcome (usage, achievement of the purposes and business situation)

- Daily ridership on the high -speed railway between Mexico City and Toluca is estimated at 230,000. With such a high volume, the modal shift from automobile will be promoted. The daily automobile traffic will be reduced by 200,000 vehicles. With less traffic congestion, fewer CO_2 emissions are expected.
- The internal rate of return for the PPP project scheme to build and operate the high -speed railway between Mexico City and Toluca is estimated at 13.19%. It is above the target 8% for PPP projects in general. The prospect is for it to be implemented in a stable fashion by securing the revenue.

7. Management of transport -inherent risks

[Land acquisition risk]

- For the PPP project scheme to build and operate the high -speed railway between Mexico City and Toluca, SCT is cognizant of the land acquisition risk and is trying to reduce it by planning to acquire the land in a careful fashion.

1. Basic information

1 -1. Economy	● Mexico
1 -2. Transportation mode	● Maritime transportation
1 -3. Project name	● Veracruz Port
1 -4. Major implementer	● Port Authority
1 -5. Site	● Veracruz
1 -6. Period	● From 2013
1 -7. Total cost	● 298 million pesos (about US $19 million)
1 -8. Form	● BOT

2. Summary

- The Port Authority has begun examining the possibility of extending Veracruz Port as a build - operate PPP project from 2013 to reduce the financial burden.
- 70% of the project cost is to be paid by the Port Authority. A private corporation is to pay the remaining 30%, to be paid back from collection of user fees.

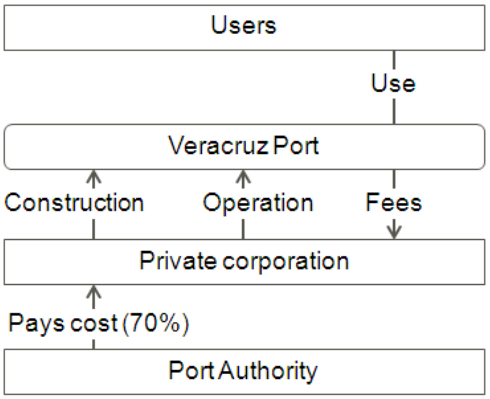
3. Background and purposes

- Veracruz Port is on the Atlantic Ocean side and is an important trading port with the east coasts of the United States of America and South American economies, as well as Europe and Africa. As the cargo handling volume increases, the extension of Veracruz Port along the northern coastal area was discussed. However, the financial situation in Mexico deteriorated due to the recent drop in oil prices. To reduce its financial burden, the Port Authority started to examine the possibility of implementing the extension as a PPP project for a private corporation to build and operate Veracruz Port.

4. Contents of implementation (development and role divisions)

- The cost of the Veracruz Port build - operate PPP project is 298 million pesos (about US $19 million). The Port Authority will pay 70% (209 million pesos, about US $13 million), and a private corporation will pay 30% (89 million pesos, about US $6 million) (**Figure 2-79**). The implementing private corporation will construct basic port facilities and pay for this by collecting user fees in the operation of the port.

Figure 2-58: Veracruz Port build - operate PPP project scheme



Source: Based on SCT material

5. Government support

- For the Veracruz Port build - operate PPP port extension project, the Port Authority will pay 70% of the project cost (209 million pesos, about US $13 million).

6. Outcome (usage, achievement of the purposes and business situation)

- The Veracruz Port extension will be operated by a private corporation utilizing its know -how to implement it efficiently. It is expected that trade will be stimulated as many more ships will be able to call on this port on their way to or from the Panama Canal. This will lead to an increase in cargo handling.

7. Management of transport -inherent risks

[Investment risk]

- By The Port Authority paying 70% of the project cost of the Veracruz Port extension PPP project (209 million pesos, about US $13 million), the private corporation can reduce the amount of cost to cover, so that investment risk can be reduced.

1. Basic information

1 -1. Economy	● Mexico
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● New Mexico City International Airport
1 -4. Major implementer	● Airport Group of Mexico City (GACM)
1 -5. Site	● Mexico City
1 -6. Period	● From 2014
1 -7. Total cost	● 169 billion pesos (about US $10 billion)
1 -8. Form	-

2. Summary

● Mexico City International Airport has become overcrowded. The Secretariat of Communications and Transportation (SCT) is promoting a PPP project to build and operate a New Mexico City International Airport by Airport Group of Mexico City (GACM). It is planned to open in 2020 with a forecast usage of 50 million passengers per year.

3. Background and purposes

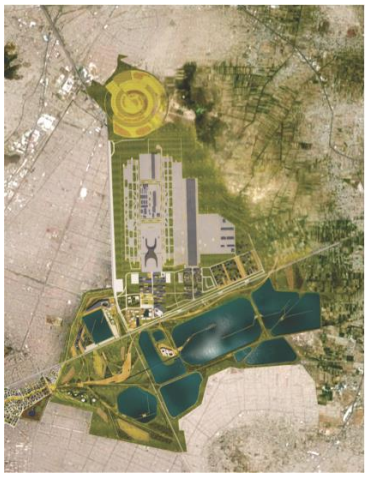
● The current Mexico City International Airport has become overcrowded as the usage has increased. SCT is examining the possibility of implementing a PPP project to build and operate a New Mexico City International Airport by GACM, the state company that operates the current airport. The plan is to open it in 2020.

4. Contents of implementation (development and role divisions)

● The cost of the PPP project to build and operate the New Mexico City International Airport is 169 billion pesos (about US $10 billion). SCT will pay the construction cost (58% of the total, 98 billion pesos, about US $6 billion) of the cost. GACM will pay the operation cost (42%, $71 billion pesos, about US $4 billion). GACM will receive user fees to offset the cost.

● The form of the PPP project to build and operate the New Mexico City International Airport is not yet decided. Currently, SCT is proposing to the Secretariat of Finance and Public Credit (SHCP) to secure the capital from public funds. The land planned for the New Mexico City International Airport is publicly owned. Therefore, there is no land acquisition risk, but there are geological issues. SCT is cognizant of the need for appropriate engineering technology for this program.

Figure 2-59: New Mexico City International Airport



Source：SCT

5. Government support

● For the PPP project to build and operate the New Mexico City International Airport, SCT is to pay for the construction cost, which is 58% of the entire project cost (98 billion pesos, about US $6 billion).

6. Outcome (usage, achievement of the purposes and business situation)

● If the New Mexico City International Airport is built, many passengers will use it and there can be

an increase in cargo handling. The planned opening of the airport is in 2020, and the forecast annual numbers of users of the airport is 50 million. As many people will use the New Mexico City International Airport and there will be a large volume of cargo handling, it is expected that logistics will become stimulated and will promote the economic growth.

7. Management of transport -inherent risks

[Investment risk]

- For the PPP project to build and operate the New Mexico City International Airport, SCT will pay 58% of the project cost (98 billion pesos, about US $6 billion). This makes it possible for GACM to reduce the investment risk as the payment for construction will be greatly reduced.

2 -9. New Zealand

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Transmission Gully (Highway)	BOT

(2) Cases

1. Basic information

1 -1. Economy	● New Zealand
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Transmission Gully (Highway)
1 -4. Major implementer	● NZTA ● Wellington Gateway Partnership
1 -5. Site	● Wellington region
1 -6. Period	● Construction started in the third quarter of 2014 ● The road is expected to be open for traffic in 2020
1 -7. Total cost	● NZ$850 million
1 -8. Form	● BOT

2. Summary

● The Transmission Gully project is the first transport PPP project in New Zealand. The project is a 27 -km four -lane (two in each direction) motorway from MacKays to Linden in the Wellington region, offering one possible part of a package of rail and road options that are intended to address congestion, traffic flow and road safety.

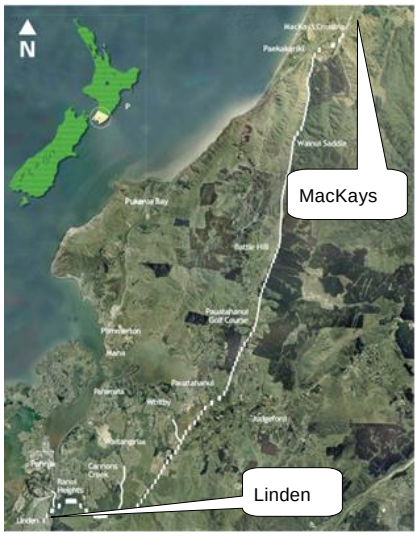
● The project had the size and complexity which made it a good candidate for a PPP. It has met the New Zealand Government's value -for -money criteria, and offered opportunities for private sector innovations in design, construction, maintenance, and operation that NZTA can apply across the wider transport network. Specifically, this project has a number of structures and geotechnical challenges where private sector innovation can drive greater value for money than is possible by traditional public sector procurement.

3. Background and purposes

● The 27 -km Transmission Gully highway is one of six projects that form the Wellington Northern Corridor, the 110 -km route from Levin to Wellington Airport that is being upgraded to provide economic growth benefits, improved road safety and reduced traffic congestion.

● There has been discussion for many years on building an alternative highway to the coastal route (State Highway 1) which is narrow in places and becomes congested during peak hours. An alignment for the Gully route was originally designed in 1996 and land was designated in local plans in 2004.

● Financing and building Transmission Gully highway as a PPP has allowed the NZTA to move ahead with certainty to begin construction in 2014 and open the road by 2020, thus delivering the economic, travel and safety benefits to New Zealanders sooner. The project will cost NZ $25 million less than if the project was procured through conventional means.



Source: New Zealand Transport Agency

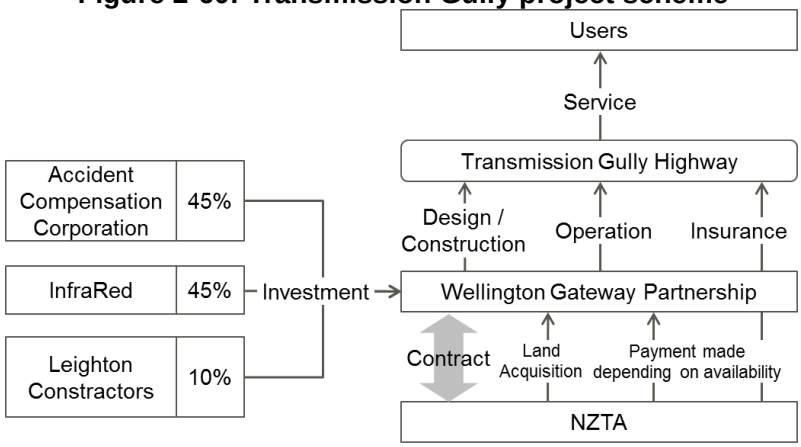
4. Content of implementation (development and role divisions)

● NZTA, as the road controlling authority for New Zealand's state highways, manages the development of the project. Under the terms of the PPP contract signed in July 2014, the Wellington Gateway Partnership will design, construct, finance, operate and maintain the new Transmission Gully motorway for the 25 years that will follow the expected five -year period to build the motorway. It is aimed to have the motorway open for traffic by 2020.

● Full ownership of the public infrastructure remains with the public sector.

● The potential for tolling the Transmission Gully motorway to offset some of the cost of the project has previously been signalled. However this is being treated as separate to the PPP project and no decision has yet been made in this regard.

Figure 2-60: Transmission Gully project scheme



Source: Created based on interview to NZTA

5. Government support

● NZTA provides the Transmission Gully project with self -insurance in case of natural disasters.

6. Outcome (usage, achievement of the purposes and business situation)

● The Transmission Gully project will provide:
- An alternative and resilient transport corridor to and from Wellington
- Reduction of travel time, variability and congestion for motorists on State highway 1 and the existing coastal Route.
- Shorten peak journeys by 7 -15 minutes and provide two lanes in each direction.
- Improvement of accessibility and safety for all transport users.
- Economic development within the region and nationally.

7. Management of transport -inherent risks

[Demand risk]

● Using the availability payment system is being studied for the Transmission Gully project, whereby the private company can avoid the demand risk, as NZTA will pay the cost of appropriately maintaining the road.

[Operating risk]

● Providing self -insurance of NZTA for natural disasters, Wellington Gateway Partnership can compensate the damage of natural disasters during the period, which leads to reduction of operating risk.

[Investment Risk]

● NZTA has documented policies and procedures on scope change. These changes will be adhered to during the delivery of the project with escalation to the appropriate scope committees as required to ensure that any initiated scope change is given full value -for -money consideration.

● Cost management policies are well documented within the New Zealand Transport Agency. These would be adhered to with invoice certification against agreed contract budgets and deliverables undertaken by the New Zealand Transport Agency before payment being made assuming a traditional design and construct procurement model.

[Land acquisition risk]

● In the Transmission Gully project, the consortium may be able to avoid the land acquisition risk, as NZTA takes the responsibility for land acquisition.

2 -10. Papua New Guinea

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Air transportation	● Port Moresby International Airport (PMIA)	BTO

(2) Cases

1. Basic information	
1-1. Economy	● Papua New Guinea
1-2. Transportation mode	● Air transportation
1-3. Project name	● Port Moresby International Airport
1-4. Major implementer	● NAC, SoE
1-5. Site	● Port Moresby
1-6. Period	● 2015 - 2019
1-7. Total cost	● K$ 1.6 billion (approx.US$566million)
1-8. Form	● BTO

2. Summary

● With increase of passengers, DOT promotes redevelopment of Port Moresby International Airport as PPP project. Papua New Guinea has secured budget of Port Moresby International Airport redevelopment PPP project, and its biding was closed in June 2015.

3. Background and purposes

● With increase of passengers, DOT promotes redevelopment of Port Moresby International Airport as PPP project to reduce fiscal burden as well as to seek for effectiveness.

4. Content of implementation (development and role divisions)

● Port Moresby International Airport redevelopment PPP project covering redevelopment of runway and international terminal to smooth movements of aircrafts and passengers, is planned to be implemented from 2015 to 2019. Its procurement is under processing, and bidding was closed on June 2015.
● The cost of Port Moresby International Airport redevelopment PPP project is estimated at K1.6 billion (approx. US$566million. Financing the cost of Port Moresby International Airport redevelopment PPP project was concerned, but its budget was secured.

5. Government support

-

6. Outcome (usage, achievement of the purposes and business situation)

● With the redevelopment of Port Moresby International Airport, the airport can increase its passenger capacity from current 1 million per year to 4 million per year by 2025.

7. Management of transport-inherent risks

[Investment risk]
● It costs large amount of money to redevelop Port Moresby International Airport. The budget of Port Moresby International Airport redevelopment PPP project was secured and investment risk for NAC will be reduced.

2-11. The Philippines

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Tarlac-Pangasinan-La Union Expressway	BTO
2	Land transportation (road)	● Cavite-Laguna Expressway	BOT
3	Land transportation (rail)	● Manila LRT1 Line	BTO
4	Land transportation (rail)	● North-South Railway (South Line)	Build-Gradual Transfer-Operate and Maintain (BGTOM)/(Build Transfer-Operate and Maintain (BTOM)
5	Maritime transportation	● Davao Sasa International Port	BTO/BOT
6	Air transportation	● Laguindingan International Airport	Operate - Add - Transfer (OAT)
7	Air transportation	● Mactan-Cebu International Airport	BOT
8	Air transportation	● New Bohol Airport	Operate - Add - Transfer (OAT)

(2) Cases

1. Basic information

1 -1. Economy	● The Philippines
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Tarlac-Pangasinan-La Union Expressway
1 -4. Major implementer	● DPWH, Private Infra Development Corporation
1 -5. Site	● Tarlac-Pangasinan-La Union
1 -6. Period	● Open in July 2014
1 -7. Total cost	● NZ $426 million
1 -8. Form	● BTO

2. Summary

- The purpose of the Tarlac-Pangasinan-La Union toll road is to improve the access between Manila and northern and central Luzon, with their agricultural zones and tourist destinations.
- Having passed the planning and procurement stages, it is open in 2014.
- The first toll road PPP project in The Philippines by a group of domestic banks

3. Background and purposes

- The Tarlac-Pangasinan-La Union Expressway is a toll road with a total length of 88.95km. It runs through Tarlac, Tarlac to Pangasinan and then to Rosario, La Union, which is a city facing Lingayen Gulf at the foot of the Cordilleras Mountains in the central area of Luzon Island (**Figure 2-61**).
- The central part of Luzon Island has the tourist areas of Baguio and Banaue. It is also an agricultural -product distribution center for the northern part of Luzon Island. When one goes from Manila to central or northern Luzon, there is the Subic Clark Tarlac Highway (SCTEX) up to Tarlac which was constructed with ODA from Japan. Further north from Tarlac, there was only a local road. In addition, the road has serious traffic congestion, reflecting Manila being the most concentrated economic center in the country. DPWH is promoting the Tarlac-Pangasinan-La Union Expressway PPP project to improve the access between Manila and central and northern Luzon.

Figure 2-61: Tarlac–Pangasinan–La Union toll road (TPLEX) map

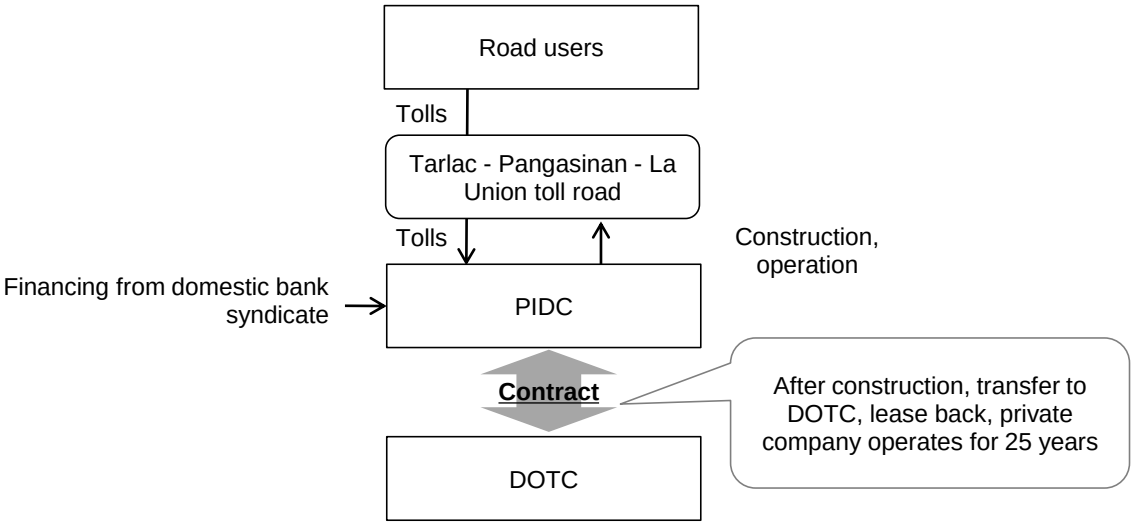
Source: DPWH

4. Content of implementation (development and role divisions)

- San Miguel Corporation of the Philippines is investing 35% in the Private Infra Development Corporation (PIDC) for the Tarlac-Pangasinan-La Union Expressway PPP project. PIDC is building the toll road. DOTC pays the cost. PIDC will transfer ownership to DOTC and lease it from DOTC to operate it for 25 years (**Figure 2-62**). The progress rate for Section 1 of the Tarlac -Pangasinan -La Union Expressway (Tarlac -Rosales) is 98.21%. It will be completed in December 2014. The progress rate for Section 2 (Urdaneta - Rosales) is 37.19%. It will be completed in December 2015. The feasibility study for Section 3 (Urdaneta - Rosario, La Union)

will be completed in May 2015. The latest, updated project cost for the Tarlac-Pangasinan-La Union Expressway is 18.128 billion pesos (NZ $426 million), which is 56.4% more than the estimated cost at the time of the bidding.

