

10 HOW TO MAKE IT HAPPEN

10.1 MANAGEMENT CHALLENGES

(1) Establishment of Jabodetabek Transportation Authority

The inevitable and foremost imperative institutional issue in the transportation sector is insignificant coordination and communications among central ministries, Kimpraswil, Ministry of Communication and Bappenas, and local government agencies. Not only vertical discrepancy but also a lack of consensus on regional planning across each local government's jurisdiction makes it more difficult to formulate an integrated transportation system development plan in the region. BKSP should be the main player to coordinate among local administrations; however, insufficient resources and overlapping responsibilities with central and provincial agencies make it difficult for BKSP to perform its duties with proficiency. Taking into account its current legal ground and functions, a legally and administratively independent and more flexible new institution should be considered.

Establishment of a new agency, Jabodetabek Transportation Authority, is strongly recommended to make consistent a metropolitan-wide transportation system development plan and to manage transportation demand in the region. However, if it needs time to establish such a new agency, a planning commission is to be established to pursue the tasks in short term. The Study Team recommends to establish a transportation authority for the region in early stage of the master plan period and to envisages the next step to be an establishment of an urban development authority.

(a) Jabodetabek Transportation Planning Commission

The Jabodetabek Transportation Planning Commission is set up under the direction of the central ministries, consisting of transport-related personnel from sub-national governments. This executive body shall consist of heads of respective provincial and local governments, as well as representatives from the ministries, such as Kimpraswil, MoC, MoHA and Bappenas. Its main functions are to: 1) coordinate respective transportation planning at local governments into an incorporated regional transportation plan, 2) conduct research and survey for transportation planning, 3) coordinate studies in the region to be utilized for an integrated transportation planning, and 4) manage the data collected through the Study particularly the surveys to be used for academic research, planning purpose, and so on. A permanent secretariat is established to support the commission and carry out daily operations. Funding for the commission and secretariat shall in the form of contribution by the commission members.

(b) Jabodetabek Transportation Authority

The Jabodetabek Transportation Authority (JTA) is established as an independent public corporation, which has main accountability to the public, not only to the central or sub-national governments. The authority would be endorsed by either presidential decree or government law to stand as an independent public corporation. It oversees all land transportation issues and has main responsibilities to: 1) formulate regional transportation policy, 2) formulate integrated transportation planning, including road network development, railway (MRT, LRT and subway) development, traffic management and public transportation system management, 3) implement the integrated transportation planning and programs, 4) issue licenses and control public transportation with bus route license, public transport business license, bus terminal development permission, and so on, 5) regulate public transport services, such as trunk bus, MRT, LRT and so on, 6) support development of inter-Kota or inter-Kabupaten highway network, and 7) carry out traffic management measures, such as road pricing, park and ride, and park and bus ride.

The Authority would be operated by the revenue from road pricing and surcharge on fuel tax and financial contribution or subsidy from DKI Jakarta and the relevant local governments. As an independent corporation, however, its primary task is to be financially sovereign and it should be underlined that a disclosure of financial status is one of the most important aspects to secure its position as a public corporation offering public services to users in the region. As a public corporation, it could also raise fund from the capital market by issuing corporate bond.

(2) Review of Transportation Authority in Other Metropolitan Areas

A variety of metropolitan-wide organizations have been established in other countries as listed in Table 10.1. Metro in Portland, USA, an independent institution from regional or local government, has unique characteristics in that council members are elected by the residents of the metropolitan region, consisting of 24 cities. Application of Metro Model seems difficult for Jabodetabek because it needs maturity of democracy.

On the other hand, many transportation authorities have functions of transportation policy making, planning and operation of transit system. The only exception is Public Transport Council (PTC) in Singapore, which deals with regulation, bus operation planning, and bus fare policy. Buses are operated by private companies.

In the context in Jabodetabek, the PTC model seems appropriate and the JTA should have a function of policy making, planning and regulating the transportation services. Operation can be left for private companies.

Table 10.1 Comparison of Metropolitan-wide Transportation Authority and Relevant Organizations

	Singapore Land Transport Authority (LTA) Singapore	Public Transport Council (PTC) Singapore	Greater Toronto Transit Authority (GTTA)	The Washington Metropolitan Area Transit Authority. USA	METRO Oregon, USA
1.Location	Singapore	Singapore	Greater Toronto Area (GTA) (Toronto city and the suburban areas), Canada	Washington DC and suburban counties of Maryland, Northern Virginia (states)	24 cities of Clackamas, Multnomah and Washington counties in Oregon (state)
2.Covered Area	Singapore (636 sq km)	Singapore (636 sq km)	8,000 sq km (3,000 sq miles)	1,500 sq miles (3,885 sq km)	460 sq miles (1,192 sq km)
3.Covered Population	4.2 million (total population)	4.2 million (total population)	5 million	3.4 million	1.3 million
4.Legal Basis (Endorsement)	State Parliament (Land Transport Authority Act, etc 7 acts)	State Parliament (Public Transport Council Act)	Provincial Law (Transit Act 2001 passed by the Ontario Legislature).	Interstate Compact endorsed by State and Federal Congress (Washington Metropolitan Area Transit Authority)	Home-rule Charter (approved by voters in 24 cities of residents).
5.Institutional Setup *1	Statutory Board + Operation body	Statutory Board + Council	Crown Agency of the Province under the Ministry of Transportation	Statutory Board + Operation body	Directly elected regional government directed by Council President & Council
6.Legislative body	None	None	None	None	None
7.State of Institution	Permanent Establishment	Permanent Establishment	Permanent Establishment	Permanent Establishment	Permanent Establishment
8.Supervisory Institution	Ministry of Transport	Ministry of Transport (Singapore Land Transport Authority)	Ministry of Transportation	n.a.	None
9.Fund Resources	Transit revenue Financial support from the state government	n.a.	Transit revenue. Financial support from Ontario province.	Transit revenue and financial support from state and local governments	Enterprise revenue, property taxes, interfund transfers, grants from state and local governments, excise tax and intergovernmental revenues

Table 10.1 Comparison of Metropolitan-wide Transportation Authority and Relevant Organization (continued)

	Singapore Land Transport Authority (LTA) Singapore	Public Transport Council (PTC) Singapore	Greater Toronto Transit Authority (GTTA)	The Washington Metropolitan Area Transit Authority. USA	METRO Oregon, USA
10. Share of Funds	Government provides transport infrastructure including the first set of operating assets. Passenger revenues cover operating costs and the second set of operating assets.	n.a.	The provincial government funds operating costs that are not covered by passenger fares and other revenues. (80% – 90% of costs is covered by the revenue).	Passenger revenue 23.2% Other operating revenue 3% Other source revenues 29.6% Capital grant & subsidy 44.2% (Federal government support 76.6% of US169.9 mil capital improvement program)	Enterprise revenue 51% Property taxes 14% Interfund transfer 13% Shared revenues and Grants from local governments 13%
11. Transport Mode	MRT LRT Public bus (under PTS)	PTC does not directly operate bus services.	Train and Public bus	Metrail (subway) & Public bus	(Transportation planning) Metro does not operate any transport modes by itself.
12. Activity	<ul style="list-style-type: none"> – Policy making – Land transport planning – Public transport licensing – Vehicle registration and licensing – Setting guidelines and enforcing standards – Operation of public transportation (MRT, LRT and public bus) 	<ul style="list-style-type: none"> – Approving bus services – Regulating bus service standards – Approving bus and train fares 	<ul style="list-style-type: none"> – Transport policy making – Transit operation 	<ul style="list-style-type: none"> – Area transit planning – Operation of public transportation (Metrail and public bus) – Metro Transit Police – Infrastructure development and rehabilitation 	<ul style="list-style-type: none"> – Land-use planning – Transportation planning – Parks, trails and greenspaces – Recycling & waste prevention – Garbage & hazardous waste – The Oregon Zoo – Data Resource Center, etc.