Figure 2-62: Tarlac-Pangasinan-La Union Expressway PPP project scheme



Source: PPP Center

5. Government support

- PIDC can transfer ownership of the Tarlac-Pangasinan-La Union Expressway to DOTC after construction, and receive the fees from DOTC before its operation.

6. Outcome (usage, achievement of the purposes and business situation)

- Shortening of transportation time is expected due to the Tarlac-Pangasinan-La Union Expressway completion and opening.
  - ○ Tarlac-Girona from 60 minutes to 20 minutes; 8,000 vehicles per day
  - ○ Tarlac-Paniqui from 70 minutes to 30 minutes
  - ○ Tarlac-Rosario from 3.5 hours to 1 hour; 20,000 people per day

7. Management of transport -inherent risks

[Investment risk]

- The project cost for the Tarlac-Pangasinan-La Union Expressway PPP project has increased to 1.6 times the cost estimated at the time of the award. The latest cost estimate is NZ $426 million. The degree of accuracy in estimating the road construction and the estimated cost for land acquisition were low and investment risk materialized as PIDC's payments increased.

1. Basic information

1 -1. Economy	● The Philippines
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Cavite-Laguna Expressway
1 -4. Major implementer	● DPWH
1 -5. Site	● Between Cavite and Biñan
1 -6. Period	● In process of selecting private company partner
1 -7. Total cost	● 35.4 billion pesos (US $787 million)
1 -8. Form	● BOT

2. Summary

- The industrial cities in Cavite and Biñan City are split between east and west, with no connecting expressway. DOTC is planning for the Cavite-Laguna Expressway to be built and operated by PPP. It is listed under “Projects under Procurement” in “PPPs@PH, 4th Edition.”
- DOTC is to supply 5 billion pesos to the Cavite-Laguna Expressway BTO PPP project, (Viability Gap Funding: VGF) to a private company partner.

3. Background and purposes

- Cavite and Laguna are provinces with industrial cities where manufacturers in the electronic -component, semiconductor and automotive industries are concentrated. Cavite faces the west to Manila Bay and Biñan of Laguna Province faces Laguna de Bay. The Manila -Cavite Expressway and South Luzon Expressway run north to south. However there is no highway connecting east and west. DOTC is aiming to create a Highway between Cavite and Biñan of Laguna Province with a PPP project so that it can further promote industry by activating the logistics between Cavite and Laguna (**Figure 2-63**). The BTO PPP project for the Cavite-Laguna Expressway is listed under “Projects under procurement” in “PPPs@PH, 4th Edition,” which summarizes PPP projects in the Philippines.

Figure 2-63: Cavite -Laguna Expressway

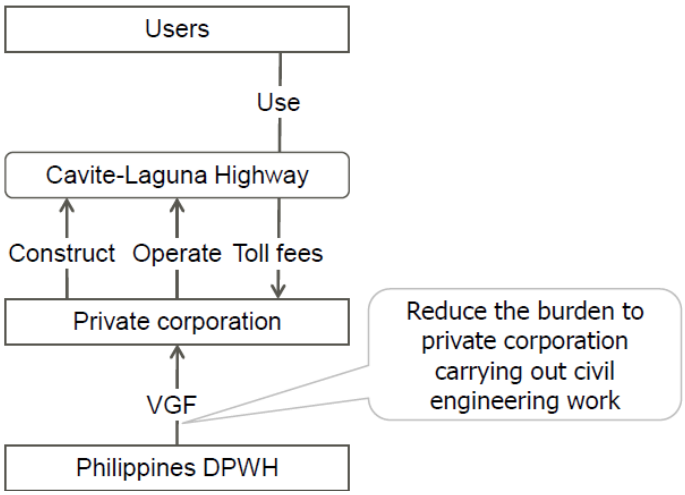
Source: DPWH

4. Contents of implementation (development and role divisions)

- The Cavite-Laguna Expressway will have 4 lanes each way for 47 km with 8 interchanges.
- The total project cost of the Cavite-Laguna Expressway BTO PPP is 35.4 billion pesos. This includes construction of toll gates and bridges. The private company will operate the Cavite-Laguna Expressway for 35 years, collecting toll fees to pay for operation, maintenance and management. DOTC is to supply 5 billion pesos (Viability Gap Funding: VGF) to the

private partner to reduce the financial burden for its cost of construction of the Cavite-Laguna Expressway.

Figure 2-64: BTO PPP project scheme for Cavite -Laguna Expressway



Source: Compiled from PPPs@PH,4th edition, PPP Center

5. Government support

- Under the build and operate Cavite-Laguna Expressway PPP project, government is giving VGF of 5 billion pesos to reduce the cost to the private partner for the Cavite-Laguna Expressway.

6. Outcome (usage, achievement of the purposes and business situation)

- The industrial cities of Cavite Province and Biñan of Laguna Province will be connected by expressway with the build and operate PPP project of the Cavite-Laguna Expressway. It is expected that that this will advance the promotion of industry as the logistics become more active.

7. Management of transport -inherent risks

[Investment risk]

- To construct the costly Cavite-Laguna Expressway, DOTC is to supply 5 billion pesos of VGF to the private partner, reducing the investment risk for the private partner.

1. Basic information

1 -1. Economy	● The Philippines
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Manila LRT1 Line
1 -4. Major implementer	● DOTC, Light Rail Transit Authority (LRTA)
1 -5. Site	● Manila
1 -6. Period	-
1 -7. Total cost	● US$153 million
1 -8. Form	● BTO

2. Summary

- The Manila LRT1 Line will be extended to the southern area of metropolitan Manila. A private company will operate and maintain the entire network including the existing routes.
- The existing Manila LRT1 Line is already in service. After construction of the southern extension is finished, ownership will be transferred to DOTC. Then, the entire line will be managed as one project.

3. Background and purposes

- Manila experiences serious traffic congestion. To mitigate the congestion, Manila is promoting the transport modal shift from vehicles to LRT, which can move many passengers. Recently, the population of Cavite Province, to the south of Manila, has been increasing, as has the need for commuting to Manila for work and school. DOTC is implementing a PPP project to extend the Manila LRT1 Line to Cavite. It is expected that traffic congestion will be mitigated and the commute between Manila and Cavite will become smoother (**Figure 2-65**).

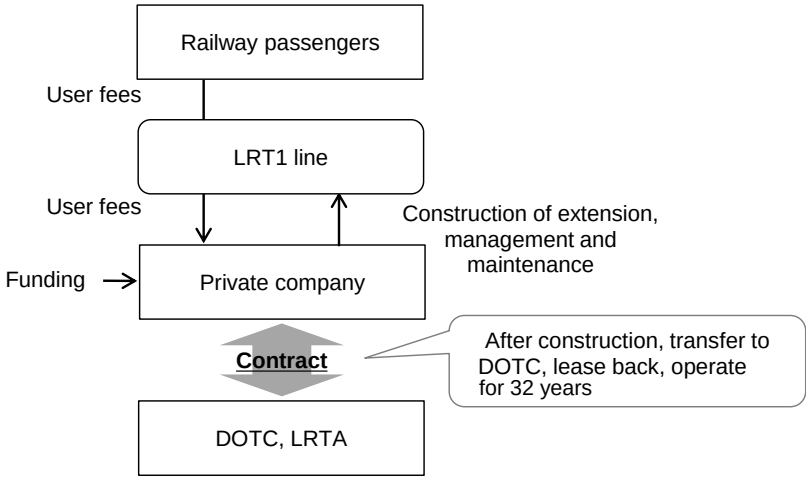
Figure 2-65: Manila LRT, MRT route map

Source: PPP Center

4. Content of implementation (development and role divisions)

- The section between the current southern terminus at Baclaran Station, and Niog Station in Bacoor City, Cavite, is 11.7km long and has 8 stations,10.5km of which are elevated and 1.2km are on the surface and cross the surface roads. Average ridership for this portion is forecast to be 745,000 in 2015 (**Figure 2-66**). Total operating length will be 32.4km, including both the existing line and the extension. The entire line will be operated and maintained by the private company. The project cost is 64.9 billion pesos (US$153 million) including the construction cost. The existing portion of Manila LRT1 Line was already improved with supplementary construction using the international yen loan. After the extension is completed, ownership will be transferred to DOTC and LRTA. Then the private company will lease the infrastructure and operate it. The contract will be for 32 years, including the period of building the extension.

Figure 2-66: Manila LRT1 Line southward extension PPP project scheme



Source: PPP Center

5. Government support

- A private company can transfer ownership of the LRT 1 line to DOTC after the construction, and receive the fees from DOTC before its operation.

6. Outcome (usage, achievement of the purposes and business situation)

- With Manila LRT1 Line, traffic congestion will be reduced through modal shift to LRT from private vehicle.

7. Management of transport -inherent risks

[Demand risk]

- The project is for the extension of the existing Manila LRT1 Line. Therefore, ridership is forecast to be more predictable than newly constructed projects.

1. Basic information

1 -1. Economy	● The Philippines
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● North-South Railway (South Line)
1 -4. Major implementer	● DOTC
1 -5. Site	● Between Tutuban and Calamba (Commuter) ● Between Tutuban and Legazpi (Long - Haul) With extensions to Batangas and Sorsogon or spur lines
1 -6. Period	-
1 -7. Total cost	● 170.7 billion pesos (US$4.03 billion)
1 -8. Form	-

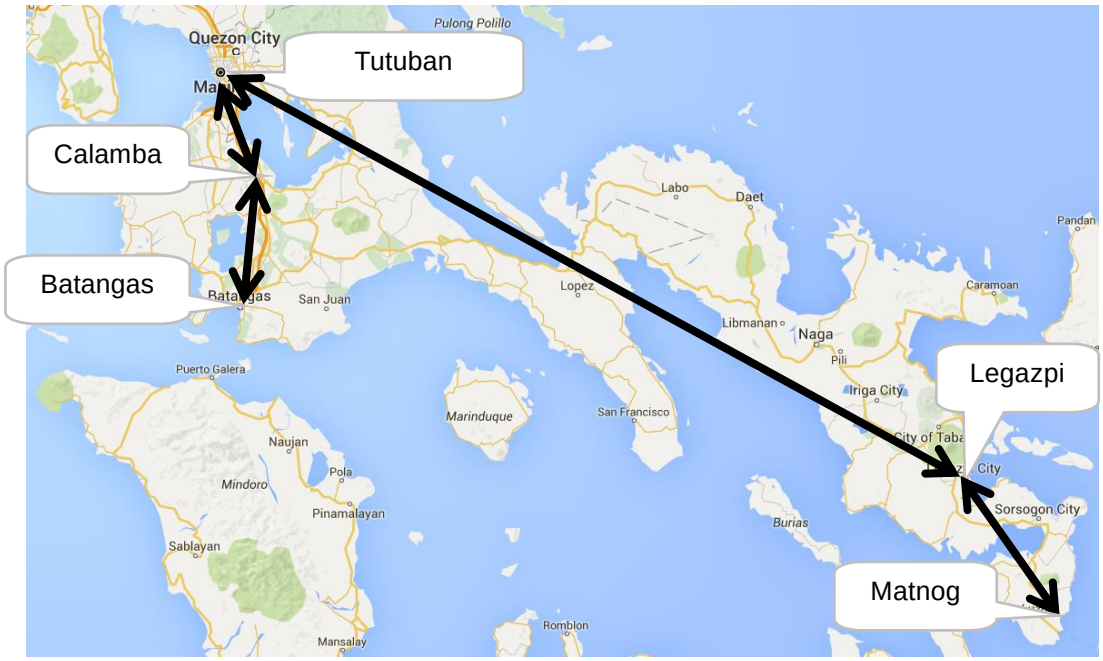
2. Summary

● DOTC regards construction of railways in the areas where the building up of transportation infrastructure is lagging to be an important policy. It aims to build and operate a commuter railway between Tutuban and Calamba and a long-haul railway between Tutuban and Legazpi with a spur line to Batangas and an extension to Sorsogon under one PPP project. The project is currently under tender.

3. Background and purposes

● DOTC aims to build and operate a railway system in the south for the sections between Tutuban of Manila and Calamba and between Tutuban and Legazpi (**Figure 2-67**). The PPP project to build and operate the North-South Railway (South) under a PPP scheme is undergoing a solicited tender and is currently in the pre-qualification stage.

Figure 2-67: Locations of build and operate PPP projects on the North -South Railway



Source：Compiled from PPPs@PH, 4th edition, PPP Center and Google Maps

4. Contents of implementation (development and role divisions)

- Total project cost of the build and operate PPP project of North-South Railway (South) is 170.7 billion pesos (US$4.03 billion). The long-haul railway will have a possible spur line to Batangas, and a possible extension to Sorsogon.

5. Government support

- DOTC launches to build railway between Tutuban and Legazpi as an important policy, so will provide availability payments for the PPP projects of the North-South Railway (South). The government will also provide the necessary ROW.

6. Outcome (usage, achievement of the purposes and business situation)

- The North-South Railway (South) PPP project will rehabilitate and extend from Tutuban to Legazpi, so that access to the southern part of Luzon from Manila is expected to improve.

7. Management of transport -inherent risks

- Even though DOTC launches the policy of building between Tutuban and Legazpi as an important policy, the project size and cost of the North-South Railway (South) is considerable. It is necessary to evaluate the transport-inherent risks and consider how to respond to them

1. Basic information

1 -1. Economy	● The Philippines
1 -2. Transportation mode	● Maritime transportation
1 -3. Project name	● Davao Sasa International Port
1 -4. Major implementer	● DOTC, Philippines Ports Authority (PPA)
1 -5. Site	● Davao Sasa International Port
1 -6. Period	-
1 -7. Total cost	● 17.46 billion pesos (US$410 million)
1 -8. Form	● BTO for infrastructure, BOT for equipment

2. Summary

● Davao Sasa International Port is the strategic center for international logistics in Mindanao and Davao City. The project includes the development, modernization, and the operations and maintenance of the port. It includes the construction of a 750 m. linear quay, the expansion of the container yard and the procurement of modern port equipment.

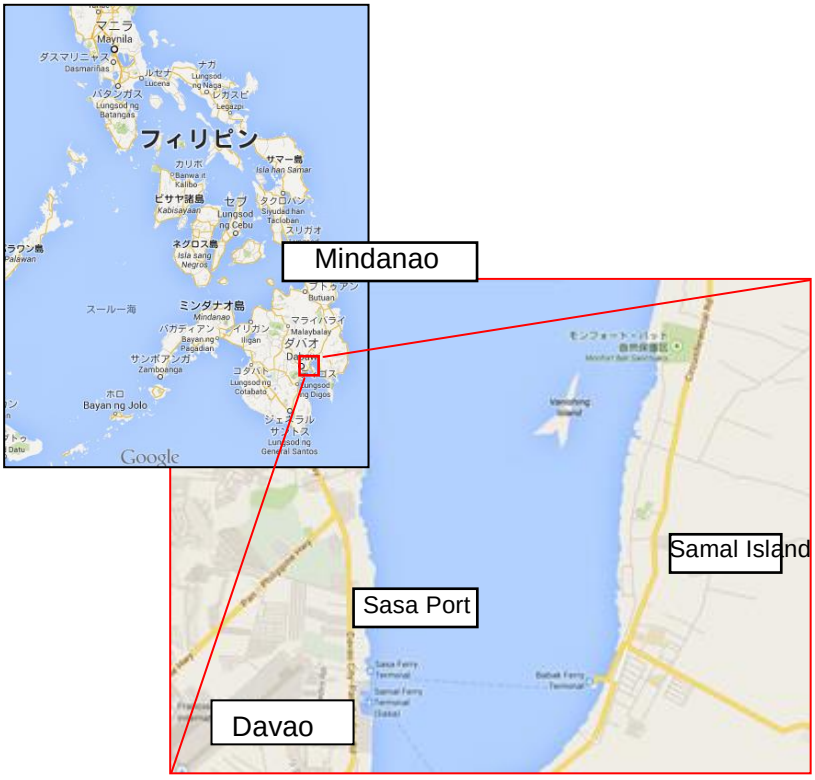
● The final decision of the project structure has been made. It is in process of filing for approval.

3. Background and purposes

● Davao City is located in Mindanao. It is the 3rd largest city in the Philippines, with an area of about four times that of Tokyo's 23 wards (**Figure 2-68**). Sasa Port is located in Davao City facing southeast into Davao Gulf. It is an international port and an important center for both cargo and passenger transport. Davao International Airport is located near Sasa Port. It is recognized for its great convenience. Fruit, coffee beans, orchids and logs from plantations of rainforests in Mindanao are actively exported.

● Davao has developed as the city for port logistics. The importance of Sasa Port is very high. DOTC and PPA are aiming to work with Sasa International Port as a construction and operation PPP project.