10-4

*1 Institutional Setup: Whether the institution is an affiliation of government agency or independent institution. Statutory board means it is an autonomous organization under limited supervision and instruction from transport-related ministries.
PTC: Public Transport Council (PTC)

(3) Public Transportation Enterprises Reform

Public transportation enterprises, namely, Perum PPD, a state-owned bus company and PT. KA, a state-owned railway company, should be rationalized. Although privatization is yet to be discussed further, the rationalization and efficiency of these companies are the conditions for the private-sector participation.

(4) Capacity Building for Officials in Local Government

Training courses provided by relevant ministries will be restructured and incorporated in an integrated transport planning program to deliver broad training courses under one structured and stepwise program. The goal of the program is to deliver administrative, institutional and technical knowledge and skills, such as transport planning, capital management, project management, OMR (Operation, Maintenance, and Rehabilitation) management, and so on, in order for public servants of local governments to administer transport programs proficiently. It also aims at consolidating the limited but rather scattered resources among ministries and local governments to effectively utilize to bring out maximum outcomes.

An integrated transport planning program, which is not divided vertically by line ministry, but is programmed to train local staff in horizontal structure, is proposed.

10.2 PAYING FOR BETTER TRANSPORTATION¹⁸

10.2.1 Principle of Cost Burden

The financing plan is formulated so as to promote the restructuring and reforming programs of facility and infrastructure. To fill the gap between the current level of revenue and the required cost for development, additional financial sources should be sought as follows.

(1) Increase of Revenue for Transportation Sector

Increase of revenue for transportation sector such as an increase of rate for gasoline tax and road pricing are just some of the possibilities. These revenues should be earmarked for stable development of transportation systems.

(2) Reduction of Subsidy for Public Transportation

Public transportation fare for economy class is currently set at low level taking in consideration the affordability of the low-income people. Provision of affordable means of transportation for the poor could be achieved through a direct way of delivering subsidy to the target group. It will reduce expenditure of the governments by not providing the subsidy to the people who can afford to pay higher transportation fare. Also,

¹⁸ Refer to Technical Report Volume 11: Funding Capacity Improvement.

in the long run, the amount of subsidy is expected to naturally decrease as people's income improves.

(3) Inclusion of Private Sector in Transportation System Development

Regulations on private investment in transportation sector should be reviewed and modified to provide sound investment environment for the private sector in transportation business. This includes toll rate setting mechanism and provision of development rights. The role and responsibility sharing system between the public and private sectors should be clearly determined.

Provision of the land development rights to private investors in the surrounding area of railway stations or interchanges of toll roads will make it possible to internalize the development benefits of transportation system development. This, however, should be done in a manner well-planned and controlled in consistency with the land use plan.

(4) Integrated Transportation System Development with Urban Development

Transportation system development would bring about direct and indirect benefits to the society. Indirect benefits such as increase in land value along the transportation corridor, however, cannot be absorbed by the transportation system development project. The following concepts therefore attempt to internalize the development benefits of transportation system.

Internalization of Development Benefit of Mass Transit System

Generally speaking, the beneficiaries of a mass transit system are two distinct groups: mass transit passengers and landowners along the railway line. Passengers of public transportation systems will benefit from fast and comfortable public transport services in exchange for fares that they pay.

The route side landowners/landlords enjoy the advancement in the value of their properties due to their proximity to the stations. They will receive the development benefit when selling the land in the property market or when they raise the rent they charge their tenants. Property tax is a mechanism to absorb such capital gains in the long run. However, it cannot mitigate the financial burden, which the public sector has to shoulder when developing a transportation system.

There are two practical methods for the public sector to instantly absorb the property-related benefit or to mitigate its financial burden. They are:

- To involve frontage landowners in the construction of a station and its pedestrian facilities, and
- To designate a Special Development Zone where urban renewal is necessary but difficult for the landowners to carry out alone, making the landowners decide to sell their

development right to an internationally competitive developer.

Internalization of Development Benefit of Toll Roads

Toll road business is not an easy business to enter into due to legalities of biddings and many economic uncertainties. In addition, it seems impossible to make the viability financially feasible on some sections with least traffic. In such a case, it can be considered to give the investors area-development permission near interchange to meet prospective regional development context in combination with toll road business. This may relieve the financial burden of the investors, and could promote the toll road business with a view to overcoming financial problems.

10.2.2 Master Plan Cost¹⁹

Table 10.2 summarizes fund requirement for the Master Plan, which includes capital investment costs and O&M costs during the period from 2004 to 2020. A total of Rp. 91,270 billion is required for the period in market prices of January 2003 excluding inflation, of which Rp. 76,150 billion and Rp. 15,120 billion are required for investment and for operation and maintenance, respectively. In terms of the GRDP share, it requires the government to allocate 0.8% of the GRDP of the Jabodetabek region for the implementation of the Master Plan throughout the period from 2004 to 2020.

Table 10.2 Master Plan Cost (2004-2020)

Unit: Rp. billion

	Investment cost	Operation & maintenance cost	Total	Share
Railway Network Development	29,390	6,140	35,530	39%
Road Network Development	39,510	6,360	45,870	55%
Busway (Widening)	4,090	210	4,300	
Other Traffic Facilities /TDM ¹⁾	3,160	2,410	5,570	6%
Total of MP Cost	76,150	15,120	91,270	100%

Note: 1) The cost for busway facilities, traffic management and TDM is included.

The cost is estimated at January 2003 market prices and price escalation is not included. However, the cost of 4 projects on which the Pre FS has been carried out is revised based on the results of the Pre FS.

The cost for the railway and the road network development accounts for 94% of the total cost. The rest amounting to Rp. 5,570 billion is required for the development of the busway facilities, the traffic management system and the traffic demand management (TDM) system.

From the viewpoint of the timing of cost distribution, 27%, 25% and 48% of the total cost need to be allocated in the short-term period until 2007, the intermediate period (2008-2010) and the long term period (2011-2020), respectively (see Table 10.3 and Figure 10.1).

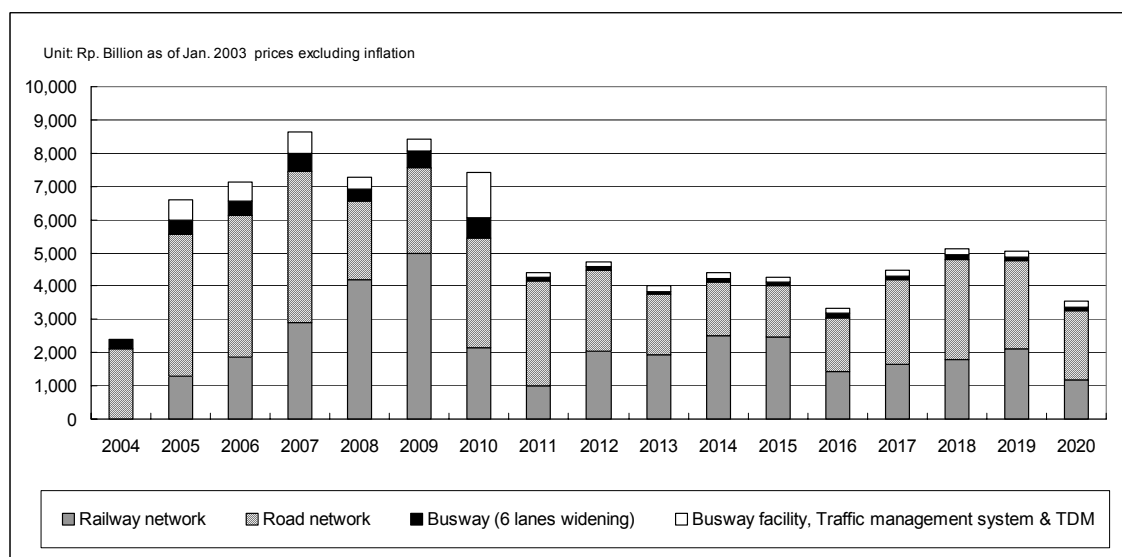
¹⁹ Refer to Technical Report Volume 11: Funding Capacity Improvement.

Table 10.3 Master Plan Cost by Development Term (2004-2020)

Unit: Rp. billion

	Development Term			Total
	Short-term (2004-2007)	Intermediate -term (2008-2010)	Long-term (2011-2020)	
Railway Network Development	6,080	11,310	18,140	35,530
Road Network Development	15,190	8,260	22,420	45,870
Busway (Widening)	1,670	1,480	1,150	4,300
Other Traffic Facilities/ TDM	1,850	2,050	1,670	5,570
Total of MP Cost %	24,790 27%	23,100 25%	43,380 48%	91,270 100%

Source: SITRAMP Estimate



Source: SITRAMP Estimate

Figure 10.1 Annual Allocation of Master Plan Cost (2004-2020)

10.2.3 Master Plan Implementation and Private Initiative Development²⁰

(1) Road Network Development

Functional road classification is completely consistent with jurisdiction. Estimated costs for the road network development are allocated to each government under the assumption that this situation will not change even in the future. For the projects with sufficient traffic demand, from the financial viewpoint expected, the private initiative will be introduced.

²⁰ Refer to Technical Report Volume 11: Funding Capacity Improvement

(2) Railway Network Development

(a) Jabotabek Railway

The scheme for the management and operation has continuously been discussed among responsible and concerned officers, including a possibility of privatization. However, it is assumed that PT. KA will take responsibility on the management and operation in this examination as it is. The following responsibility was assumed:

- Basic infrastructure facilities, such as civil and track works, electrical works and buildings, are provided by the central government;
- Maintenance works and procurement of rolling stock will be carried out by PT. KA; and
- All revenues accruing from passenger and commodity transportation business and affiliated works will belong to PT. KA.

(b) Jakarta MRT Project (Kota - Ciputat)

There are some uncertainties on the management and operation condition due to the ongoing examination on preliminary design and cost estimates. Although the details are still subject to change at this moment, it was assumed that all construction works would be taken care of by the government such as the central government, DKI Jakarta and/or a new organization. For the operation of the MRT, a new public or private enterprise would be established. It requires the enterprise to provide operation services of the Jakarta MRT self-sufficiently.

(3) Busway Development

(a) Busway on Jl. Thamrin and Sudirman

DKI Jakarta has started a new busway system on Jl. Thamrin and Sudirman on January 2004. Although a detailed management and operation method still remains to be seen, DKI Jakarta will be responsible for the management and operation in principle.

(b) Other Busways

The most possible measure is that the government will give a concession in busway business to current private bus companies through bidding. In such a case, the cost for road facility development such as widening will be covered by the government and management and operation of bus services will be provided by eligible private companies. Concession revenue of busway operation will recover the cost for busway facility development such as bus stops and bus location system.

(4) Private Initiative Development and Public Cost Requirement for MP Implementation

Taking into consideration the private involvement and revenue as described above, the

cost burden by the public sector is estimated by sub-sector as shown in Table 10.4. Total master plan cost amounts to Rp. 91,270 billion, of which Rp. 24,090 billion or 26% of the total cost could be reduced from the public cost burden due to private initiative development. Consequently, the funding requirement of the public sector for the implementation of the Master Plan is estimated at Rp. 67,180 billion at January 2003 market prices excluding inflation for the period 2004-2020.

Table 10.4 Master Plan Cost and Private Initiative Development (2004-2020)

	MP Cost	Private Initiative Development	Net Public Cost Burden
			Unit: Rp. billion
Railway Network Development	35,530	16,250 1)	19,280
Road Network Development	45,870	6,920 2)	38,950
Busway (Widening)	4,300	0	4,300
Busway Facility	920	920 3)	0
Traffic Management System	2,980	0	2,980
TDM	1,670	0	1,670
Total	91,270	24,090	67,180
%	100%	26%	74%

Source: SITRAMP Estimate

Note: 1) The operation service of Jabotabek railway and JKT MRT including the procurement of rolling stock will be provided by PT.KA and by a new enterprise, respectively.

2) Private initiative development will be introduced for 2nd JORR (Section1~14), Jatiasi Toll (R02a) and Depok - Antasari Toll (R08a).

3) Concession revenue of busway operation will recover the cost for busway facility development such as bus stops and bus location system.

10.2.4 Public Cost for Transportation Sector²¹

Besides the cost for the master plan amounting to Rp. 67,180 billion, it requires the central and the local governments to share the maintenance cost for the existing roads, which is estimated to be Rp. 13,220 billion for the period from 2004 to 2020. As shown in Table 10.5, the total public cost for urban transportation sector in the Jabodetabek region is Rp. 80,400 billion, which accounts for 0.72% of the GRDP throughout the master plan period.

²¹ Refer to Technical Report Volume 11: Funding Capacity Improvement

Table 10.5 Public Cost for Transportation Sector 2004 – 2020

	Unit: Rp. billion
	Cost (2004 – 2020)
Master Plan Cost (Public Burden)	67,180
Maintenance Cost for Existing Roads	
Central Government	2,600
West Java Provincial Government	520
Banten Provincial Government	150
DKI Jakarta	6,060
Kota Bekasi	570
Kota Bogor	380
Kota Depok	210
Kabupaten Bekasi	860
Kabupaten Bogor	860
Kota Tangerang	360
Kabupaten Tangerang	650
Total of maintenance cost of existing roads	13,220
Total Public Cost for Transportation Sector	80,400

Source: SITRAMP Estimate

Note: The operation and maintenance cost of the existing Jabotabek railway is not included in the figure, as it is the cost for PT. KA.

10.2.5 Funding Capability of Government Budget²²

The size of current transportation budget allocated for the transportation sector of the Jabodetabek, including the central government, provincial government and Kota/Kabupaten governments, was estimated in the Jabodetabek region in the FY2002. For the estimation of the future available fund of the central government and the local governments to allocate for the transportation sector, the following assumptions are taken into account:

- It is assumed that the expenditure for transportation sector would increase in proportion to the GRDP growth throughout the master plan period in principle.
- The central government currently allocates approximately 0.08% in terms of the GRDP share to the Jabodetabek region, which is less than one-fifth of the national average of 0.46% in FY2003. In the future, the central government will be required to increase the share and to allocate 0.2% of the GRDP at the minimum.
- For the budget to the transportation expenditure of Kota and Kabupaten governments, it is assumed that they could afford to allocate the same share in the future, of which 70% would be the direct expenditure for the maintenance, rehabilitation and development of the transportation sector. The rest is assumed to be compensated to the indirect or administration cost related to the transportation sector.
- Consequently, the local government is required to allocate 0.25% of the GRDP to the

²² Refer to Technical Report Volume 11: Funding Capacity Improvement

transportation expenditure budget on the average.