Figure 2-68: Location of Sasa International Port



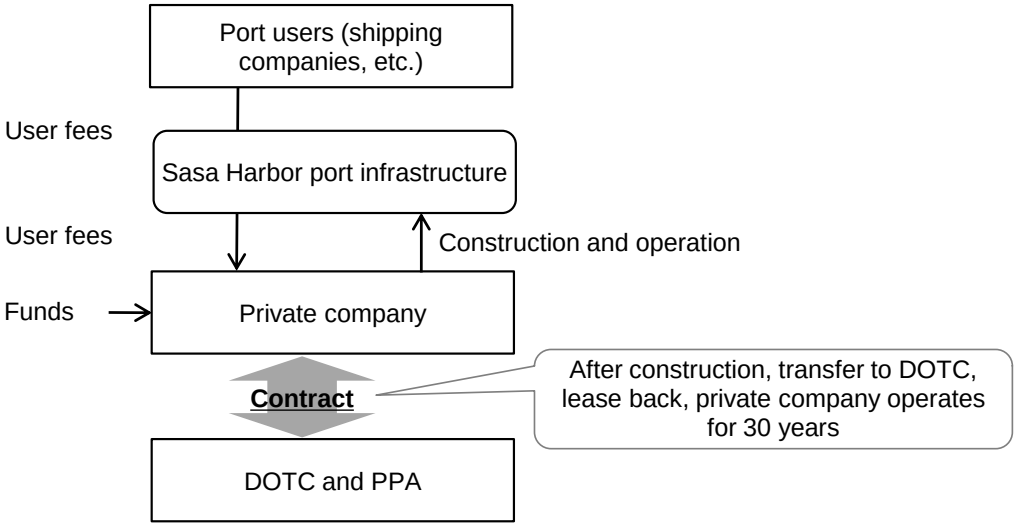
Source: Google Maps

4. Content of implementation (development and role divisions)

● The project cost for the Davao Sasa International Port PPP project is 17.46 billion pesos ($410 million). Construction will be for additional infrastructure and modernization of the port facilities

including a new quay apron, a direct quay, extension of the backup area, a container yard, warehouses and a new gantry crane with rubber tires that enables loading and unloading between the quay and ships (**Figure 2-69**). After the Davao Sasa International Port PPP project infrastructure is finished, ownership will be transferred to DOTC and PPA and the private company will continue to operate for the duration of the concession period.

Figure 2-69: Sasa International Port PPP project scheme



Source: PPP Center

5. Government support

- The private company will transfer ownership of the Davao Sasa International Port infrastructure to DOTC after its construction and receive a share in port revenue.

6. Outcome (usage, achievement of the purposes and business situation)

- With the Davao Sasa International Port PPP project, the port can improve its capacity as a hub of international maritime trade.

7. Management of transport -inherent risks

[Demand risk]

- Davao Sasa International Port is the important transport hub for both cargo and passengers. It is located in the growing southern part of the Philippines, and the amount of its international cargo is expected to grow in the future. A predictable level of demand can be expected; therefore the demand risk would appear to be minimal.

[Investment risk]

- There is investment risk for the private company who would shoulder the construction cost of the Davao Sasa International Port PPP project.

1. Basic information

1 -1. Economy	● The Philippines
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● Laguindingan International Airport
1 -4. Major implementer	● DOTC, CAAP
1 -5. Site	● Laguindingan International Airport
1 -6. Period	● 30 years
1 -7. Total cost	● 14.62 billion pesos (US$34 million) for total, 2.26 billion pesosn (US$5 million)
1 -8. Form	● Operate - Add - Transfer

2. Summary

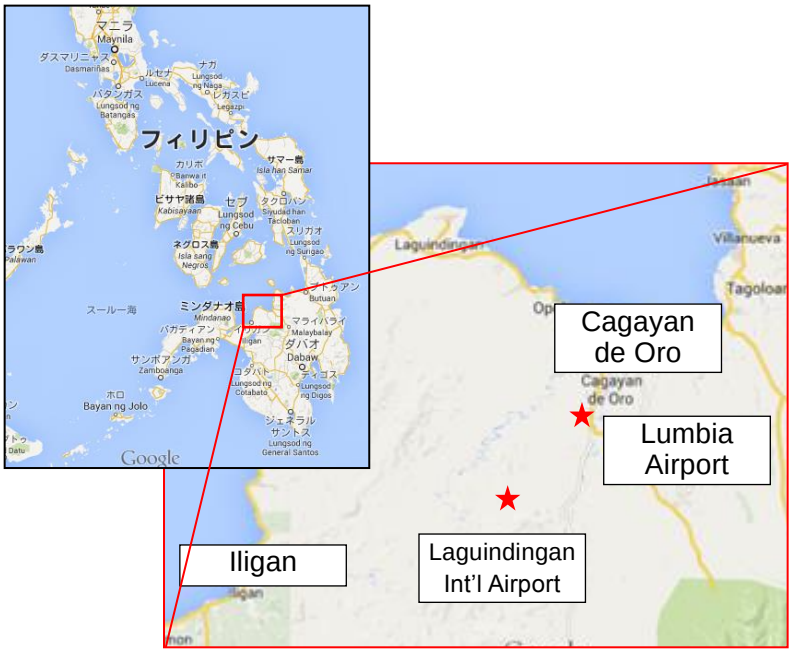
● Expansion of existing terminal, and operations and maintenance of airport under a PPP scheme.

3. Background and purposes

● Laguindingan International Airport is located 45km southwest of Cagayan de Oro, Misamis Oriental Province, which is the gateway to Northern Mindanao. It is also located 65km from Iligan (**Figure 2-70**). When completed, it should become a main airport in Northern Mindanao, replacing the current Lumbia Airport (Cagayan de Oro Airport), which has geographic and weather limitations.

● DOTC and CAAP are aiming for the Laguindingan International Airport PPP project to expand the airport capacity.

Figure 2-70: Laguindingan International Airport location



Source: Google Maps

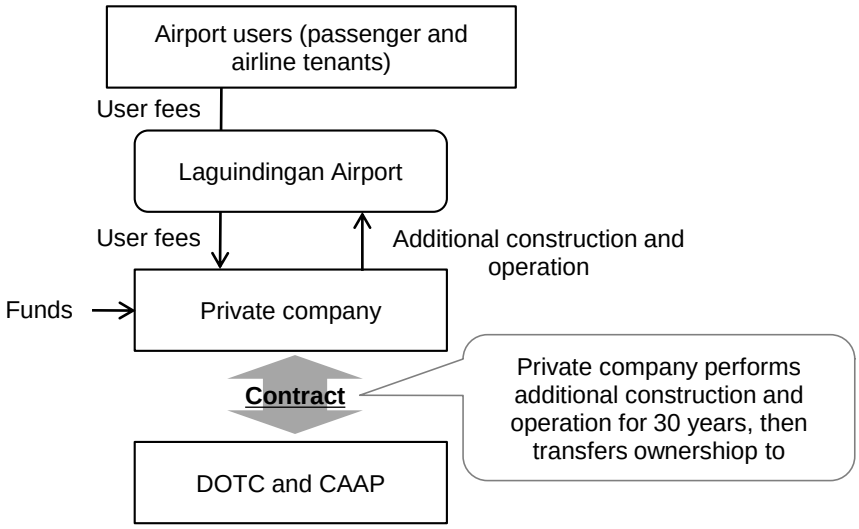
4. Content of implementation (development and role divisions)

● DOTC and CAAP received a loan from the Export -Import Bank of Korea to build Laguindingan International Airport and development is already underway, and the airport is operated and used as the airport with Visual Flight Rules currently. Currently, the project with a PPP scheme is the privatization to be run by a private company of the airport services operation, which includes an aircraft navigation system support facility, operation, maintenance and management of the facility. It is planned for the private company to run it for the first 30 years. After that, facility ownership will be transferred to DOTC and CAAP.

● The Laguindingan International Airport PPP project includes development of related infrastructure and facilities, installation of all of the necessary equipment to satisfy international standards, and provision of the airport business services using those facilities and equipment, and management and maintenance (**Figure 2-71**). The following is the concrete description:

○ Expansion and new construction of associated infrastructure and facilities satisfying the applicable standards, and new passenger terminals
○ Providing passenger terminal services - construction and operation of new and existing facilities during the entire concession period
○ Developing the air side (the restricted areas) especially including the apron and the areas used by airplanes
○ Enhance and develop air side facilities to fully support the enhanced airport over a defined period

Figure 2-71: Laguindingan International Airport PPP project scheme



Source: PPP Center

5. Government support

● Viability Gap Funding (VGF)/Cash support, if needed.

6. Outcome (usage, achievement of the purposes and business situation)

● Laguindingan International Airport replaced Lumbia Airport and smoothe air traffic in Misamis Oriental Province.

7. Management of transport -inherent risks

● Note: Laguindingan International Airport was awarded 10 years prior to inception of PPP (around 2003) and started operations in 2013. Laguindingan International Airport's Operations and Maintenance PPP involves expansion (capacity augmentation), and operations and maintenance by PPP concessionaire.

1. Basic information

1 -1. Economy	● The Philippines
1 -2. Transportation mode	● Airport Sector
1 -3. Project name	● Mactan-Cebu International Airport
1 -4. Major implementer	● DOTC-Mactan-Cebu International Airport Authority, GMR-Megawide Consortium
1 -5. Site	● Mactan-Cebu International Airport
1 -6. Period	● Construction stated in June 2015
1 -7. Total cost	● 17.5 billion pesos (US$40 million)
1 -8. Form	● BOT

2. Summary

● The project entails the construction of a new passenger terminal building, the expansion and rehabilitation of the existing passenger terminal building. The concessionaire will operate and maintain the landslide and apron facilities for a 25-year period. This project will expand the capacity of the international airport that supports the adjacent special economic zone and internationally known resort area.

● GMR-Megawide Consortium, which has experience with airport construction, was awarded the bid.

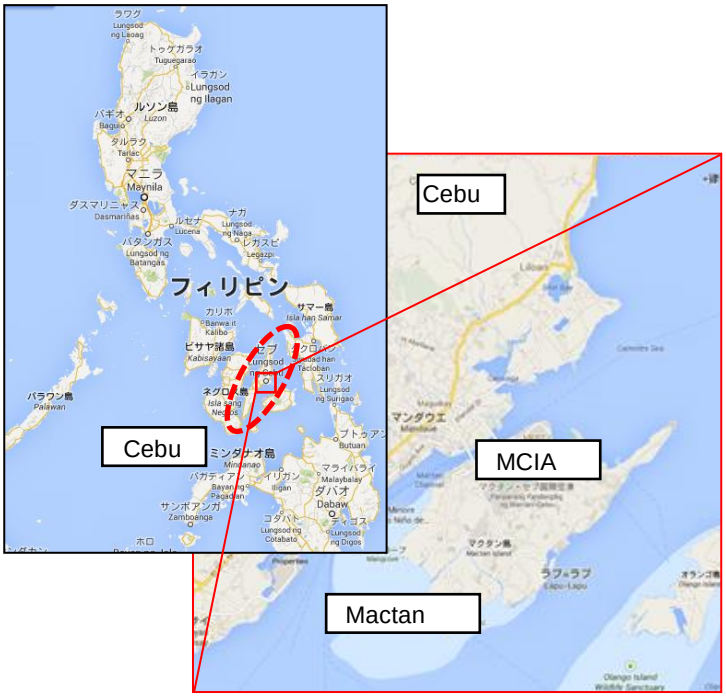
3. Background and purposes

● Mactan-Cebu International Airport is located in small Mactan Island adjacent to the middle of Cebu Island in central The Philippines, with a very narrow strait between them. It is the second busiest airport in the nation (**Figure 2-72**).

● Mactan Island is internationally well known as a resort area. It has a special economic zone (tax advantages for corporate income tax and custom duties) and hotels and shopping centers with good access to the airport.

● The existing terminal of Mactan-Cebu International Airport has an annual capacity for on and off boarding of 4.5 million passengers. In 2011, 6.2 million passengers used it, which is over its capacity.

Figure 2-72: Location of Mactan -Cebu Airport



Source: Google Maps

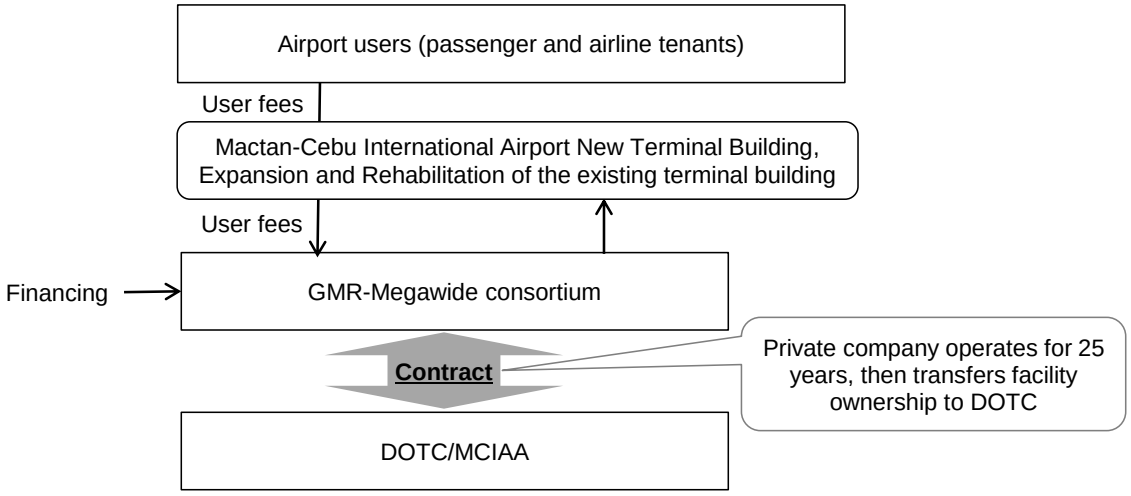
4. Content of implementation (development and role divisions)

● Many global consortia applied for the Mactan-Cebu International Airport PPP project. The consortium, composed of GMR Infrastructure (India), which had experience doing Delhi Airport

construction, and Megawide Construction Corporation (Philippines), was awarded the contract. The GMR-Megawide Consortium will construct the new terminal, rehabilitate the existing terminal, and to operate it under the Mactan-Cebu International Airport PPP project (**Figure 2-73**).

- After 25 years of operation, terminal building ownership will be transferred to DOTC and the Mactan-Cebu International Airport Authority (MCIAA).

Figure 2-73: Mactan -Cebu International Airport PPP project scheme



Source: PPP Center:

5. Government support

- The Philippines government sets special economic zone in Mactan Island where the Mactan-Cebu International Airport PPP project is progressing. The special economic zone attracts domestic and international passengers which secures transport volume of Mactan-Cebu International Airport.

6. Outcome (usage, achievement of the purposes and business situation)

- With the Mactan-Cebu International Airport PPP project, the airport can expand its capacity to handle more passengers for smooth air transportation.

7. Management of transport -inherent risks

[Demand risk]

- There are already many airplanes arriving and leaving from Mactan-Cebu International Airport. For the PPP project, it is estimated that a predictable level of demand is likely, and so demand risk would appear to be minimal.

[Investment risk]

- The existing terminal of Mactan-Cebu International Airport is already built. To expand capacity, the private sector must invest in the construction of the new terminal building and the expansion of the existing terminal building and associated facilities.

1. Basic information

1 -1. Economy	● The Philippines
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● New Bohol Airport
1 -4. Major implementer	● DOTC, CAAP
1 -5. Site	● Bohol Island
1 -6. Period	-
1 -7. Total cost	● 4.57 billion pesos (US$ 10 million)
1 -8. Form	● Operate - Add - Transfer

2. Summary

● Air transportation demand is increasing at Bohol as the sightseeing visitors are increasing. DOTC and CAAP utilized the international yen loan to build the new Bohol Airport. The PPP project to operate the New Bohol Airport is listed under “projects under procurement” in PPPs@PH, 4th Edition, which summarized PPP projects in the Philippines.

● With the PPP project to operate New Bohol Airport, the private company is to only operate, then expand the Airport.

3. Background and purposes

● There are rich tourism resources such as Chocolate Hill and the Tasha (tarsier). As the number of sightseeing visitors increase, the air transportation demand is increasing. DOTC and CAAP are building New Bohol Airport on Panglao Island across from Bohol Island, to replace the current Bohol Airport located on the Bohol Island, utilizing international yen loan (**Figure 2-74**).

● DOTC and CAAP aim to operate New Bohol Airport as PPP after it they have built it. The PPP project of New Bohol Airport is described as an "investment opportunity" in the 4th edition of PPPs@PH.

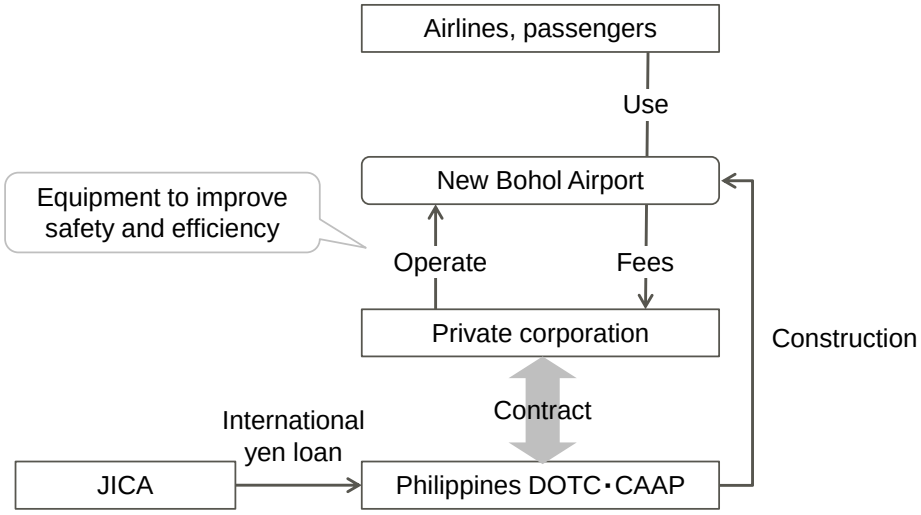
Figure 2-74: Location of new Bohol Airport

Source：Compiled from PPPs@PH, 4th edition, PPP Center and Google maps

4. Contents of implementation (development and role divisions)

● Total project cost of the New Bohol Airport Development, Operations and Maintenance PPP project is 4.57 billion pesos. The private company partner is to operate New Bohol Airport for 30 years after it has been constructed using the international yen loan. The company will collect the airport usage fees from airlines and passengers, do operation and maintenance, and install equipment to improve safety and efficiency. The PPP will be required to expand the facility during the course of its operations (**Figure 2-75**).

Figure 2-75: New Bohol Airport operation PPP project scheme



Source：Compiled from PPPs@PH, 4th edition, PPP Center

5. Government support

- No Viability Gap Funding (VGF). Costly construction of New Bohol Airport is done by DOTC and CAAP with the international yen loan. The private company will operate and maintain the airport, then expand the facility.

6. Outcome (usage, achievement of the purposes and business situation)

- Under the PPP project for New Bohol Airport operations, New Bohol Airport will be operated and maintained appropriately, and safety and efficiency will be improved. The new airport is expected to handle more passengers as tourism is expected to be further promoted in Bohol.

7. Management of transport -inherent risks

[Investment risk]

- In the operation of the PPP project for New Bohol Airport, costly construction of New Bohol Airport is carried out by DOTC and CAAP, utilizing the international yen loan. The investment risk for the private company is reduced as infrastructure investment would come further into the concession period.