Based on the assumptions above, the future funding capability of the central and local governments for transportation sector is estimated throughout the master plan period, from 2004 – 2020, and this is shown in Table 10.6. Total amount is estimated at Rp. 49,000 billion, accounting for 0.44% of the GRDP of the Jabodetabek region during the period, which does not meet the fund requirements of the public burden of Rp. 80,400 billion as proved in Table 10.6. The cumulative deficits of the fund will be 31,400 billion in 2020 excluding price escalation. Therefore, it is necessary to seek additional funding source.

Table 10.6 Funding Capability of Government and Deficit for Transport Sector Development, 2004 – 2020

	(Rp. billion)	Assumptions
Funding Capability of Governments		
1) Central government	21,400	0.08% of GRDP in 2002
2) Local governments	27,600	0.20 % of GRDP in 2007-2020
Total	49,000	0.25% of GRDP in 2004-2020
		0.44% of GRDP in 2004-2020 (average)
Public Fund Requirement		
1) Net Public Cost Burden of MP	67,180	See Table 10.4
2) Maintenance Cost of Existing Roads	13,220	See Table 10.5
Total	80,400	0.72% of GRDP
Deficit	31,400	

Source: SITRAMP Estimate

10.2.6 Additional Revenue Sources²³

Additional budgets could be available from such sources as increase in fuel tax rate, revenue from TDM and new taxation on the properties.

(1) Increase of Fuel Tax Rate

Fuel tax and subsidy rates in the world vary and range from heavy subsidies such as Indonesia in the late 1990s to high rate of taxation in the industrialized countries. For example, an average tax rate of petroleum products was 67% and 44% in OECD countries and Non-OECD countries in 1999 respectively. The Government of Indonesia announced the elimination of subsidies on fuel consumption starting January 2003, in order to adjust the retail price of fuel products to international market price. On the other hand, in terms of taxation on fuel consumption, the VAT and fuel tax are currently imposed on fuel products at 10% and 5%, respectively.

As possible financial sources to compensate for the shortage of funds to implement the Master Plan, the increase in fuel tax rate and the incremental tax revenue are examined. It is assumed that phased increase in the rate of fuel tax would be implemented to 10% in

²³ Refer to Technical Report Volume 11: Funding Capacity Improvement

2005 and 20% in 2010 from 5% of the current rate.

The incremental revenue is estimated at Rp. 14,000 billion in terms of market prices in January 2003 throughout the period from 2004 to 2020 as shown in Table 10.7.

Table 10.7 Fuel Tax Rate Increase and Incremental Revenue 2004-2020

Period	Fuel tax rate	Incremental fuel tax revenue
- 2004	5% same as current rate	-
2005 – 2009	10%- 18%	Rp. 1,400 billion
2010 – 2014	20%	Rp. 2,600 billion
2015 – 2020	20%	Rp. 10,000 billion
Total Increase		Rp. 14,000 billion

Source: SITRAMP

The current level of fuel tax in Indonesia is considerably low compared with other Asian countries and it is even one of the lowest in the world. The proposed rate at 20% in 2010 is still lower. Regarding the cost burden of the consumers, an additional burden due to the increase in tax rate is small, because the implementation of the Master Plan will result in decrease in fuel consumption due to the alleviation of traffic congestion and the saving value in the fuel consumption is estimated at approximately Rp. 12,000 billion for 2004 to 2020.

(2) Revenue of TDM²⁴

According to the scenario of the implementation of road pricing (2005~2006) and area pricing policy (2007~2020), the revenue of the TDM is estimated under the following assumptions:

- Levy rate: Rp.8,000 (2005~2009), Rp. 16,000 (2010~2014) and Rp.20,000 (2015~2020) per vehicle for entering the restricted area; and
- Considering the restricted hours of the TDM and the reduction of levy rate for such as residents in restricted area and vehicles entering the restricted area more than one time per day, 20% of the generated traffic in the area is assumed to be imposed by the levy.

Total revenue of road pricing or area pricing is estimated at Rp. 15,100 billion throughout the period from 2005 to 2020.

(3) New Taxation (Urban Development Tax)

Urban-facility development including transportation facilities and property value has a close relationship in the urban area. There are many countries, which have been levying an urban development tax on property such as land and buildings and it is one of the important resources to develop urban-related facilities under a scheme of city plan.

Currently in Indonesia, property tax on land and buildings (PBB) has been levied at a rate

²⁴ Refer to Vol. 2 Pre Feasibility Study: 3 Traffic Demand Management (TDM) Scheme in CBD

of 0.1% - 0.2% to assessed property value as a national tax. The PBB revenue is transferred to the local government as “Revenue Sharing” after the financial decentralization policy.

The SITRAMP proposes a new urban development tax based on assessed property value. The tax rate is one-tenth of current property tax, which is equivalent to 0.01% of the assessed property value. It is assumed that the urban development tax will be allocated in the same manner as the current scheme of the revenue sharing for the land and building tax (PBB). The revenue of the new urban development tax is estimated by central and local governments for 2004 -2020 based on the budget of the revenue sharing in FY2002 as prepared in Table 10.8.

Table 10.8 Urban Development Tax Revenue 2004-2020

Unit: Rp. billion

Government	Urban development tax revenue
Central government	430
West Java province	120
Banten province	80
DKI Jakarta	2,480
Kota Bekasi	100
Kota Bogor	40
Kota Depok	60
Kabupaten Bekasi	120
Kabupaten Bogor	150
Kota Tangerang	150
Kabupaten Tangerang	180
Sub-total (Bodetabek)	800
Total	3,910

Source: SITRAMP Estimate

(4) Additional Revenue

Additional revenues from three kinds of sources are estimated at Rp. 33,010 billion for the master plan period as listed in Table 10.9.

Table 10.9 Additional Revenue 2004 – 2020

Unit: Rp. billion

	Additional Revenue (2004 – 2020)
Revenue from Increase of Fuel Tax Rate	14,000
Revenue of TDM	15,100
Revenue of Urban Development Tax	3,910
Total Additional Revenue	33,010

Source: SITRAMP Estimate

10.2.7 Balance between Budget and Expenditure²⁵

The potential budget has been examined for the implementation of the Master Plan and the maintenance of the existing road. The SITRAMP proposes that the government allocate additional expenditure for the transportation sector development in the Jabodetabek region. Additional budgets could be found from such interventions as increase of fuel tax, TDM revenue and urban-development tax and these revenues should be earmarked for transportation expenditure. As proven in Table 10.10, the cumulative deficit turns to surplus of Rp. 1,610 billion in 2020, if the government could generate additional funding sources.