2 -12. Russia

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Highway bridge over the Lena River	BOT
2	Land transportation (rail)	● High -speed rail between St. Petersburg and Bulslovskaya	-
3	Land transportation (rail)	● Baikal -Amur Mainline Railway and Trans -Siberian Railway	-

(2) Cases

1. Basic information

1 -1. Economy	● Russia
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Highway bridge over the Lena River
1 -4. Major implementer	● Federal Road Agency
1 -5. Site	● Lena River (Yakutsk region)
1 -6. Period	● 2020 to 2034
1 -7. Total cost	● 50 billion roubles (approximately US$1 billion) to build
1 -8. Form	● BOT

2. Summary

● Based on the Federal Targeted Programme “Russian Transport System Development in 2010 -2020,” the Federal Road Agency is planning a build -operate PPP project for the highway bridge across the Lena River. In addition to the Federal Road Agency lending the land to the private sector, it will provide assistance with development costs.
● Building the highway bridge across the Lena River is expected to increase logistics activity and turn the Yakutsk region into a logistics hub.

3. Background and purposes

● "Russian Transport System Development in 2010 -2020" shows the transportation infrastructure development. The Federal Road Agency is promoting a build -operate PPP project for the highway bridge across the Lena River in the Yakutsk region. Building a highway bridge across the Lena River is expected to increase logistics handling in the Yakutsk region and it is expected to become a logistics hub.

4. Contents of implementation (development and role divisions)

● The highway bridge across the Lena River is anticipated to be built from 2020 to 2024, when it will go into operation. The cost will be 50 billion roubles (approximately US$1 billion). The build -operate PPP project is for the private company to build and operate the highway bridge across the Lena River. The Federal Road Agency will lend the land to the private company and assist with the development cost.

5. Government support

● In the build -operate PPP project for the highway bridge across the Lena River, the Federal Road Agency will lend the land to the private company and assist with the development cost.

6. Outcome (usage, achievement of the purposes and business situation)

● Building the highway bridge across the Lena River is expected to increase logistics activity and turn the Yakutsk region into a logistics hub.

7. Management of transport -inherent risks

[Investment risk]
● In the build -operate PPP project for the bridge across the Lena River, the Federal Road Agency will assist in the high cost of development, so that it is possible for the private company to reduce the investment risk.
[Land acquisition risk]
● In the build -operate PPP project for the bridge across the Lena River, the Federal Road Agency owns the land. By lending it to the private company, it is possible for the company to avoid the land acquisition risk.

1. Basic information

1 -1. Economy	● Russia
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● High -speed rail between St. Petersburg and Bulslovskaya
1 -4. Major implementer	● Russian Railways
1 -5. Site	● St. Petersburg to Bulslovskaya
1 -6. Period	● 2007 - 2016
1 -7. Total cost	● 95 billion roubles (approximately US$1.9 billion)
1 -8. Form	-

2. Summary

● Based on the Strategy for Developing Rail Transport in the Russian Federation up to 2030 (Rail Transport Development Strategy), Russian Railways is promoting the build -operate PPP project for high -speed rail between St. Petersburg and Bulslovskaya. This will promote the development of the northwest region. The cost is shared by public and private parties.
● It is difficult to forecast cargo usage on the high -speed railway between St. Petersburg and Bulslovskaya.

3. Background and purposes

● Russia is developing the northwest region. Russian Railways issued the Rail Transport Development Strategy, and, based on this strategy, is promoting the build -operate high -speed rail PPP project between St. Petersburg and Bulslovskaya to connect the major cities of the northwest.

4. Contents of implementation (development and role divisions)

● The high -speed railway between St. Petersburg and Bulslovskaya is capable of traveling at a speed of 200km, which makes it possible to shorten the travel time.
● In the build -operate PPP project for high -speed rail between St. Petersburg and Bulslovskaya, 71% of the expenses are borne by the private investors, and 29% are borne by Russian Railways. It is expected to become profitable over 10 years of operation.

5. Government support

● In the build -operate PPP project for high -speed rail between St. Petersburg and Bulslovskaya, 29% of the expenses are borne by Russian Railways.

6. Outcome (usage, achievement of the purposes and business situation)

● Implementation of the build -operate PPP project for high -speed rail between St. Petersburg and Bulslovskaya will connect the major cities of the northwest, which is expected to lead to further development of the area.

7. Management of transport -inherent risks

[Demand risk]
● The demand risk may become realized in the build -operate PPP project for high -speed rail between St. Petersburg and Bulslovskaya, since it is difficult to forecast cargo volume handled at the Port of Primorsk and at the Port of Vysotsk which use the high -speed railway between St. Petersburg and Bulslovskaya.

[Investment risk]
● In the build -operate PPP project for high -speed rail between St. Petersburg and Bulslovskaya, because Russian Railways bore part of the cost, it was possible to reduce the investment risk. However, due to delays, the cost increased and therefore investment risk may become realized.

1. Basic information

1 -1. Economy	● Russia
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Baikal -Amur Mainline Railway and Trans -Siberian Railway
1 -4. Major implementer	● Federal Agency for Railway Transport
1 -5. Site	● 12 regions
1 -6. Period	● 2014 - 2017
1 -7. Total cost	● 562 billion roubles (US$11.4 billion)
1 -8. Form	● Investment by Russian Railways

2. Summary

● In Russia, trade and investment help invigorate the socioeconomic development, connecting the Russian Far East and the Baikal Region to Mongolia, China, the Republic of Korea and other Asia -Pacific Region economies. For this, Russian Railways is implementing the build -operate PPP Project for the Baikal -Amur Mainline Railway and Trans -Siberian Railway.

3. Background and purposes

● Russia is promoting the policy of "Socioeconomic development of the Russian Far East and the Baikal Region to 2018." The Baikal -Amur Mainline Railway and Trans -Siberian Railway between the Russian Far East and the Baikal Region and Mongolia, China and the Republic of Korea, is expected to improve access to the Asia -Pacific Region. It may attract people, goods and money. Russian Railways is working on the Baikal -Amur Mainline Railway and Trans -Siberian Railway to promote socioeconomic development in the Russian Far East and the Baikal Region. The Federal Agency for Railway Transport is implementing this build -operate PPP Project.

4. Contents of implementation (development and role divisions)

● Russian Railways is implementing the build -operate PPP project for the Baikal -Amur Mainline Railway and Trans -Siberian Railway from 2014 to 2017, spending over 562 billion roubles (US $11.4 billion US). Russian Railways will review the plan for this PPP project as necessary.

● It has been announced that many shippers will transport cargo using the build -operate PPP project for the Baikal -Amur Mainline Railway and Trans -Siberian Railway. Therefore it is thought that a certain level of usage could be ensured.

5. Government support

-

6. Outcome (usage, achievement of the purposes and business situation)

● Under the build -operate PPP project for the Baikal -Amur Mainline Railway and Trans -Siberian Railway, access is expected to improve from the Russian Far East and the Baikal Region to Mongolia, China, the Republic of Korea and other Asia -Pacific Region economies. In addition, it is expected to invigorate the socioeconomic development as a result of the activation of trade and investment.

7. Management of transport -inherent risks

-

2 -13. Chinese Taipei

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Private Participation in the Installation and Operation of the National Freeway Electronic Toll Collection System	BOT
2	Land transportation (rail)	● Taiwan High Speed Rail	BOT
3	Maritime transportation	● Kaohsiung Port Wharves	BOT

(2) Cases

1. Basic information

1 -1. Economy	● Chinese Taipei
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Private Participation in the Installation and Operation of the National Freeway Electronic Toll Collection System
1 -4. Major implementer	● MOTC ● FETC
1 -5. Site	● National Freeway 1 ● National Freeway 3, National Freeway 3A ● National Freeway 5
1 -6. Period	● 2004 - 2025
1 -7. Total cost	● 6 billion TWD (US $195 million) ● 0.1 billion TWD (US $32 million) per year for operation
1 -8. Form	● BOT

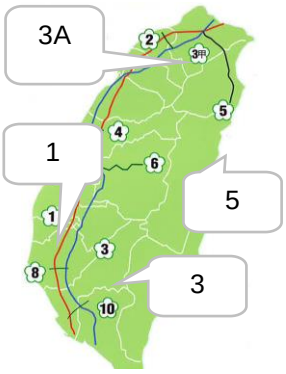
2. Summary

● Although MOTC was promoting ETC use to mitigate traffic congestion near the toll booths on the national toll roads, it was not widely used. FETC implemented the BOT PPP project of ETC from 2004 to 2021 to promote wide and effective ETC use.
● To promote ETC use, FETC is distributing free e -Tags for the vehicles. ETC has been used on all national toll roads from 2013.

3. Background and purposes

● MOTC was promoting ETC use to smooth out the toll payment to mitigate traffic congestion near the toll booths on the national toll roads. In Chinese Taipei, the vehicle fee was discounted by 10% if ETC was used. Nevertheless, the rate of vehicles using ETC was relatively low at about 40% in 2000.
● MOTC selected FETC to effectively promote ETC. It targeted national freeways 1, 3, 3A and 5. ETC development and operation was established as a PPP project for 2004 to 2025. To accelerate ETC use, in 2012, FETC began giving away e -Tags, the in -vehicle ETC device.

Figure 2-76: National Freeway route map

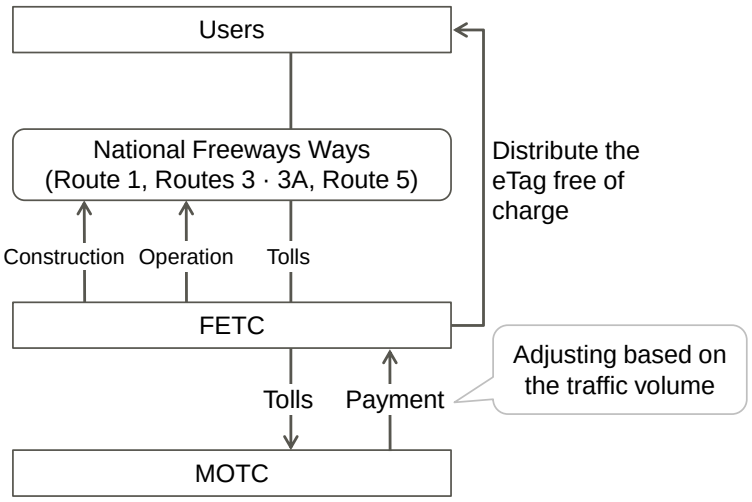


Source：The Advancement of Taiwan's Distance -Based Freeway Electronic Toll Collection, MOTC

4. Contents of implementation (development and role divisions)

● FECT spent 4 billion TWD to construct the distance -based ETC system at the entire national freeways. FECT is paid by MOTC according to distance traveled by vehicles on the national freeways (**Figure 2-77**). MOTC adjusts the payment to FETC every year based on the traffic volume of the national freeways.

Figure 2-77: BOT PPP project scheme for ETC on National Freeways



Source：Created from responses to MOTC survey questions

5. Government support

- For the ETC PPP project for the national freeways, MOTC promotes ETC use by emphasizing free e -Tag distribution by FETC.

6. Outcome (usage, achievement of the purposes and business situation)

- The ratio of vehicles using ETC on toll roads has rapidly increased since 2012 when FETC started to distribute free e -Tags. By June 2015 the ratio was 93.1% and daily transactions were 14 million. The number of vehicles with eTags is 6 million. ETC is widely used on the national roads. From end of 2013, all toll fees on all of the national roads have been collected by ETC.

7. Management of transport -inherent risks

[Demand risk]

- In the ETC PPP project for the national freeways, FETC distributes free e -Tags to promote ETC use in order to reduce demand risk.
- FETC can reduce its demand risk by reviewing the payment of MOTC based on the traffic volume of the national freeways.

1. Basic information

1 -1. Economy	● Chinese Taipei
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Taiwan High Speed Rail
1 -4. Major implementer	● MOTC ● Taiwan High Speed Rail Co. Ltd. (THSRC)
1 -5. Site	● Between Taipei and Kaohsiung
1 -6. Period	● 2005 - 2039
1 -7. Total cost	● 513 billion TWD (US$15 billion)
1 -8. Form	● BOT

2. Summary

- MOTC established a BOT PPP project from 1998 to 2033 for the Taiwan High Speed Rail, connecting the north and south of Chinese Taipei. It is being implemented by THSRC, a company controlled by Chinese Taipei general contractors and financial institutions.
- MOTC reduced the burden of THSRC by acquiring the land, doing the costly civil engineering work and building the understructure of the Taipei section. However, the ridership was lower than estimated. The business conditions of THSRC deteriorated and it did a loan conversion.

3. Background and purposes

- The geography of Chinese Taipei stretches north to south. The construction of the Taiwan High Speed Rail connecting north and south was promoted as a way to transport people and goods smoothly. MOTC performed the feasibility study of the Taiwan High Speed Rail in the 1990s. In 1994, the Legislative Yuan approved Taiwan High Speed Rail construction and operation as a PPP project.
- MOTC selected THSRC, which was established by Chinese Taipei general contractors and financial institutions. THSRC is implementing the Taiwan High Speed Rail construction and operation connecting Taipei, the capital located in the north, and Kaohsiung, the major city in the south. The time period for this project is 1998 to 2033. It began operating in 2007.

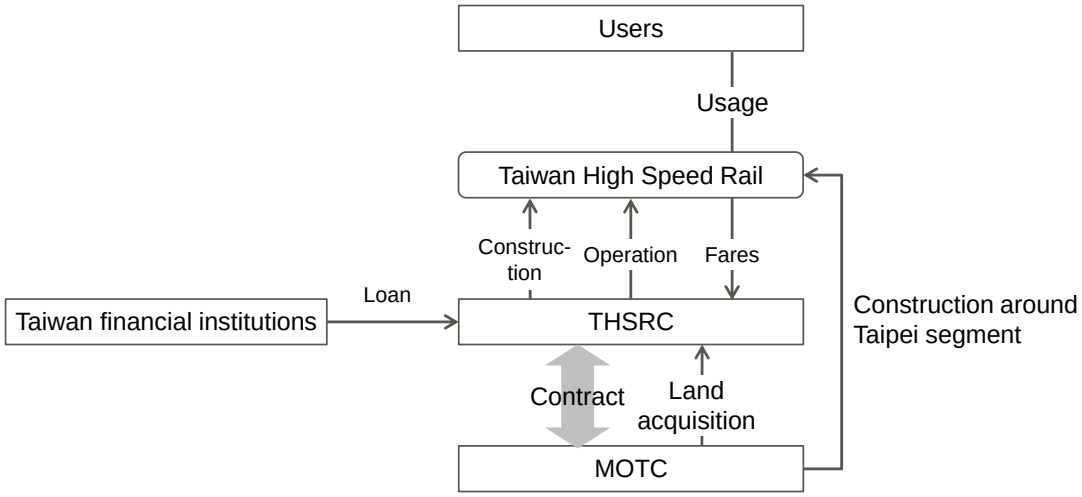
Figure 2-78: Route map of Taiwan High Speed Rail

Source：created from THSRC

4. Contents of implementation (development and role divisions)

- The Taiwan High Speed Rail connects Taipei and Kaohsiung. Total length is 345km. There are 11 stations. The total cost was 513 billion TWD (US $15 billion). Under the PPP project of building and operating the Taiwan High Speed Rail, MOTC spent 105.7 billion TWD acquiring the land, doing the costly civil engineering work and building the understructure of the Taipei section (**Figure 2-79**).
- Under the PPP project of building and operating the Taiwan High Speed Rail, THSRC's construction costs were 407.6 billion TWD over the period of 1998 to 2007. The period of operation is 2007 to 2033. Passenger fares are collected to pay for maintenance and operation. THSRC took out a loan of 382 billion TWD from Chinese Taipei banks to pay for building and operating the Taiwan High Speed Rail.

Figure 2-79: Taiwan High Speed Rail scheme for BOT PPP project



Source：Based on response by MOTC to survey questions

5. Government support

- Under the PPP project of building and operating the Taiwan High Speed Rail, MOTC reduced the burden of THSRC by acquiring the land and doing costly construction on the Taipei section.

6. Outcome (usage, achievement of the purposes and business situation)

- Ridership of the Taiwan High Speed Rail has been increasing since it began operation. Annual ridership for 2014 was 48.02 million, but is still lower than forecast. The business conditions of THSRC deteriorated, and in 2010, its debt was rescheduled and converted to lower -interest loans. In addition, THSRC proposed a reverse stock split and extension of the contract in 2014. MOTC is reviewing these proposals.

7. Management of transport -inherent risks

[Demand risk]

- Under the PPP project of building and operating the Taiwan High Speed Rail, ridership was lower than estimated. The business conditions of THSRC deteriorated. Demand risk was manifested.

[Operating risk]

- Facing financial burden of interests, Taiwan Speed Highway plans to convert to lower -interest loans in order to reduce operating risk during the period.

[Investment risk]

- Under the PPP project of building and operating the Taiwan High Speed Rail, MOTC reduced the investment risk of THSRC by taking up the costly civil engineering work and construction of the understructure of the Taipei section.

[Land acquisition risk]

- Under the PPP project of building and operating the Taiwan High Speed Rail, MOTC acquired the land for use, and THSRC therefore avoided the land acquisition risk.

1. Basic information

1 -1. Economy	● Chinese Taipei
1 -2. Transportation mode	● Maritime transportation
1 -3. Project name	● Kaohsiung Port Wharves
1 -4. Major implementer	● MOTC ● Kao Ming Container Terminal Corp.
1 -5. Site	● Kaohsiung Port, 6th container terminal
1 -6. Period	● 2007 - 2057
1 -7. Total cost	● 18.2 billion TWD (US$59 million)
1 -8. Form	● BOT

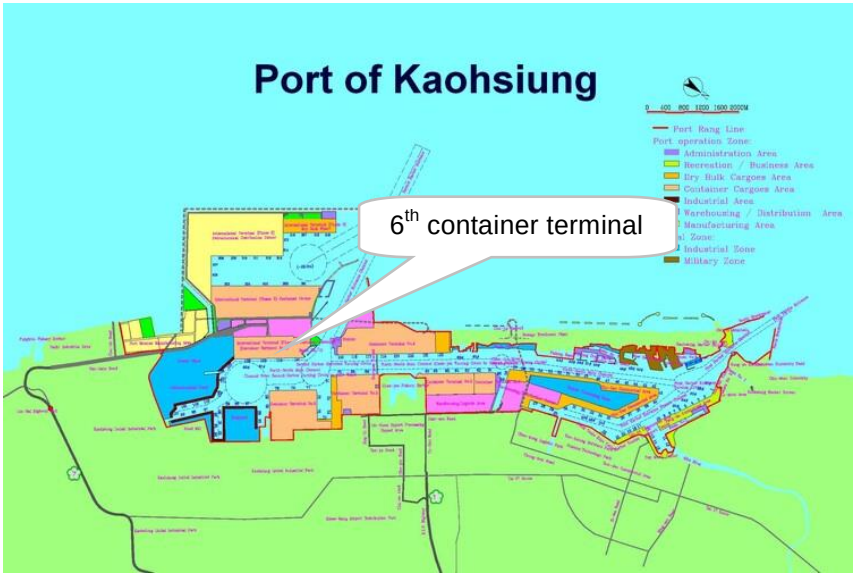
2. Summary

- It was necessary to increase the cargo handling capacity at Kaohsiung Port, a major port in the south of Chinese Taipei; therefore MOTC established a BOT PPP from 2007 to 2057 to build the 6th container terminal wharves. Kao Ming Container Terminal Corp. is the project implementer.
- As a result of this project, Kaohsiung Port cargo handling capacity will be upgraded and the volume of cargo handled is forecast to increase by 300TEU at the Kaohsiung Port wharves.

3. Background and purposes

- At Kaohsiung Port, the major port of southern Chinese Taipei, the cargo handling volume has been increasing. There was a need to improve the cargo handling capacity. MOTC selected Kao Ming Container Terminal Corp to build the 6th container terminal on the wharves and to operate it from 2007 to 2057 under a public -private partnership (**Figure 2-80**).

Figure 2-80: Kaohsiung Port map

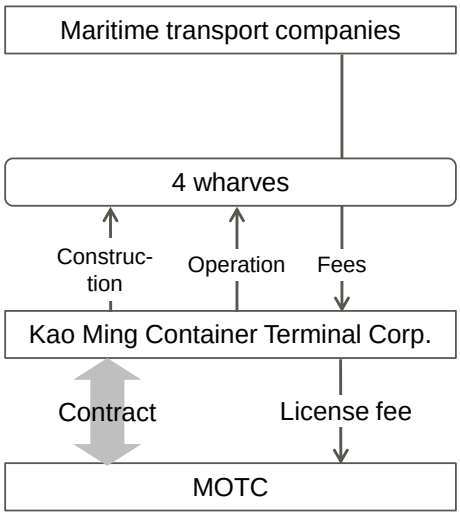


Source: Created from Kaohsiung Port webpage

4. Contents of implementation (development and role divisions)

- Under the BOT PPP wharf project at Kaohsiung Port, Kao Ming Container Terminal Corp. obtained the rights from MOTC and invested 18.2 billion TWD. It built four wharves (108 to 111) on the 6th container terminal with a total length of 1,500m. It will operate them until 2057 (**Figure 2-81**). Kao Ming Container Terminal Corp. collects usage fees from maritime transport operators using these wharves. Construction and operation costs, as well as payments to MOTC for the business rights are paid from these fees.

Figure 2-81: BOT PPP project scheme for wharves at Kaohsiung Port



Source：Created from response from MOTC to survey questions

5. Government support

- No specific support.

6. Outcome (usage, achievement of the purposes and business situation)

- Under the BOT PPP wharf project at Kaohsiung Port, four wharves are being built on the 6th container terminal. With this, the cargo handling ability of Kaohsiung Port will be upgraded, and the volume of cargo handled is forecast to increase by 300TEU.

7. Management of transport -inherent risks

[Demand Risk]

- Kaohsiung Port is the major port in Chinese Taipei, where the cargo handling volume has been increasing. Because of this, stable demand is forecast. This PPP project has only a small demand risk for the four wharves at the 6th Container Terminal.

2 -14. Thailand

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Sri Rat - Dao Khanong - Western Outer Ring Road Expressway	BOT
2	Land transportation (road)	● Inland container depot	-
3	Land transportation (rail)	● BTS	BOT
4	Land transportation (rail)	● MRT	Operation
5	Maritime transportation	● Laem Chabang Port B5 and C3 Berths	BOT, Operation

(2) Cases

1. Basic information

1 -1. Economy	● Thailand
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Sri Rat - Dao Khanong - Western Outer Ring Road Expressway
1 -4. Major implementer	● EXAT (Expressway Authority of Thailand)
1 -5. Site	● Sri Rat - Dao Khanong
1 -6. Period	● Procurement in 2015
1 -7. Total cost	● US$898 million
1 -8. Form	● BOT

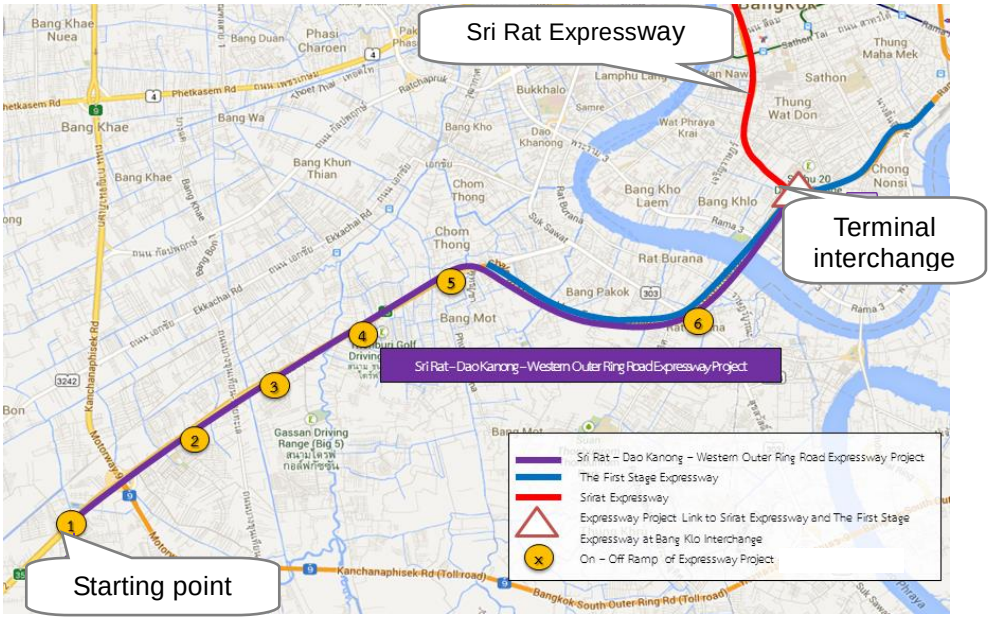
2. Summary

- The serious traffic congestion occurs on Rama 2 Road. EXAT is building and operating the Sri Rat -Dao Khanong -West Outer Ring Road Expressway on the route of Rama 2 Road as a PPP project.
- EXAT pays the cost for land acquisition and prepares the supportive environment by talking to land acquisition -related organizations. The private company will build the Sri Rat -Dao Khanong -Outer Ring Road Expressway and operate it for 30 years.
- The choice and contract conclusion will be done in 2015; the plan is to begin operation in 2019.

3. Background and purposes

- Rama 2 Road connects urban Bangkok and its southern suburbs. Serious traffic congestion is getting worse since the traffic volume on the road is high. EXAT is planning the Sri Rat - Dao Khanong - Western Outer Ring Road Expressway construction and operation PPP project. EXAT is inviting private companies to participate (**Figure 2-82**). It is expected that the traffic congestion will be lessened when the new expressway is open and the vehicles can be diverted away from the current road.

Figure 2-82: Sri Rat - Dao Khanong - Western Outer Ring Road Expressway route

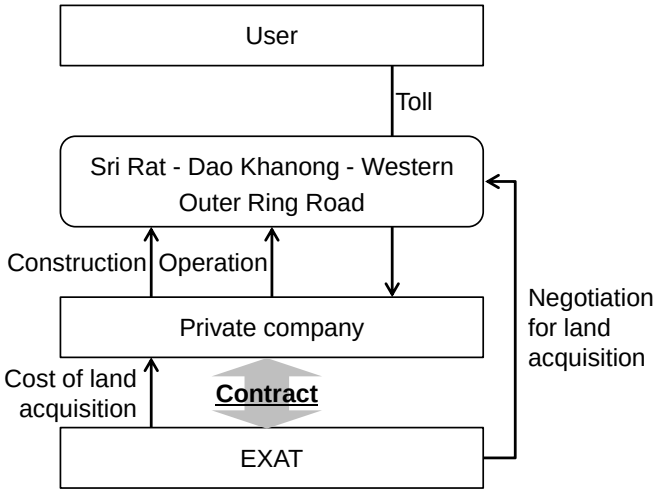


Source: EXAT

4. Contents of implementation (development and role divisions)

- The project will create an elevated expressway over the existing Rama 2 Road. Total length will be 18km. There will be six toll gates. The cost of the project is estimated at US$898 million: US$150 million for design, US$806 million for building and construction and US$770 million for land acquisition. Construction will be 89.8% of the project cost.
- The private company will operate and maintain the Sri Rat - Dao Khanong - Western Outer Ring Road Expressway for 30 years and will receive the revenue from toll fees (**Figure 2-83**). The role of EXAT is to pay the cost of land acquisition for the additional road space and toll -gate space and also to coordinate with the relevant organizations so that the process of land acquisition by the private company can proceed smoothly.

Figure 2-83: Sri Rat -Dao Khanong -Western Outer Ring Road Expressway PPP project scheme



Source: The Market Sounding for Sri Rat -Dao Khanong -Western Outer Ring Road Expressway Project, EXAT, July 2013

5. Government support

- In the Sri Rat - Dao Khanong - Western Outer Ring Road Expressway PPP project, EXAT pays the cost of acquisition of the land and coordinates conflicts among the relevant organizations.

6. Outcome (usage, achievement of the purposes and business situation)

- EXAT estimated the number of vehicles per day on the Sri Rat - Dao Khanong - Western Outer Ring Road Expressway. The first year after opening in FY2019, the estimate is 107,744 vehicles per day. By FY2046, the estimate is 297,555, which is 2.8 times the volume. At this level of fare collection, the Sri Rat - Dao Khanong - Western Outer Ring Road Expressway PPP project may be profitable, as EIRR is expected to become much higher than the average public works social discount of 12% among ASEAN Member States.

7. Management of transport -inherent risks

[Land acquisition risk]

- For the Sri Rat - Dao Khanong - Western Outer Ring Road Expressway PPP project, EXAT not only pays the cost of acquisition of the land needed for roads and toll gates, but also closely coordinates with the relevant organizations so that the process of land acquisition by the private company can proceed smoothly. Therefore, land acquisition risk for this project would appear to be minimal.

1. Basic information

1 -1. Economy	● Thailand
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Inland container depot
1 -4. Major implementer	● SRT
1 -5. Site	● Bangkok
1 -6. Period	● 1996 onward
1 -7. Total cost	● US$94 million
1 -8. Form	-

2. Summary

● SRT has built and operated inland container depot in PPP way for Laem Chabang Port in order to reduce congestion in Bangkok Port. With increased usage of the inland container depot, and congestion at Bangkok Port will be mitigated.

3. Background and purposes

● Although Bangkok Port is close to Bangkok, it is the small river port. It has become overcrowded due to an increase in logistics activity.
● Beginning in 1996, to promote the use of Laem Chabang Port rather than overcrowded Bangkok Port, SRT did a build -operate PPP for the inland container depot as the base for transport to Laem Chabang Port after the cargo has been organized in Bangkok.

4. Contents of implementation (development and role divisions)

● SRT has conducted Inland Container Depot PPP project with a private company by PPP scheme.

5. Government support

● MOT promotes to build Inland Container Depot as an important policy to reduce congestion in Bangkok Port and promote usage of Laem Chabang Port.

6. Outcome (usage, achievement of the purposes and business situation)

● The amount of cargo handled at the inland container depot in 2013 was 1.37 million TEU and revenue was 499.82 million baht (about US$1.2 million). Laem Chabang Port will see increased activity with increased usage of the inland container depot, and congestion at Bangkok Port will be mitigated.

7. Management of transport -inherent risks

[Demand risk]
● Laem Chabang Port is a major port in Thailand with large cargo volume. So Inland Container Depot PPP project can expect sufficient cargo volume with low demand risk.

1. Basic information

1 -1. Economy	● Thailand
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● BTS
1 -4. Major implementer	● BMCL, BTS Group
1 -5. Site	● Bangkok
1 -6. Period	● Since 1999
1 -7. Total cost	● US$170 million
1 -8. Form	● BOT

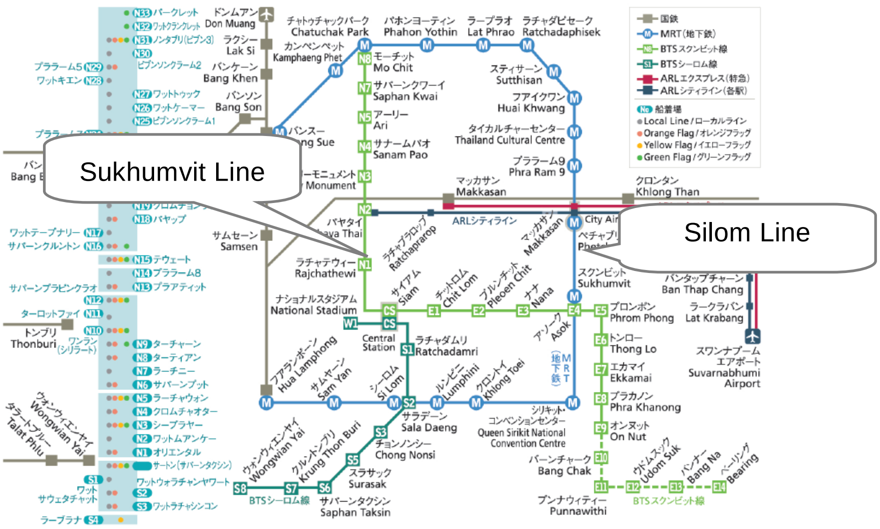
2. Summary

- BTS is an elevated railway in Bangkok. Bangkok has promoted the building and operation of the Blue Line as a PPP project. Currently the BTS Group is implementing it.
- BTS opened in 1999. The financial state of the BTS Group deteriorated because demand risk and investment risk were actualized.
- The Central Court approved the BTS Group restructuring in 2007 that wrote off its debt.

3. Background and purposes

- Vehicle use is in full swing in Bangkok as rapid economic growth since the 1990s has led to improvements in income. In the urban area, traffic congestion has become serious. Increases in air pollution and CO2 emissions from vehicle exhaust are also problematic. Thailand is building a high -speed mass transport system to achieve smooth urban transport. The elevated railway, BTS and the MRT subway are in operation.
- Bangkok is promoting construction and operation of BTS as a PPP project to limit the financial burden. This is currently being done by the BTS Group (formerly Tanayong, a real estate company) (**Figure 2-84**). Two BTS lines (Sukhumvit and Silom) went into operation in 1999. BTS Group's financial condition deteriorated as the demand risk and investment risk were actualized. In 2007, the Central Court approved the restructuring plan for the BTS Group that wrote off its debt.

Figure 2-84: BTS lines

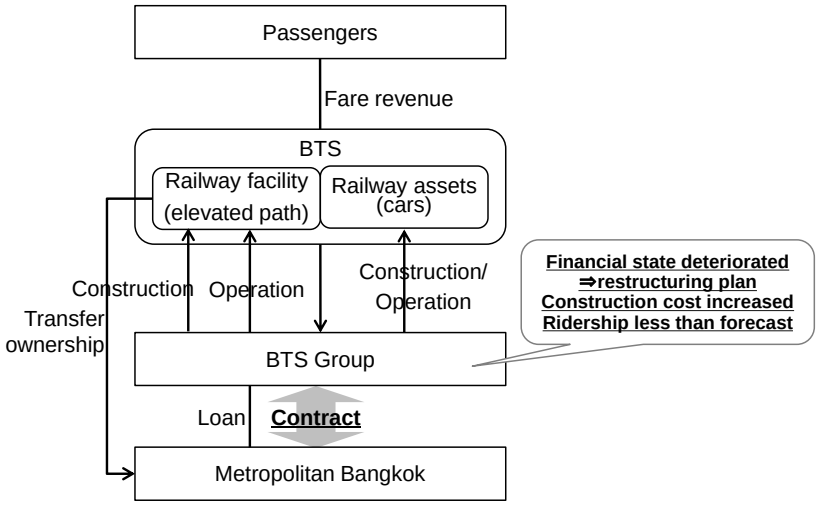


Source: Tourism Authority of Thailand

4. Contents of implementation (development and role divisions)

● The total distance for the 2 lines of BTS, the Sukhumvit and Silom Lines, is 36.3km. There are 34 stations. There are 52 trains of four cars each in operation. In the BTS PPP project, BTS Group has a 30 -year management and lease contract for train operation assets such as cars. After the elevated train facilities are finished, their ownership will be transferred to BMCL, which will then lease them to the operator (**Figure 2-85**).

Figure 2-85: BTS PPP project scheme



Source: BTS Group annual report; Comparison and Analysis of Case Studies using BOT method on transport social resources in the large Asian cities (Japanese language), Tokyo Institute of Technology, Sinya Hanaoka; Civil Engineering Association essays collection F4 (Building Management) Special Issue, 2010

5. Government support

● Metropolitan Bangkok provides loan to BTS group to recover the financial problems.

6. Outcome (usage, achievement of the purposes and business situation)

● During construction under the BTS PPP projects, the baht suddenly fell due to the Asian currency crisis. The construction cost increased from the initial estimate of 32 billion baht (about US$1 billion) to 54 billion baht (about US$1.7 billion). The BTS Group was not able to raise the fare in the negotiations with BMCL; therefore, the cost burden increased as the investment risk actualized. BTS ridership was initially estimated at 600,000 per weekday, but in 2013 ridership was still only 540,000. Demand risk of insufficient revenue from fares surfaced and the large debt was incurred, leading to high interest expenses. The continuous losses led to the worsening financial status. In FY2007, the Central Court approved the BTS Group's restructuring plan that wrote off its bad debts, so that its debt load was reduced. In 2010, the debt was increased by a restructuring of group companies. Recently, it has been profitable as they have worked on debt compression and limited the interest payments to control costs.

7. Management of transport -inherent risks

[Demand risk]

● In the BTS PPP project, the number of passengers was lower than forecast. The fare increase was insufficient in the negotiations with BMCL, with the result that demand risk was actualized.

[Operating risk]

● Facing the financial burden of changing interests by Asian currency crisis, BTS group conducted restructuring plan to reduce future interest burden, which leads to reducing operating risk.

[Investment risk]

● BTS Group assumed a large amount of construction cost in the BTS PPP project. Costs such as interest payments increased so that investment risk was actualized. In 2007, the restructuring plan of the BTS Group was approved in the Central Court to write off the bad debt and reduce total debt.