Table 10.10 Cost Burden by Public Sector 2004 – 2020

Unit: Rp. billion

I. Required Funds	
1. Master Plan Cost	91,270
2. Reduction in Public Cost Burden of Master Plan due to Private Initiative Development	- 24,090
3. Net Public Burden for Master Plan	67,180
4. Maintenance Cost of Existing Roads	13,220
Total Public Cost for Transportation	80,400
II. Funding Sources	
1. Development Budget Allocation for Transportation	49,000
2. Revenue from Additional Revenue Sources (Fuel Tax, TDM & Urban Development Tax)	33,010
Total Funds	82,010
III. Balance (Surplus)	1,610

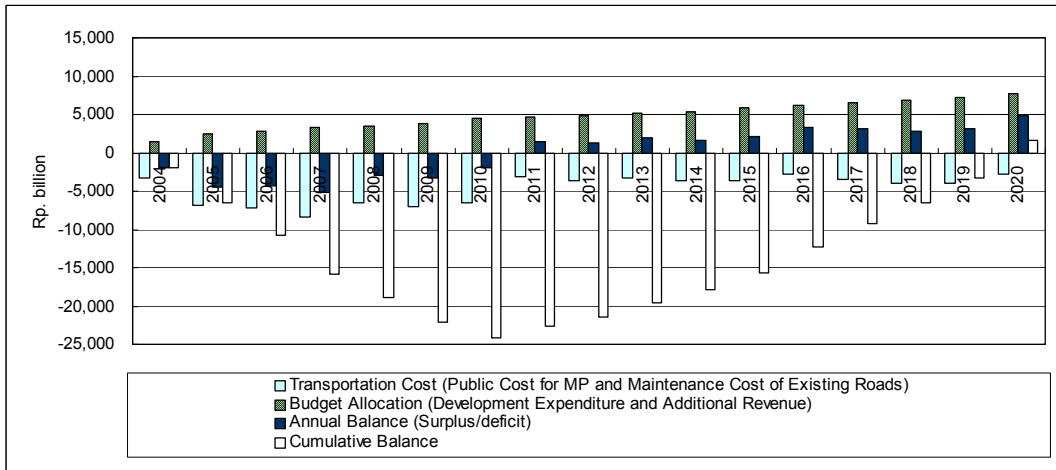
Source: SITRAMP Estimate

Regarding the annual balance of the fund, however, the shortage of the fund is obvious during the short-term development period, which is estimated almost at Rp. 5,000 billion every year from 2005 to 2007 as shown in Figure 10.2. From 2008 the annual deficit will start to decrease and will turn to surplus from 2011. In the initial stage of the master plan, therefore, the external financial resources such as soft loan of ODA should be sought to fulfill the shortage of the budget.

For the short-term development period, the investment cost for the master plan is estimated at Rp. 24,790 billion, of which almost 60% is required for three big projects. They are the Jakarta Outer Ring Road (JORR), Tj. Priok Access and Bekasi Line Double-Double Tracking Project amounting to Rp. 7,035 billion, Rp. 3,784 billion and Rp. 3,692 billion (total investment cost is Rp. 7,985 billion), respectively. Kimpraswil has already indicated an intent to source funds by way of the soft loan for the implementation of JORR and Tj. Priok Access, while for the implementation of Bekasi Line Double-Double Tracking the Japan Bank for International Cooperation (JBIC) has committed to provide Japan's Yen Loan amounting to approximately YEN 40,000 million

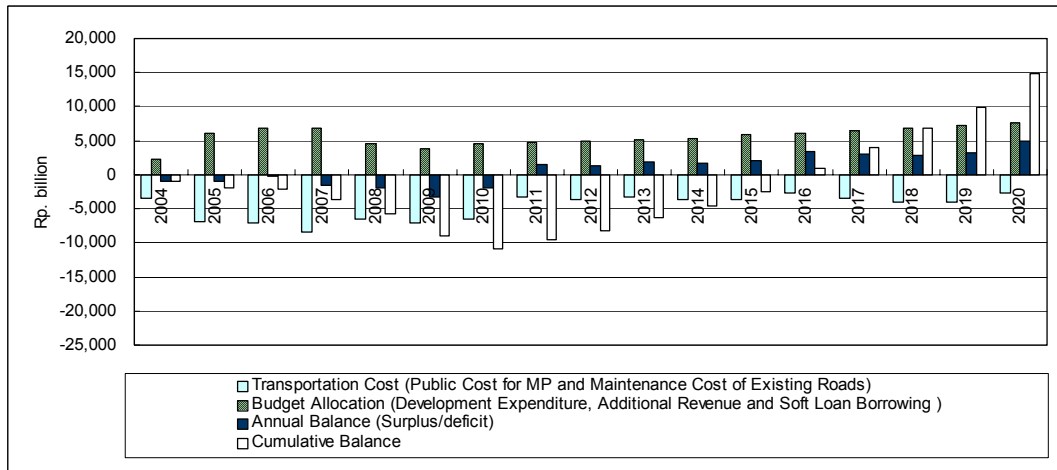
²⁵ Refer to Technical Report Volume 11: Funding Capacity Improvement

(equivalent to Rp. 3,000 billion). Taking into consideration that the government of Indonesia will be able to procure the soft loan for the investment cost of the three projects on some conditions, Figure 10.3 indicates the annual balance between public fund requirement and possible fund allocation for the transportation development in the Jabodetabek region. Annual deficit of fund in the short-term period will reduce to Rp. 1,000 to 1,500 billion from Rp. 5,000 billion; however, the additional funds still need to finance the shortage of the budget in the short-term period.



Source: SITRAMP

Figure 10.2 Annual Funding Balance, 2004 – 2020



Source: SITRAMP

Note: JORR and Tj. Priok Access: It is assumed that all cost except land is provided by soft loan and the repayment and OM cost is recovered by user charges.
 Bekasi D-D Tracking: Investment cost is partly provided by YEN Loan.

Figure 10.3 Annual Funding Balance with Soft Loan Arrangements for JORR, Tj. Priok Access and Bekasi Double-Double Tracking Project, 2004 – 2020

10.3 JTA ESTABLISHMENT AND MASTER PLAN IMPLEMENTATION²⁶

Establishment of the Jabodetabek Transportation Authority (JTA) was proposed for a smooth implementation of key public transportation facilities in the Jabodetabek region. This section examines the financial plan of the Master Plan under the assumptions that the JTA will be established by 2007 in a form and with responsibilities as proposed above.

(1) Undertakings by JTA

a. TDM

TDM will be adopted against the vehicles currently running on the congested streets in the central area of DKI Jakarta. A considerable number of vehicles, however, come from the outside of DKI Jakarta. In this context, implementation and management of TDM should be undertaken by the JTA after 2007 when it is planned to shift to area-pricing from road pricing. All revenue after 2007 is estimated to be allocated to the JTA.

b. MRT

MRT is expected to be a key public transportation system in Jabodetabek and substantial patronage would be obtained from the outside of Jakarta. In addition, the route is proposed to extend beyond the boundary of DKI Jakarta. Considering these circumstances, the infrastructure construction work will be taken care of by the JTA and a new public or private enterprise will undertake the operation and management of MRT. The JTA will share the cost for the infrastructure development of MRT, while the cost for rolling stock and operation and maintenance cost are the expenditure for the enterprise.

c. Busway

Usually, road widening and the other related facility-development will be implemented under the responsibilities of the central and local governments. Thus consistent implementation of the project beyond the administration boundary is required. Therefore, the JTA will undertake management of infrastructure development for trunk bus system including necessary widening of arterial roads, on which busway is provided after 2007. Actual road maintenance work of the road sections of busway will be undertaken by the local government, though necessary expenses may be appropriated by the JTA. Trunk bus operation services will be provided by private bus companies.

d. 2nd JORR, Jatiasi Toll and Depok-Antasari Toll

The 2nd JORR will connect many sub-centers such as Kota Bekasi, Kota Depok and Kota Tangerang in order to support regional development and to increase the mobility in

²⁶ Refer to Technical Report Volume 11: Funding Capacity Improvement / Refer to Technical Report Volume 14: Master Plan Implementation

the region. This project has much to do with all local governments in Jabodetabek. Therefore, it is preferable for the JTA to take comprehensive planning coordination and implementation including private-sector participation. Jatiasi and Depok-Antasari toll roads have been examined for a long time in Jabodetabek. Jatiasi toll road composes part of Cikarang-Jatiasi toll road, which is expected to function as an alternative route of Cikampek toll road. On the other hand, Antasari toll road connects between the north of Jakarta and south of Depok. As both toll roads pass through the current administrative boundaries, forming part of high mobility highway network, it is preferable for JTA will undertake the projects.

e. Area Traffic Control System

Traffic management including ATC (area traffic control) and traffic information system comprises an important component to alleviate traffic congestion and fully maximize the capacity of roads and related facilities. JTA will undertake the management of the ATC projects that DKI Jakarta and the surrounding three Kota have close relation in the implementation.