1. Basic information

1 -1. Economy	● Thailand
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● MRT
1 -4. Major implementer	● MRTA, BMCL
1 -5. Site	● Bangkok
1 -6. Period	● Blue Line: since 2004 ● Purple line: since 2016
1 -7. Total cost	International yen loan ● US$2.2 billion for Blue Line ● US$624 million for Purple Line
1 -8. Form	● Operation

2. Summary

● MRT is Bangkok's subway system. MRTA does concession, management and lease contracts for the MRT Blue Line and Purple Line PPP project. BMCL is implementing.

● The international yen loan is used for MRT construction. The Blue Line began operation in 2004. The Purple Line is planned to open in 2016.

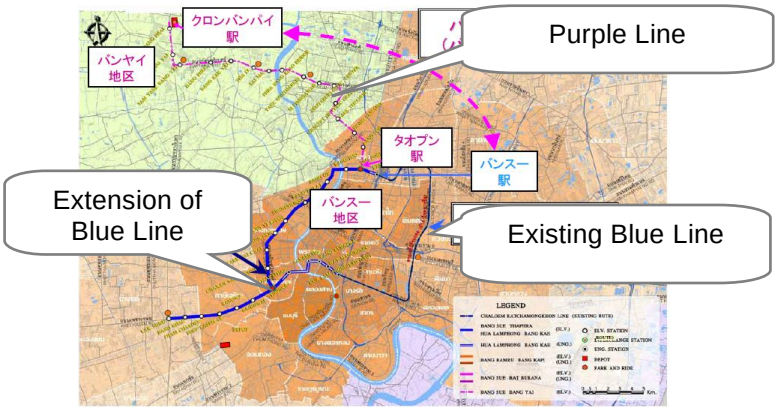
● BMCL's net profit has been continuously negative; demand risk was actualized. The Purple Line PPP scheme was changed from the PPP net method used by the Blue Line to the PPP gross method that is based on the availability payment.

3. Background and purposes

● Vehicle use is in full swing in Bangkok as rapid economic growth since the 1990s has led to improvements in income. In the urban area, traffic congestions became serious. Increases in air pollution and CO_2 emissions from vehicle exhaust are also problematic. Thailand is building a high -speed mass transport system to achieve smooth urban transport. The elevated railway, BTS and the MRT subway are in operation.

● MRTA is promoting the PPP project of the MRT concession, management and lease contract for the Blue Line and Purple Line. It is being implemented by BMCL, the public corporation that MRTA is an investor in. The Blue Line began operating in 2004. The Purple Line is currently is under construction with a planned opening in 2016 (**Figure 2-86**). The international yen loan was used to fund the construction of the Blue Line and the Purple Line.

Figure 2-86: MRT lines

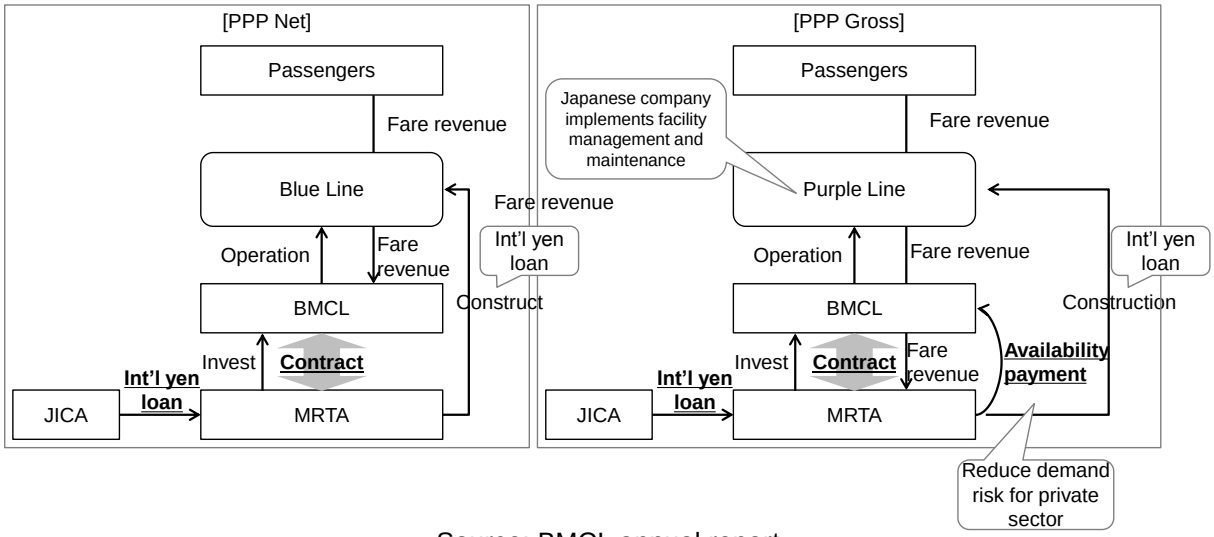


Source: Material provided by JICA

4. Contents of implementation (development and role divisions)

● The MRT Blue Line (total length, 20km with 18 stations) started in 2004. MRTA utilized an international yen loan of US$2.2 billion to fund the construction. BMCL is to operate the Blue Line for 25 years in addition to commercial development of the surrounding area under a PPP net scheme (**Figure 2-87**). The MRT Purple Line (total length 22km with 16 stations) opens in 2016. MRTA is utilizing US$624 million of international yen loans to fund the construction, and BMCL has a management and lease contract for 30 years with a PPP gross scheme using availability payments. For building the Purple Line, Toshiba, Marubeni and JR East Japan made a joint venture to conclude a management and lease contract with BMCL for a period of 10 years for all of the train facilities.

Figure 2-87: MRT PPP project scheme



Source: BMCL annual report

5. Government support

● Availability payment will be introduced for Purple Line.

6. Outcome (usage, achievement of the purposes and business situation)

● The number of passengers on weekdays using the MRT Blue Line steadily increased to 270,000 as of FY2013. The fare revenue to BMCL increased to US$80 million. However, because BMCL has a large debt, the interest payment is also large. It has continuously suffered net losses. The MRT Blue Line PPP project used the PPP net scheme. For the Purple Line, the scheme was changed to PPP gross, which is based on the availability payment. BMCL may be concerned about demand risk for this project. For the MRT PPP project, demand risk was actualized and the fare revenue was insufficient. With increased debt came increased interest payments. The financial status seems to be deteriorating.

7. Management of transport -inherent risks

[Demand risk]

● With the MRT PPP project, BMCL did a concession, management and lease contract. The large debt has made it difficult for BMCL to make interest payments and the company has suffered continuous net losses. Demand risk was actualized. With the MRT PPP project, the scheme was changed for the Purple Line to be a PPP gross scheme instead of the PPP net scheme for the Blue Line. BMCL may avoid the demand risk for the Purple Line.

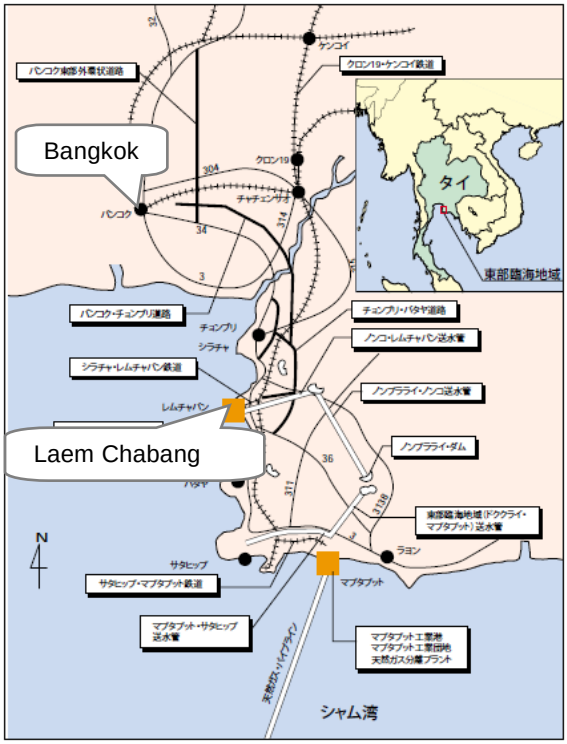
1. Basic information

1 -1. Economy	● Thailand
1 -2. Transportation mode	● Maritime transportation
1 -3. Project name	● Laem Chabang Port B5 and C3 Berths
1 -4. Major implementer	● PAT, LCIT
1 -5. Site	● Laem Chabang Port
1 -6. Period	● B5 berth: since 1996 ● C3 berth: since 2004
1 -7. Total cost	● US$120 million or greater
1 -8. Form	● B5 Terminal: BOT ● C3 Terminal: Operation

2. Summary

- Thailand plans to utilize the international yen loan to construct the Laem Chabang Port that large ships will be able to use, replacing Bangkok Port, which is a river port.
- LCIT initially does construction and concession for the B5 Berth as a PPP project, and concession alone for C3 Berth. The construction cost for the B5 Berth was too large for LCIT; therefore, it appears to have chosen to implement only the concession portion for C3 Berth.

Figure 2-88: Location of Laem Chabang



Source: Material provided by JICA

3. Background and purposes

- Bangkok Port is close to the Bangkok city center. It is a shallow river port that large ships cannot access. PAT started the construction of Laem Chabang Port in 1987 using the international yen loan to respond to the needs of increasingly active maritime transport as the economy has been growing. The port can receive large ships. It opened in 1991.
- PAT had a contract with LCIT for the Laem Chabang Port B5 and C3 Berths PPP construction and operation project. The B5 Berth construction and operation began in 1996. The C3 Berth concession began in 2004. LCIT was established in 1996 with investment from the STC group and DP Wold to implement construction and operation for the B5 and C3 Berths. STC group is a financial conglomerate in Thailand in the business of food manufacturing and sales. DP Wold is

a globally known port operating corporation.

4. Contents of implementation (development and role divisions)

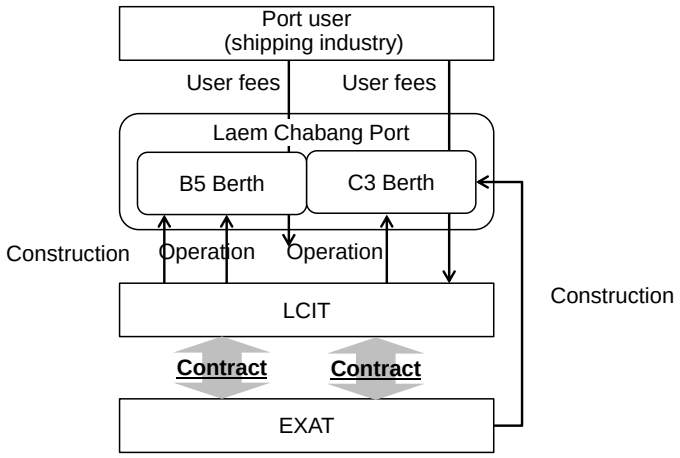
- In Laem Chabang Port, C3 Berth is larger than B5 Berth. Construction and operation took over US$120 million (**Figure 2-89**). For the B5 Berth PPP project of the Laem Chabang Port, LCIT has been and will be doing construction and operation for 30 years starting in 1996. For the C3 Berth PPP project, PAT is doing the construction and LCIT has a 30 -year concession starting 2004. (**Figure 2-90**).

Figure 2-89: Laem Chabang Port B5 and C3 Berths Overview

	B5 Terminal	C3 Terminal
Length of Berth	● 400m	● 500m
Water depth	● 14m	● 16m
Number of container storing spaces	● 2,813	● 3,552
Warehouse dedicated to mixed load cargo	● Import: 517m^2	● Import: 1,639m^2 ● Export: 1,639m^2

Source: LCIT

Figure 2-90: Laem Chabang Port B5 and C3 Berths PPP project scheme



Source: LCIT

5. Government support

- EXAT has constructed C3 Berth with its own finance so that LCIT can reduce its financial burden of the construction and operate it.

6. Outcome (usage, achievement of the purposes and business situation)

- Laem Chabang Port B5 and C3 Berths PPP project can increase its capacity of handling maritime trade as a regional hub port.

7. Management of transport -inherent risks

[Investment risk]

- For the Laem Chabang Port B5 & C3 Berth PPP project, LCIT does construction and operation for the B5 Berth. It does only the concession for the C3 Berth. B5 Berth construction cost is too large a burden to LCIT. Investment risk was actualized and the financial status deteriorated. The decision to only do concession for C3 Berth may have been led by the concern for controlling investment risk.

2 -15. The Unites States

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● I -495 Capital Beltway HOT Lanes	BOT
2	Land transportation (rail)	● Eagle project	BOT

(2) Cases

1. Basic information

1 -1. Economy	● The United States
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● I -495 Capital Beltway HOT Lanes
1 -4. Major implementer	● VDOT
1 -5. Site	● Fairfax County, Virginia
1 -6. Period	● Construction: 2008 - 2012
1 -7. Total cost	● USD 2.068 billion
1 -8. Form	● BOT

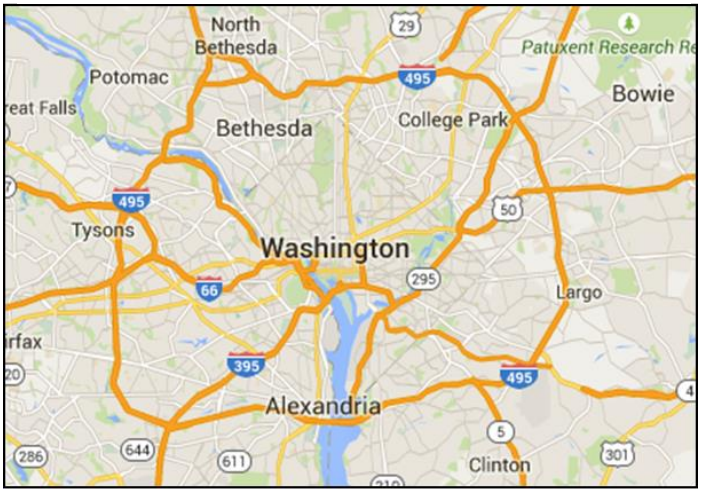
2. Summary

● I -495 Capital Beltway High -Occupancy Toll (HOT) Lanes project expanded and improved a 14 -mile section the I -495 Capital Beltway in Fairfax County, VA. In addition to adding four new managed HOT lanes (two in each direction) and reconstructing the existing general purpose lanes, the project included construction of over 50 bridges and overpasses, close to a dozen interchanges, and dedicated HOV ramps.
● Prices charged to use the HOT lanes are set so as to regulate demand such that high and dependable service levels are maintained.
● Buses, carpools, emergency vehicles and vehicles with three or more occupants can all access the HOT lanes for free.

3. Background and purposes

● In the early part of 2000, VDOT assessed a range of options for improving the Capital Beltway, to include HOV widening alternatives and concepts for improving interchanges.
● Estimated costs ranged upward from US $2.5 billion and impacts included displacing hundreds of residences. Local stakeholders expressed concern over the potential solutions.
● In June 2002, Fluor Daniel (now Fluor Enterprises), a private engineering, procurement, construction, maintenance and project management company based in Irving, Texas, submitted an unsolicited proposal to VDOT to develop the Capital Beltway under Virginia's 1995 PPTA. The proposal called for Fluor to design, build, finance, operate and maintain (DBFOM) HOT lanes on the Capital Beltway. Fluor would finance the project, and revenues from the toll lanes would compensate them for their investment.

Figure 2-91: Location of the I-495 Capital Beltway

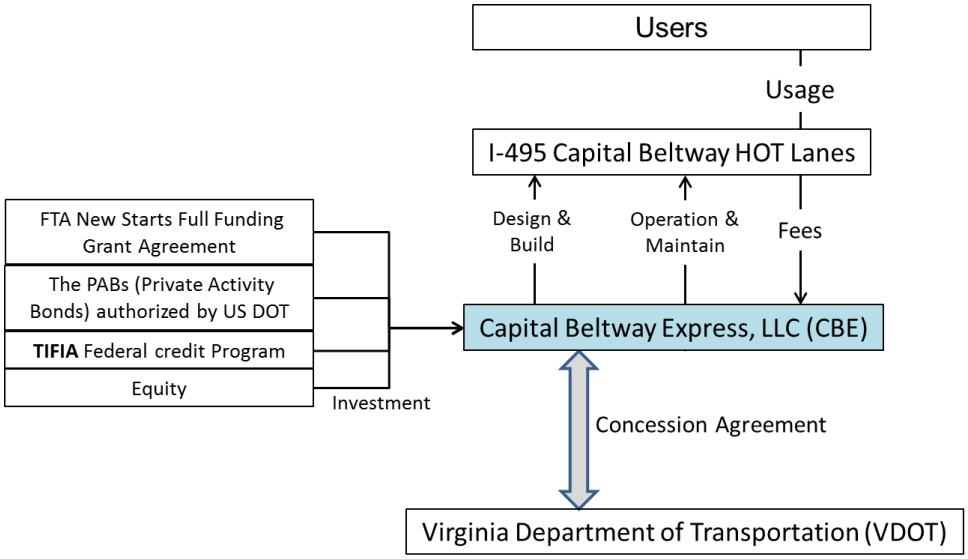


Source : Google Map

4. Content of implementation (development and role divisions)

● In December 2007, VDOT awarded the DBFOM Capital Beltway concession to Capital Beltway Express, LLC (CBE). The contract period included five (non -operational) years for construction and 75 years for operations and maintenance of the facility. The CBE is a special purpose entity established by Fluor and Transurban to execute the concession.

Figure 2-92: PPP Agreement Framework



Source: DOT and FHA

5. Government support

- The concession is providing roughly US $350 million in shareholder equity. Additionally, CBE borrowed another US $1.2 billion, using two different credit programs administered by DOT.
- First, CBE secured a US $589 million loan from the TIFIA Federal credit program.
- Second, it issued (through a State conduit) US$589 million in tax -exempt Private Activity Bonds (PABs).
- DOT authorized the PABs from its Congressionally -provided US $15 million allocation.
- The TIFIA loan, as well as the PABs reduced financing costs for the concession and will be repaid with project revenues.
- VDOT also contributed US $409 million in public funding.
- VDOT's contributions are a subsidy and will not be repaid.

6. Outcome (usage, achievement of the purposes and business situation)

- This project marked a number of precedent -setting "firsts" in transportation project delivery in the US. It was the first to (1) use dynamically priced tolls to manage congestion and leverage a project financing package; (2) use PABs; and (3) implement an extraordinarily complex plan of finance that included multiple sources of funds.

7. Management of transport -inherent risks

[Investment risk]

- DOT and VDOT provides financial support for CBE based on credits programs, therefore CBE can reduce financial burden especially in building and lower financial risk.