(2) Funding Requirement and Balance of Fund by Implementing Body

The requirement of the public burden of the Master Plan at Rp. 67,180 billion is distributed to the implementing bodies as shown in Table 10.11. The requirement of the central government is huge, amounting to Rp. 37,850 billion or 56% of the total of the MP cost, while the burden of the JTA will be Rp. 15,230 billion or 23% of the total.

The total transportation development and O&M cost of Rp. 80,400 billion is shared by the governments as shown in Table 10.12. Taking into account of the possible budget allocation of the development expenditures, the balance of fund of each government is estimated for the master plan period. The deficit of the fund is huge for the central government and the JTA amounting to Rp. 19,050 billion and Rp. 15,230 billion, respectively.

Table 10.11 Public Cost Burden of Master Plan 2004 – 2020

Unit: Rp. billion

	MP Cost			Private initiative & revenue	Net public burden	Remarks
	Road network ¹⁾	Railway network	Busway, traffic management & TDM			
Central Government	24,530				24,530	
Sub-total of Central government		24,120		13,380 ²⁾	10,740	Jabotabek RWY
			2,580 ³⁾		2,580	³⁾ Traffic management
	24,530	24,120	2,580	13,380	37,850	
West Java Provincial Government	1,550				1,550	
Banten Provincial Government	680				680	
DKI JKT	4,650		35 ³⁾ 555 ⁴⁾ 150 ⁵⁾	555 ⁴⁾	4,835	⁴⁾ Busway facility ⁵⁾ TDM (2005~6)
Kota Bekasi	470		5 ³⁾		475	
Kota Bogor	1,220		5 ³⁾		1,225	
Kota Depok	1,200		5 ³⁾		1,205	
Kabupaten Bekasi	670		5 ³⁾		675	
Kabupaten Bogor	600		5 ³⁾		605	
Kota Tangerang	320		5 ³⁾ 15 ⁴⁾	15 ⁴⁾	325	⁴⁾ Busway facility
Kabupaten Tangerang	2,520		5 ³⁾		2,525	
Jabodetabek Transportation Authority	11,760			6,920 ⁶⁾	4,840	2 nd JORR, Jatiasi Toll, Depok - Antasari Toll & widening for busway (2007~)
		11,410		2,870 ⁷⁾	8,540	JKT MRT
			350 ⁴⁾	350 ⁴⁾	0	⁴⁾ Busway facility
			330		330	³⁾ Traffic management
Sub-total of JTA	11,760	11,410	1,520 ⁵⁾	10,140	15,230	⁵⁾ TDM
Total	50,170	35,530	5,570	24,090	67,180	
		91,270				

Source: SITRAMP

Note: 1) The cost for 6-lane widening for busway is included.

2) Jabotabek Railway operation including procurement of rolling stock by PT. KA

3) Traffic management

4) Busway facility development and concession revenue from busway operation companies

5) DKI JKT is responsible to TDM in 2005 and 2006. After 2007 the JTA will take care of it.

6) Private initiative development for 2nd JORR (Section 1~14), Jatiasi Toll and Depok-Antasari Toll

7) JKT MRT operation including procurement of rolling stock by a new enterprise

Table 10.12 Funding Requirements for Transportation Sector and Balance of Fund: 2004 – 2020

Unit: Rp. billion

	Net burden of government for Master Plan implementation	Maintenance cost of existing roads	Total transportation cost	Allocation from development expenditure budget	Balance of fund (Surplus/ deficit)
Central Government	37,850	2,600	40,450	21,400	-19,050
West Java & Banten Provincial Governments	2,230	670	2,900	3,700	800
DKI JKT	4,835	6,060	10,895	14,400	3,505
Kota Bekasi	475	570	1,045	9,500	-1,425
Kota Bogor	1,225	380	1,605		
Kota Depok	1,205	210	1,415		
Kabupaten Bekasi	675	860	1,535		
Kabupaten Bogor	605	860	1,465		
Kota Tangerang	325	360	685		
Kabupaten Tangerang	2,525	650	3,175		
Sub-total (Bodetabek)	7,035	3,890	10,925	9,500	-1,425
Jabodetabek Transportation Authority	15,230	-	15,230	0	-15,230
Total	67,180	13,220	80,400	49,000	-31,400

Source: SITRAMP Estimate

(3) Balance between Budget and Expenditure

Although the cumulative deficit turns to surplus of Pp. 1,610 billion in 2020, if the government could generate additional funding sources, the balance of the central government still remains deficit and inter-governmental transfer scheme of the fund such as some contribution of local governments is to be considered.

Table 10.13 Cost Burden by Public Sector 2004 – 2020

Unit: Rp. billion

	Balance of fund (Minus: deficit)	Additional revenue				Net balance
		Fuel tax	TDM revenue	Urban development tax	Total	
Central Government	-19,050	7,000		430	7,430	-11,620
West Java & Banten Provincial Government	800	700		200	900	1,700
DKI Jakarta	3,505	700	900	2,480	4,080	7,585
Kota/ Kabupaten in Bodetabek region	-1,425	1,400		800	2,200	775
Jabodetabek Transportation Authority	-15,230	4,200	14,200		18,400	3,170
Total	-31,400	14,000	15,100	3,910	33,010	1,610

Source: SITRAMP Estimate

(4) Alternative Funding Arrangement without JTA establishment

An alternative funding arrangement for the master plan implementation without the JTA establishment is prepared in Table 10.14. An amount of Rp. 15,230 billion for JKT MRT, 2nd JORR, Jatiasi Toll and Depok-Antasari Toll, Busway widening and other traffic facilities, which is allocated to the JTA in the base case, is re-allocated to the central and the local governments as of their responsibility. The cost burden of the central government increases to Rp. 47,070 billion from Rp. 37,850 billion in base case. Under the same assumption of the development expenditure allocation for transportation sector and the additional fund allocation to each government from three sources, a shortage of fund is estimated as shown in Tables 10.15 and 10.16. As proved, the fund shortage of the central government is huge and the surplus of DKI Jakarta is also huge. A new scheme for cost-sharing and re-allocation of the fund among the relevant governments, especially between the central government and DKI Jakarta, needs to be sought, if it is unable to establish the JTA appropriately for the consistent implementation of the master plan.