1. Basic information

1 -1. Economy	● USA
1 -2. Transportation mode	● Land transportation (rail)
1 -3. Project name	● Eagle project
1 -4. Major implementer	● RTD
1 -5. Site	● City of Denver
1 -6. Period	● Construction: 2011 - 2016
1 -7. Total cost	● USD 2043.1 million
1 -8. Form	● BOT

2. Summary

● The Eagle Project is part of RTD's FasTracks initiative, a voter -approved program to expand rail and bus transit throughout the Denver metropolitan region. FasTracks includes 122 miles of commuter rail and light rail, 18 miles of bus rapid transit service, the redevelopment of Denver Union Station (DUS), 21,000 new parking spaces, and other improvements.

● First PPP for commuter rail in the U.S. to include design -build, financing, and long -term operations (DBFOM)

3. Background and purposes

● This Project uses the TIFIA credit program.

● TIFIA's strategic goal is to leverage limited Federal resources and stimulate private capital investment in transportation infrastructure by providing credit assistance in the form of direct loans, loan guarantees, and standby lines of credit (rather than grants) to projects of national or regional significance.

Figure Location of City of Denver

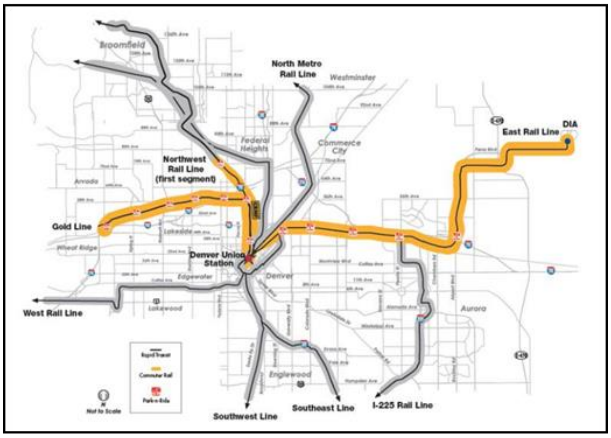
Source : Google Map

4. Content of implementation (development and role divisions)

● The Eagle Project elements funded by the TIFIA loan include the following :

- ➢ East Corridor - 22.8 -mile commuter rail line from DUS east to Denver International Airport, with five intermediate stations
- ➢ Gold Line - 11.2 -mile commuter rail line, the first 3.7 miles of which are shared with the Northwest Line (segment 1) from DUS north and west to Wheat Ridge, with six intermediate stations
- ➢ Commuter Rail Maintenance Facility (CRMF) - sited adjacent to the Gold and Northwest Lines it includes a central control center, a maintenance shop, and a rail storage yard, among other facilities

Figure 2-93: Eagle Project Line in Denver



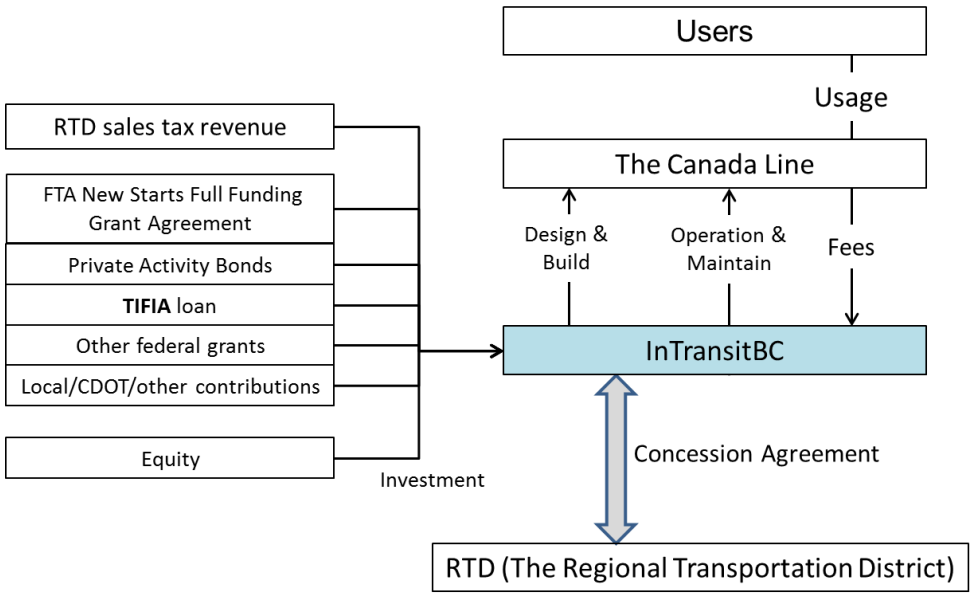
Source : US DOT

● About TIFIA Credit program

- ➢ Applicants
  - ✓ State Governments / Private Firms / Special Authorities / Local Governments / Transportation Improvement Districts
- ➢ Projects
  - ✓ Highways and Bridges / Intelligent Transportation Systems / Intermodal Connectors / Transit Vehicles and Facilities / Intercity Buses and Facilities / Freight Transfer Facilities

/ Passenger Rail Vehicles and Facilities / Rural Infrastructure Projects

Figure 2-94: PPP Agreement Framework



Source: DOT

5. Government support

- FTA supports - - - FTA New Starts Full Funding Grant Agreement - US $1,030.4 million
- Private Activity Bonds - US $396.1 million
- USDOT supports - - - TIFIA loan - US $280.0 million
- Other federal grants - US $57 million
- RTD sales tax revenue - US $128.1 million
- Revenue bond proceeds - US $56.8 million
- Local/CDOT/other contributions - US $40.3 million
- Equity - US $54.3 million

6. Outcome (usage, achievement of the purposes and business situation)

- The Eagle project will be expected as follows;
  - (Mobility Improvement) The 19.0 -mile project is expected to serve 38,100 average weekday boardings and 12,900 daily new riders in 2020. RTD estimates the following annual travel time savings for the Southeast line. (3.40 million hours)
  - (Environmental Benefits) Denver is currently classified a "transitional" non -attainment area for ozone, a "serious" non -attainment area for carbon monoxide, and a "moderate" non -attainment area for PM_{10}. Denver is in attainment for NO_x. RTD estimates the following emissions reductions in pollutant emissions. (decrease of 7,905 annual CO2 -tons)
  - (Operating Efficiencies) RTD estimates the following operating costs per passenger mile. (US $0.37)
  - (Cost Effectiveness) RTD estimates the following cost effectiveness indices. (US $14.80)

7. Management of transport -inherent risks

[Investment Risk]

- USDOT and FTA provides financial support for InTransitBC based on credits programs, therefore InTransitBC can reduce financial burden especially in building and lower financial risk.

2 -16. Viet Nam

(1) List of Cases

No.	Transportation mode	Project name	PPP form
1	Land transportation (road)	● Bien Hoa -Vung Tau Highway	-
2	Land transportation (road)	● Ho Chi Minh City - Trung Luong Highway	Operation
3	Land transportation (road)	● Dau Giay -Phan Thiet Expressway	BOT
4	Maritime transportation	● Lach Huyen International Port (port phase I)	Operation
5	Air transportation	● Long Thanh International Airport	BOT

(2) Cases

1. Basic information

1 -1. Economy	● Viet Nam
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Bien Hoa -Vung Tau Highway
1 -4. Major implementer	● MOT・BVEC
1 -5. Site	● Bien Hoa -Vung Tau
1 -6. Period	-
1 -7. Total cost	● Phase1: US $700 million
1 -8. Form	-

2. Summary

● The Bien Hoa -Vung Tau Highway is a toll road built along National Highway 51 from the inland suburb of Ho Chi Minh City to the coastal area.
● The Bien Hoa -Vung Tau Highway PPP project was a private sector proposal. The company that proposed it to MOT was BVEC which is capitalized by two state -owned enterprises, and a state -owned bank. Currently, it is waiting for approval of the feasibility study.
● JICA contracted to give the loan of US $860 million to BVEC.

3. Background and purposes

● Both Dong Nai Province and Ba Ria -Vung Tau Province are adjacent Ho Chi Minh City and adjacent one another. The Bien Hoa -Vung Tau Highway connects Bien Hoa, the capital of Dong Nai Province and Vung Tau, the well known tourist spot on the coast of Bien Hoa. It is a toll road and runs 77.8km alongside National Highway 51 (**Figure 2-95**).
● Industries are concentrating in Ho Chi Minh City and its suburbs. The cargo handling volume at the Cai Mep -Thi Vai Port serving Dong Nai Province and Ba Ria -Vung Tau Province is increasing as the facilities there are being improved utilizing the international yen loan. Construction of the road infrastructure for better access is the pressing need. However, the building of road infrastructure has been delayed due to a shortage of funds. MOT is aiming to make the Bien Hoa -Vung Tau Highway a construction and operation PPP project.

Figure 2-95: Location of Bien Hoa -Vung Tau

Source: Material provided by JICA

4. Contents of implementation (development and role divisions)

● The Bien Hoa –Vung Tau Highway PPP project was a proposal made to MOT by the private company BVEC. BVEC was established with investments from the Viet Nam Urban and Industrial Zone Development Investment Corporation, the state -owned national development company Songda Corporation and the Bank for Investment and Development of Viet Nam. The Bien Hoa –Vung Tau Highway is designed to be 35m wide with 6 lanes and have a traveling speed of 100 - 120kph. The PPP project is divided into Phase 1 and Phase 2. The estimated cost for Phase 1 is US $700 million (**Figure 2-96**). In 2011, JICA contracted with BVEC for the loan of 8.17 trillion Dong (US $900 million). The feasibility study has been completed for the

Bien Hoa –Vung Tau Highway PPP project and it is waiting for approval. The scheme to be used is not decided yet.

Figure 2-96: Bien Hoa -Vung Tau Highway PPP project overview

	Section	Extension
Phase1	Bien Hoa IC -Phu My IC, Phu My IC -National Highway 51	46.8km
Phase2	Phu My IC -Vung Tau IC	31.0km
Total		77.8km

Source: Material provided by JICA

5. Government support

- Viet Namese PPP framework has unsolicited PPP projects. The Bien Hoa -Vung Tau Highway PPP project is proposed by a private corporation which has know -how and financial resources.
- MOT utilizes JICA's support to provide loan for BVEC.

6. Outcome (usage, achievement of the purposes and business situation)

- With the Bien Hoa -Vung Tau Highway PPP project, access to Cai Mep -Thi Vai port from Dong Nai Province and Ba Ria -Vung province will be improved.

7. Management of transport -inherent risks

[Investment risk]

- BVEC will pay a high construction cost for the Bien Hoa -Vung Tau Highway PPP project. JICA is planning to provide a loan of US $900 million. With this, investment risk seems reduced.

1. Basic information

1 -1. Economy	● Viet Nam
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Ho Chi Minh City - Trung Luong Highway
1 -4. Major implementer	● MOT, CIPM
1 -5. Site	● Ho Chi Minh City - Trung Luong
1 -6. Period	● Since 2005
1 -7. Total cost	● US $600 million
1 -8. Form	● Operation

2. Summary

- The project is for a part of the South -North Highway. This section is built to mitigate congestion on the national road from Ho Chi Minh City to the Mekong Delta region.
- Built with the national government budget and revenue from the sale of toll fee collection rights. The private company to which the toll fee collection rights were transferred is planning to sell it to still another private company,

3. Background and purposes

- The Ho Chi Minh City -Trung Luong Highway is a toll road with a total length of 61.9km. This includes a 40km length connecting Dem Market Junction in the Binh Chanh District of Ho Chi Minh City with Chau Thanh District of Tien Giang Province in the Mekong Delta region, as well as another 21.9km length connecting other regions of the Mekong Delta. The Ho Chi Minh City -Trung Luong Highway is also a part of South -North Highway that connects Ho Chi Minh City with Ha Noi. This is 2,300km in total length and was the first highway in Viet Nam (**Figure 2-97**).
- The Ho Chi Minh City -Trung Luong Highway is going to be built alongside National Highway 1A as a PPP project. This is because National Highway 1A is the only route to take from Ho Chi Minh City to the Mekong Delta region; therefore, the western approach to Ho Chi Minh City is chronically congested.

Figure 2-97: Location of Ho Chi Minh City - Trung Luong Highway

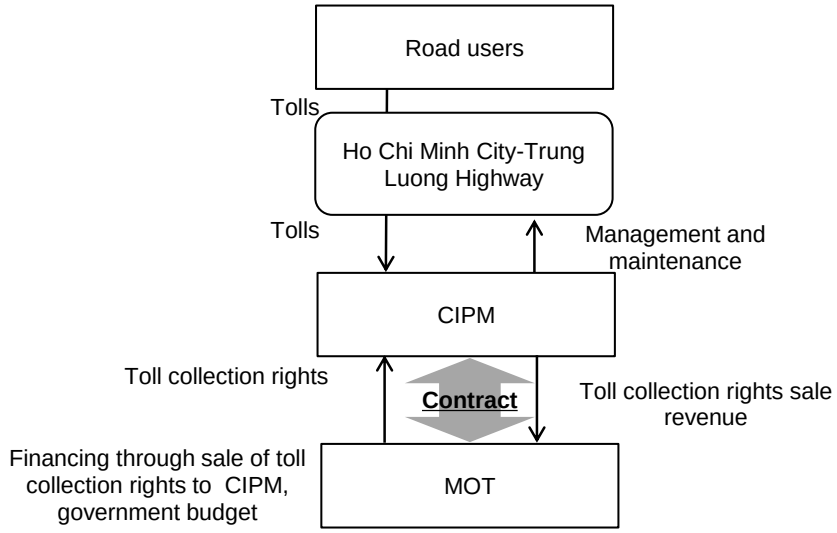
Source: Material provided by JICA

4. Contents of implementation (development and role divisions)

- The construction cost is to be paid out of the sale of toll fee collection rights and national budget. Construction commenced 2005 and was completed and the highway opened on Feb. 3, 2010. With this, travel time from Ho Chi Minh City to Tien Giang Province was shortened to 30 minutes from the previous 90 minutes, assuming a speed of 120kph as the international standard for 8 -lane highways.
- CIPM got the toll collection rights for the Ho Chi Minh City -Trung Luong Highway PPP project. CIPM is operating this highway with the revenue from the collected toll fees. Toll fee collection

started February 25, 2012, approximately 2 years from the opening. The revenue of toll fee collection in the first fiscal year was about US US $19 million. The maintenance cost was $3 million (**Figure 2-98**). Currently, CIPM is planning to auction off the toll fee collection rights for the Ho Chi Minh City -Trung Luong Highway and MOT has approved. It appears that the toll fee collection rights will be sold.

Figure 2-98: Ho Chi Minh City -Trung Luong Highway PPP project scheme



Source: Engineering Consulting Firms Association, Japan; ECFA

- Usage for the 2 years after the opening of the Ho Chi Minh City -Trung Luong Highway was 32,000 to 35,000 vehicles per day. For National Highway 1A, it was 6,000 to 7,000 per day. For the Ho Chi Minh City -Trung Luong Highway, there is a plan to install ITS. KEC Corporation of Korea is implementing the detailed design. After the opening of Ho Chi Minh City -Trung Luong Highway, areas near the highway began to see large development plans emerging, for such things as amusement parks, schools, shopping centers, and hospitals.

5. Government support

- MOT pays the large construction fee for the Ho Chi Minh City -Trung Luong Highway PPP project.

6. Outcome (usage, achievement of the purposes and business situation)

- With the Ho Chi Minh City -Trung Luong Highway PPP project, transportation capacity between Ho Chi Minh City and the Mekong Delta region will be increased and the traffic congestion will be reduced.

7. Management of transport -inherent risks

[Investment risk]

- MOT pays the large construction fee for the Ho Chi Minh City -Trung Luong Highway PPP project. CIPM operates the business by collecting the toll fees. Fee revenue is greater than the cost of maintenance of the road in the Ho Chi Minh City -Trung Luong Highway PPP project. The investment risk for CIPM would appear to be minimal.

1. Basic information

1 -1. Economy	● Viet Nam
1 -2. Transportation mode	● Land transportation (road)
1 -3. Project name	● Dau Giay -Phan Thiet Expressway
1 -4. Major implementer	● MOT, Bitexco Group
1 -5. Site	● Dau Giay -Phan Thiet
1 -6. Period	● Bitexco Group was approved as the first investor in 2010 ● Currently soliciting the second investor for the project
1 -7. Total cost	● US $1.076 billion or greater
1 -8. Form	● BOT

2. Summary

- This project is to construct the part of the South -North Highway from the suburbs of Ho Chi Minh City to the coastal area, running alongside National Highway 1. The aim is to mitigate traffic congestion. It was decided that the first investors would be selected from domestic investors. Currently, the second investor is being solicited from the international community.
- The World Bank and Australia International Development Agency are supporting the documentation.

3. Background and purposes

- Dau Giay is a suburb to the east of Ho Chi Minh City in Thong Nhat Prefecture, Dong Nai Province (**Figure 2-99**). The Dau Giay -Phan Thiet Expressway is a 100km, four -lane highway connecting Dau Giay with Phan Thiet in the coastal area of B?nh Thuan Province.
- The Dau Giay -Phan Thiet Expressway is a part of the South -North Highway and runs along National Highway 1. It was planned as a PPP project aiming to mitigate the traffic congestion on National Highway 1 and to shorten the transport time between inland and the coast.

Figure 2-99: Dau Giay -Phan Thiet Expressway location

Source: Google Maps

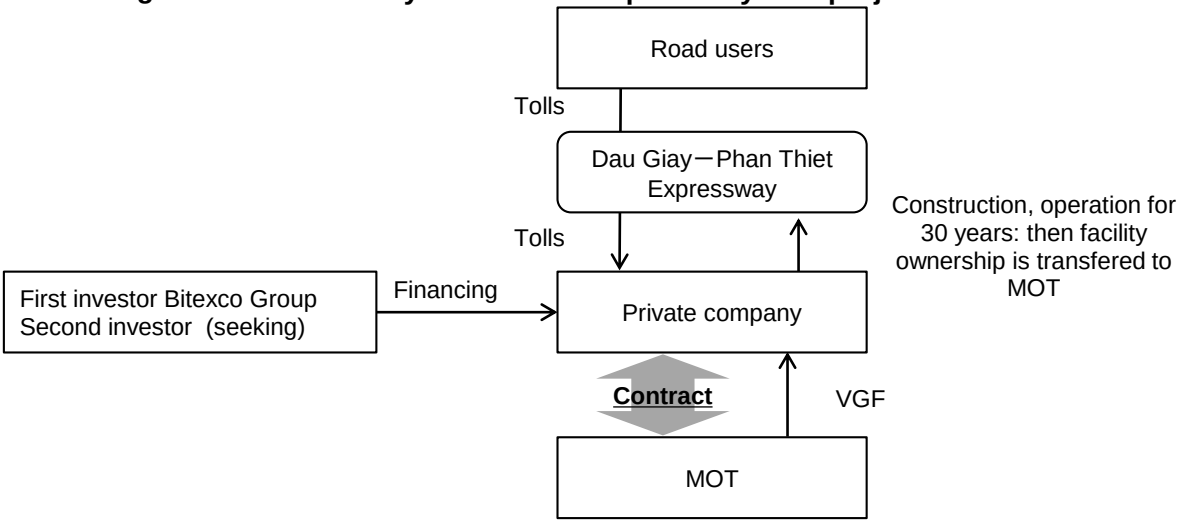
4. Contents of implementation (development and role divisions)

- In March 2010, MOT submitted the case report on the Dau Giay -Phan Thiet Expressway to the Prime Minister. Within the same year, Bitexco Group was approved as the first investor. In July 2011, the Prime Minister approved the project. In October 2012, the government decided the scheme. The feasibility study for the Dau Giay -Phan Thiet Expressway PPP project was supported by the World Bank and the Australian Agency for International Development, and it was implemented by a Japanese company. MOT created the proposal request and is currently soliciting the second investor for the project. MOT is holding investment promotion meetings in

Asian economies.