Table 10.14 Alternative Funding Arrangement without JTA Establishment

Unit: Rp. billion

	Base Case (with JTA establishment)					Alternative Case (without JTA)	
	MP Cost			Private initiative & revenue	Net public burden	Adjustment in public burden	Net public burden
	Road network	Railway network	Busway, ATC & TDM				
Central Government	24,530	24,120	2,580	13,380	37,850	9,220	47,070
West Java Provincial Government	1,550				1,550	120 ⁴⁾	1,670
Banten Provincial Government	680				680	340 ⁴⁾	1,020
DKI JKT	4,650		740	555	4,835	5,020	9,855
Kota Bekasi	470		5		475	160 ^{4), 5)}	635
Kota Bogor	1,220		5		1,225		1,225
Kota Depok	1,200		5		1,205	10	1,215
Kabupaten Bekasi	670		5		675	350 ⁴⁾	1,025
Kabupaten Bogor	600		5		605		605
Kota Tangerang	320		20	15	325	10	335
Kabupaten Tangerang	2,520		5		2,525		2,525
JTA	11,760	11,410	2,200	10,140	15,230	-15,230	0
Total	50,170	35,530	5,570	24,090	67,180	0	67,180
		91,270					

Source: SITRAMP Estimate

Table 10.15 Alternative Funding Requirement and Balance of Public Sector 2004 – 2020

Unit: Rp. billion

	Net Master Plan cost burden	OM cost of existing roads	Total transportation Cost	Allocation of development expenditure	Shortage of Fund
Central government	47,070	2,600	49,670	21,400	-28,270
West Java & Banten provincial government	2,690	670	3,360	3,700	340
DKI JKT	9,855	6,060	15,915	14,400	-1,515
Kota/Kabupaten in Bodetabek	7,565	3,890	11,455	9,500	-1,955
Total	67,180	13,220	80,400	49,000	-31,400

Source: SITRAMP Estimate

Table 10.16 Alternative Funding Requirement and Balance of Public Sector 2004 – 2020

Unit: Rp. billion

	Shortage of Fund	Additional Revenue			Balance
		Fuel Tax	TDM Revenue	Urban-Development Tax	
Central government	-28,270	11,200		430	-16,640
West Java & Banten provincial government	340	700		200	1,240
DKI JKT	-1,515	700	15,100	2,480	16,765
Kota/Kabupaten in Bodetabek	-1,955	1,400		800	245
Total	-31,400	14,000	15,100	3,910	1,610

Source: SITRAMP Estimate

10.4 PUBLIC INVOLVEMENT IN TRANSPORTATION SYSTEM DEVELOPMENT

With reference to this master planning study, the understanding of the citizen on the master plan is essential to successfully implement the projects and programs proposed in the master plan. Prior to the implementation of the projects and programs, dissemination of the plan and getting feedback from the general public is an important process to make it happen.

- For local government, actual practices of public involvement at local transportation planning level are most useful. Legalization of public involvement procedure should also be considered.
- For the master plan, monitoring mechanism by the public should be taken into account as well as information dissemination and feedback from the public.

10.5 MONITORING ON MASTER PLAN IMPLEMENTATION

(1) Importance of Monitoring Master Plan Implementation

During the master plan period, monitoring on progress of the projects and the programs are essential to achieve the objective of the master plan. The projects and programs should be evaluated in the degree of achievement. The contents and schedule of the

master plan components should also be periodically reviewed to accommodate changing social and economic environments.

Implementation schedule for the Master Plan up to 2020 has been established taking budgetary constraints of relevant governments into account; however, transportation system development projects, which can be financed under private initiative scheme, could be implemented before 2020 if the economic and financial conditions are met.

In this master plan, it is recommended to develop busway system as a part of trunk public transportation system in short-term to complement rail-based system. In the future, if passenger demand increases on the busway corridors and/or ability to pay increases in accordance with increase in real household income due to economic development, then busway can be converted to higher standard of public transportation such as LRT or MRT. Thus it is of great importance to monitor increase in real household income as well as busway passenger demand for determining the time to upgrade the public transportation system.

The implementation schedule of projects/ programs should be reviewed and adjusted, if necessary, through monitoring of socio-economic changes. The master plan should be reviewed periodically and modified in accordance to the changes of social needs.

For instance, if regional economy would develop more rapidly than expected in this plan and probably tax revenue would also increase, more infrastructure could be developed possible alternatives of transportation system are presented in Figure 10.4.

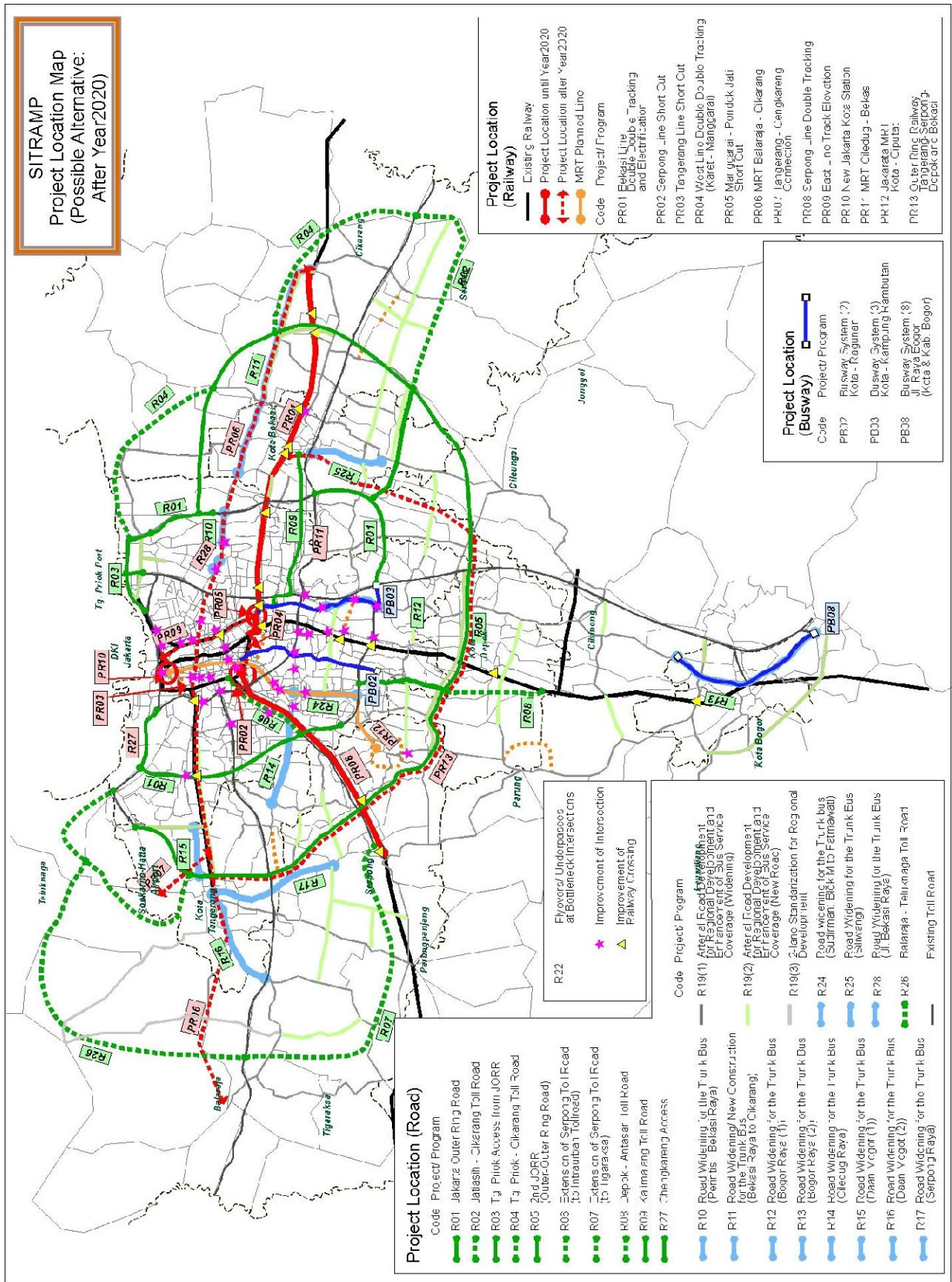


Figure 10.4 Possible Alternative of Transportation System in Jabodetabek

(2) Database System Development

The database system is essential for the monitoring and evaluation to produce effective outputs. The database should be useful in checking the progress of project implementation and the achievement level of expected benefits / effects of the project. It would also contribute to improvement of accountability of the public sector.