- The construction cost for the Dau Giay -Phan Thiet Expressway PPP project is over US $1.076 billion. The first investor, Bitexco Group and the second investor will provide investment capital, and a part of the total funded publically, through VGF, to pay the private company that does the construction. The private company will operate and maintain the Dau Giay -Phan Thiet Expressway after construction is finished. In 30 years, it will transfer the ownership to MOT (**Figure 2-100**). The Viet Nam government is responsible for the implementation and payment of the cost of land acquisition, compensation, and relocation of residents. Land acquisition is already completed.

Figure 2-100: Dau Giay -Phan Thiet Expressway PPP project scheme



Source: Bitexco Group

5. Government support

- The Dau Giay -Phan Thiet Expressway PPP project will use VGF.

6. Outcome (usage, achievement of the purposes and business situation)

- Development of the industrial zone along the route of the Dau Giay -Phan Thiet Expressway is being promoted. It is expected that the beach resort areas of Bình Thuan Province, Ninh Thuan Province and Khanh Hoa Province will become more active.
- It is also expected that transport time between places along the Dau Giay -Phan Thiet Expressway will be reduced, companies will experience cost savings and tourism will be promoted.

7. Management of transport -inherent risks

[Investment risk]

- The Dau Giay -Phan Thiet Expressway PPP project will use VGF. It is possible for the private company that has high construction costs to reduce the investment risk by using VGF.

[Land acquisition risk]

- The Viet Nam government has already completed the land acquisition for the right of way of the Dau Giay -Phan Thiet Expressway PPP project; therefore private -sector land acquisition risk has been avoided.

1. Basic information

1 -1. Economy	● Viet Nam
1 -2. Transportation mode	● Maritime transportation
1 -3. Project name	● Lach Huyen International Port (port phase I)
1 -4. Major implementer	● MOT, VINAMARINE
1 -5. Site	● Lach Huyen International Port
1 -6. Period	● Since 2013
1 -7. Total cost	● Construction cost is US $928 million
1 -8. Form	● Operation

2. Summary

- The newly built Lach Huyen International Port is in thriving Haiphong, where many foreign enterprises are expanding. Capacity at the two existing ports is insufficient. The new port will be a deepwater port, following the international trend, and will be able to handle the cargo demands of Northern Viet Nam.
- Construction will be done utilizing the international yen loan. Terminal operation is assumed to be done by a Viet Nam -Japan joint venture. Construction was awarded to a Japanese company.

3. Background and purposes

- Haiphong is the third largest city in Viet Nam. It is located 100km east of Ha Noi. Many foreign enterprises are located there, including many Japanese companies. Haiphong is under the direct governance of the national government. It is also the largest port city in Northern Viet Nam, facing the Gulf of Tonkin.
- Haiphong Port and Cai Lan Port in Ha Long Bay are major trading ports in Northern Viet Nam, but both of them have reached the limits of expansion (**Figure 2-101**). This is setting up a shortage of capacity to meet the future demand of Northern Viet Nam, where container cargo is forecast to greatly increase. In addition, international ports will be expected to have sufficient draft to accommodate the growing worldwide trend toward the use of large container ships, thus it is necessary to create a new deepwater international port in Northern Viet Nam. This is the lead up to the PPP project for operation of the Lach Huyen International Port along the Cat Ba Island coast.

Figure 2-101: Location of Lach Huyen International Port

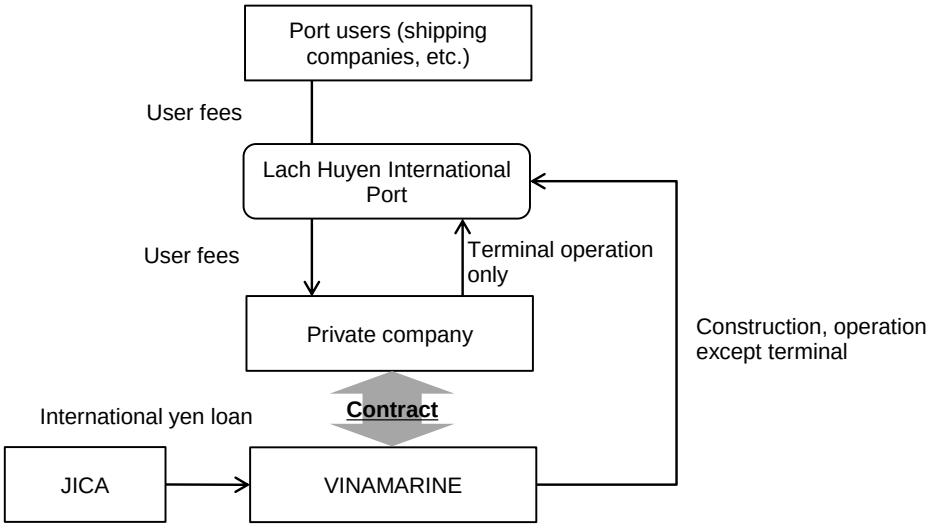
Source: Google Maps

4. Contents of implementation (development and role divisions)

- The cost of construction of the Lach Huyen International Port (port phase I) is US $928 million. Utilizing a US $119 million international yen loan, port facilities are being developed, such as a container terminal, dredging of the shipping route and berths, breakwater and a sand -intrusion barrier. A Japanese company received the order. It is planned that the finished terminal at Lach Huyen International Port will be operated by a Viet Nam -Japan joint venture company. The

other port facilities such as the shipping route, berths and breakwaters are being directly managed by VINAMARINE (**Figure 2-102**). Related to this, the order to build the ancillary infrastructure of Lach Huyen International Port such as access roads and channels was received by a Japanese company utilizing the international yen loan of the STEP scheme.

Figure 2-102: Lach Huyen International Port PPP project scheme



Source: Material provided by JICA

5. Government support

- In the Lach Huyen International Port PPP project, a private company only conducts terminal operation while VINAMARINE has constructed the port which occupies major portion of the total cost and operates other facilities which cannot be expected.

6. Outcome (usage, achievement of the purposes and business situation)

- It is expected that Lach Huyen International Port will be able to handle an increasing volume of cargo and large container cargo ships, so that it can respond to the forecast strong logistics demand in Northern Viet Nam.

7. Management of transport -inherent risks

[Investment risk]

- Lach Huyen International Port PPP project utilizes the international yen loan and VINAMARINE will construct the port facilities. The private company will not do the construction, which has a large cost, in the Lach Huyen International Port PPP project; therefore, private -sector investment risk can be reduced.

1. Basic information

1 -1. Economy	● Viet Nam
1 -2. Transportation mode	● Air transportation
1 -3. Project name	● Long Thanh International Airport
1 -4. Major implementer	● MOT
1 -5. Site	● Long Thanh International Airport
1 -6. Period	● Since 2014
1 -7. Total cost	● US $5.6 billion
1 -8. Form	● BOT

2. Summary

- Although Tan Son Nhat International Airport is convenient due to being in close proximity to Ho Chi Minh City, expansion is difficult. Therefore, construction of a new international airport is planned.
- Construction is planned to be paid for through a public offering of state -owned airport company and private investment. Phase 1A construction will be completed in 2023.

3. Background and purposes

- Long Thanh International Airport is a new international airport being planned for the Long Thanh District of Dong Nai Province, 35km east of Ho Chi Minh City (**Figure 2-103**).
- Tan Son Nhat International Airport is close to the center of Ho Chi Minh City and is surrounded by residential areas. Future expansion will be difficult. It is forecast that air transport facilities will not meet future air transport needs. This is the impetus for the planned construction of Long Thanh International Airport as a PPP project.

Figure 2-103: Location of Long Thanh International Airport

Source: MLIT Japan

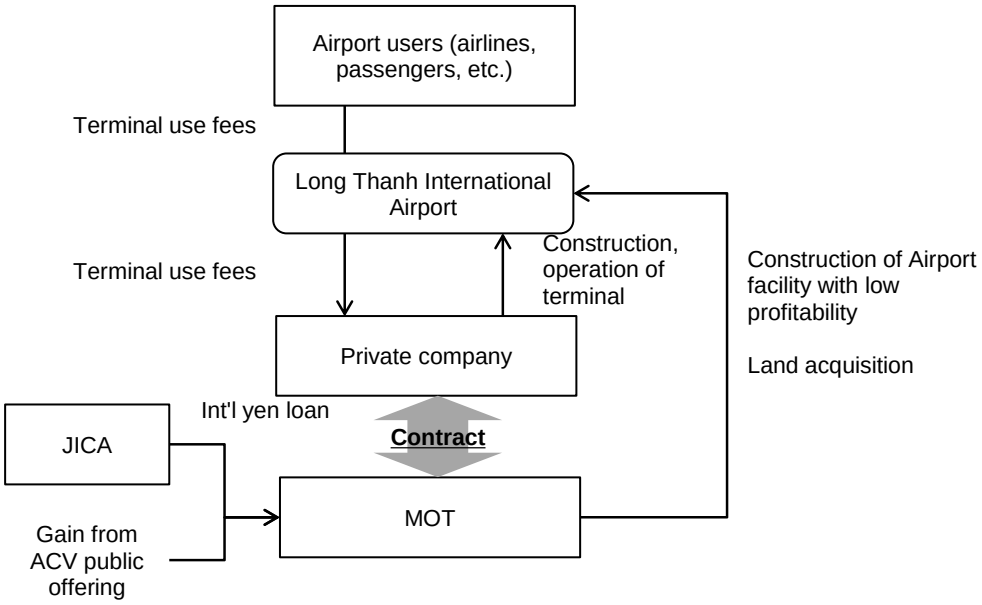
4. Contents of implementation (development and role divisions)

- The plan for the Long Thanh International Airport PPP project is to construct the passenger terminal, parking lot, cargo terminal, airplane fuel supply system, in -flight meal factory and telecommunication system. Construction projects are divided into Phase 1A, Phase 1B and Phase 2. Construction of the passenger terminal and one runway is planned for Phase 1A. Construction of another runway is planned for Phase 1B. For Phase 2, expansion of the land is planned.
- The airport facilities such as runways, apron, and taxiways are estimated to have low profitability and are to be built using public capital. The terminal building, which will be more profitable, will be built and operated using private investment. Use of international yen loans is being studied (**Figure 2-127**). Out of the investment amount for Phase 1A, US $2.7 billion will be paid by the government. It is planned to solicit US $2.9 billion of investment from the private sector. The

passenger terminal land acquisition will be done by the Viet Nam government.

- MOT has submitted the plan to the Prime Minister for a public offering in 2014 of ACV, the state -owned airport company, pending approval. After approval is given, the funds from the public offering will be used to pay for the construction of Long Thanh International Airport.

Figure 2-104: Long Thanh International Airport PPP project scheme



Source: Material provided by JICA

5. Government support

- The Viet Nam government does the land acquisition in the Long Thanh International Airport PPP project.

6. Outcome (usage, achievement of the purposes and business situation)

- With Long Thanh International Airport PPP project, Ho Chi Minh City can attract more air transportation passengers besides existing Tan Son Nhat International Airport.

7. Management of transport -inherent risks

[Investment risk]

- In the Long Thanh International Airport PPP project, MOT builds the airport by utilizing Yen loan of JICA and can reduce financial burden of financing huge amount of construction cost.

[Land acquisition risk]

- In the Long Thanh International Airport PPP project, the Viet Nam government does the land acquisition; therefore it is possible to avoid private -sector land acquisition risk

3. Appendix

3-1. Abbreviations and terms

[Common]

Type	Abbreviation/Term	Name
Organization	MOT	Ministry of Transportation
	BOT	Build Operate and Transfer
	BTO	Build Transfer Operate
	EIRR	Equity Internal Rate of Return
General term	ITS	Intelligent Transport Systems
	TEU	twenty-foot equivalent unit
	VGF	Viability Gap Funding

[By Economy]

Economies	Type	Abbreviation/Term	Name
Australia	Organization	LMA	Linking Melbourne Authority
	Place-name	NSW	New South Wales
	General term	RTA	Roads and Traffic Authority
Canada	Organization	CLCO	Canada Line Rapid Transit Inc.
		GVTA	Greater Vancouver Transportation Authority
	PPP-related systems	DBB	Design Bid Build
		DBFM	Design, Build, Financing and Maintenance
		NPV	Net Present Value
		PSC	Public Sector Comparator
		RFI	Request for Information
		RFP	Request for Proposal
		SPV	Special Purpose Vehicle
		VFM	Value For Money
	Place-name	BC	British Columbia's
Chile	Organization	DGAC	Dirección General de Aeronáutica Civil
		ICAO	International Civil Aviation Organization
		MOP	The Ministry of Public Works, Chile
	General term	CCTV	Closed Circuit Television System
Indonesia	Organization	IIGF	Indonesia Infrastructure Guarantee Fund
	General term	EIRR	Economic internal rate of return
		MPW	Ministry of Public Works, Indonesia
Japan	Organization	JR	Japan railway
		MLIT	Ministry of Land, Infrastructure, Transport and Tourism,Japan
Korea	Organization	AMEC	Association of Mining and Exploration Companies
		IBC	Incheon Bridge Corporation
		MOLIT	Ministry of Land Infrastructure and Transport, Korea

Economies	Type	Abbreviation/Term	Name
	PPP-related systems	SPC	Special Purpose Company
Malaysia	Organization	ERLSB	Express Rail Link Sdn. Bhd.
		ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
		KTK	Knnas Terminal Klang Sdn. Bhd.
	Organization	LEKAS	Lebuhraya Kajang Seremban
		MAHB	Malaysia Airports Holdings Berhad
		MHA	Ministry of Home Affairs, Malaysia
		Prasarana	Syarikat Prasarana Negara Berhad
	General term	E-MAS	Eco-Management Audit Scheme
		KCT	Klang Container Terminal
		KLIA	Kuala Lumpur International Airport
Mexico	Organization	SCHP	The Secretariat of Finance and Public Credit, Mexico
		SCT	The Secretariat of Communications and Transportation, Mexico
New Zealand	Organization	NZTA	New Zealand Transport Agency
Papua New Guinea	General term	NAC	National Airports Corporation
The Philippines	Organization	CAAP	Civil Aviation Authority of the Philippines
		DOTC	Department of Transportation and Communications, Philippines
		DPWH	Department of Public Works and Highways, Philippines
		GMR	GMR Infrastructure Limited
		PIDC	Private Infrastructure Development Corp.
Chinese Taipei	Organization	FETC	Far Eastern Electronic Toll Collection Co.
		MOTC	Ministry of Transportation and Communications, Chinese Taipei
		THSRC	Taiwan High Speed Rail Co. Ltd.
Thailand	Organization	BMCL	Bangkok. Metro Public Company Limited
		EXAT	Expressway Authority of Thailand
		LCIT	Leam Chabang International Terminal Company Limited
		MRTA	Mass Rapid. Transit Authority of Thailand
		PAT	Port Authority of Thailand
		SRT	State Railway of Thailand
		STC	Siam Hi-Tech Steel Center Company Limited
	General term	BTS	Bangkok Mass Transit System
		DP	Documents against Payment
		MRT	Mass Rapid Transit
United States	Organization	CBE	Citizens for a Better Environment
		FTA	Federal Transit Administration
		RTD	The Regional Transportation District
		USDOT	United States Department of Transportation
		VDOT	Virginia Department of Transportation

Economies	Type	Abbreviation/Term	Name
	PPP-related systems	DBFOM	Design Build Finance and Operate Maintenance
		TIFIA	Transportation Infrastructure Finance and Innovation Act
	General term	CRMF	Commuter Rail Maintenance Facility
		DUS	Denver Union Station
		HOT	High Occupancy Toll
		HOV	High Occupancy Vehicle
		LLC	Limited liability Company
		PABs	Private Activity Bonds
Vietnam	Organization	BVEC	Bien Hoa-Vung Tau Highway Joint-Stock Company Limited
		CIPM	Cuu Long Corporation for Investment Development and Project Management of Infrastructure
		KEC	Korea Expressway Corporation

3-2. Research Materials

Economies	Title (Publication, Year)
Australia	Infrastructure Planning and Delivery: Best Practice Case Studies(Australian Government, Department of Infrastructure and Transport)
	Partnerships Victoria Project Summary(LMA)
	DFAT- funded Project Enhancing transport supply chain connectivity in APEC developing Economies through BANKABLE Public Private Partnerships in transport infrastructure development (Department of Infrastructure and Regional Development, 2015)
Canada	2011 Value for Money Report(PPP CANADA)
	2014 PPP Experience on the Canada Line(Trans Link)
	2014 Territorial Case Study(PPP CANADA)
Indonesia	2011 PPP Book(BAPPENAS)
	2013 PPP Book(BAPPENAS)
Japan	Overview of urban development plan in Toyama City(Toyama City,2011)
	Tsukuba Express Construction Story(Urban Rapid Transit Study Group,2007)
The Philippines	PPPs@PH,4th edition(PPP Center)
Chinese Taipei	The Advancement of Taiwan's Distance -Based Freeway Electronic Toll Collection(MOTC)
Thailand	The Market Sounding for Sri Rat -Dao Khanong -Western Outer Ring Road Expressway Project(EXAT, 2013)
	BTS Group annual report; Comparison and Analysis of Case Studies using BOT method on transport social resources in the large Asian cities (Japanese language), Tokyo Institute of Technology, Sinya Hanaoka; Civil Engineering Association essays collection F4 (Building Management) Special Issue(2010)
	BMCL annual report (BMCL)

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APEC#215-TR-01.4 ISBN 978-981-09-4543-7