Accordingly, three types of monitoring indicators are necessary, namely, "Input Index", "Output Index" and "Outcome Index". Input index indicates achievement or progress of the projects in terms of schedule, financing, budgeting as well as physical unit such as kilometers area, etc. Output index and Outcome index indicate benefits derived / realized by the projects in terms of degree of achievement toward the target. In the future, the system will be connected between the different implementation organizations through the Internet.

The database system should be designed to be useful for the whole policy-cycle, that is, "Plan", "Do", and "See". The system will be used as a supporting system for planning in the "Plan" stage, as a project implementation monitoring system in "Do" stage, and as a project evaluation system in "See" stage. It is highly recommended to establish such a database system in an organization being in charge of the project monitoring activities.

The urban transportation database system includes the following data pertaining to not merely transportation but also social and economic indicators, land use, and environmental data.

1) Transportation	<ul style="list-style-type: none"> - Person trip data (obtained from Home Visit Survey) - Trip OD matrices (manipulated from PT data) - Road network (toll road network, arterial and collector roads) - Transit network (bus route, railway network and operation)
2) Socio-Economic	<ul style="list-style-type: none"> - Population - Employment (number of employees at residence/work place) - Education (number of students at residence/school place)
3) Land Use	<ul style="list-style-type: none"> - Existing land use
4) Environment	<ul style="list-style-type: none"> - Air pollution - Traffic noise

The data are consolidated in the format of database, which can be handled with popular commercial database software. Some of them, which have relation with geographical feature such as zones, arcs, or points, are contained in the GIS system. Therefore, the data can be utilized with personal computers, although it requires sufficient space for data storage.

For maintaining and updating the data, the urban transportation database center should be established. Since the data will be utilized for monitoring the master plan implementation, the database center should ideally be a part of the proposed

Jabodetabek Transportation Authority. Before establishing such an institution, the database center could tentatively be developed in Bappenas for managing update of the data.

10.6 NEXT STEPS TO BE TAKEN

To materialize the transportation master plan, as a first step, the following should be implemented in short term.

(1) Legal Framework of Jabodetabek Transportation Master Plan

Legal framework is needed to materialize the master plan by relevant government agencies, thus it is recommended to draft a new law, or at least a presidential decree, on the transportation master plan for Jabodetabek.

(2) Establishment of Jabodetabek Transportation Planning Committee

Since it seems difficult to establish a new transportation authority in a short term, a Jabodetabek transportation planning commission should be established for examining structure of the organization, functions, role sharing with the existing government agencies and for preparation of the authority to pursue the tasks in short term.

(3) Detailed Transportation Master Plan for DKI Jakarta and Local Governments in the Bodetabek Area

The SITRAMP transportation master plan provides the trunk transportation system development plan in the Jabodetabek region. DKI Jakarta and the local governments in the region should develop sub-regional transportation master plan and should obtain legal basis for implementing the local transportation plan, which should be consistent with metropolitan-wide master plan. Furthermore lower-level transportation network should be added according to local needs of each local government

(4) Ensuring Funds for Transportation System Development

Even taking private sector participation into account, financial burden of public sector was estimated at Rp. 80,400 billion in the 14-year master plan period from 2004 to 2020. About Rp. 33,010 billion would be required in addition to the current level budget for transportation sector. Relevant laws should be drafted regarding road pricing, increase in fuel tax rate and introduction of urban development tax to complement the shortage of development funds. Moreover since all relevant agencies have not agreed on the concept of earmarking of transportation-related taxes to the transportation sector, discussion should be continued on the issue. Further discussion is necessary among relevant agencies with regard to possibility on application of CDM (Clean Development Mechanism) for developing a rail-based transportation system, which needs a huge amount of fund.

(5) Appropriate Formulation of Private-Public Partnership and Cooperation among Public Sectors

Participation of private sector in transportation system development and operation is of great importance in reducing financial burden of public sector as well as in introducing a more efficient management practice of private sector as previously described. More concrete and detailed analyses should be conducted on cost sharing between public and private sectors, and incentives for private sector participation (such as provision of development right and guarantee by government and so on.)

(6) Post Evaluation of the Projects

In the final stage of master plan study, busway operation was initiated in January 2004 and enforcement of the 3-in-1 traffic restraint policy was also made stricter compared to the previous days. It is definitely important to execute a post evaluation study to understand responses of the citizens and impacts on traffic as well as on economic activities on the corridor. Then it should be fed back to the next stage and the plan should be modified and improved into a more efficient and convenient system; as a consequence, it leads to a transportation policy which could obtain consensus from the public.

11 CONCLUSION

In the progress of globalization, one of the important issues to increase competitiveness of Indonesia in the world market is alleviation of transportation problems and improvement and development of transportation infrastructure facilities to support commodity transportation. It is thus of great importance to improve accessibility to the Tanjung Priok Port as a gateway for international trade.

In a megalopolis like the Jabodetabek region where 50.4 million trips are made in a day, it goes without saying that mass rapid transit system is needed to meet the huge travel demand. If financially possible, it is desirable to develop a rail-based transportation system, which is not disturbed by ordinary road traffic. The rail-based transportation system, however, requires a considerable amount of cost for development. Consequently, it seems extremely difficult to develop many rail-based systems under the current level of budget allocated to the transportation sector. On the other hand, at present buses run at low speeds because buses are caught in general traffic congestion on roads, thus punctuality of operation is not ensured. Not a few residents now try to avoid using buses because of issues of security and lack of comfort. Therefore, a higher level of public transportation service should urgently be provided to prevent the shift from public to private modes of transportation. Furthermore, having merely one route is not enough to attract people to public transportation use but an extensive network should be formulated like a web to cover the major travel demand in the metropolitan area.

On the other hand, the ability to pay for transportation of the majority of the residents is not so high that it is difficult to set high public transportation fares which enable the private sector to provide a high level of public transportation services.

In the short term and intermediate term, the public transportation network should be formulated by combining the maximum use of the existing railway network and busway system, which would complement the railway network. In the long run, a rail-based transportation system is definitely needed to provide a higher level of services as well as a higher passenger capacity. Introduction of busway ensures the space for future public transportation system development with a higher level of services.

Improvement of public transportation services alone cannot suppress the deeply rooted preference to use private modes of transportation; consequently, traffic restraint scheme should be employed in the congested area in the central part of the region where traffic congestion is often observed.

Another important measure is to foster sub-centers in Bodetabek and to distribute urban functions, which currently concentrate in DKI Jakarta. By creating an alternative urban

structure, traffic congestion problem would be alleviated to some extent.

Although promotion of public transportation is the most important policy to alleviate transportation problem in the master plan, road network has not been well developed and the capacity is significantly small in Bodetabek. In particular, progress of road network development has not caught up with the expansion of urbanized area, therefore, road network development is also important in Bodetabek.

The Study indicates how to solve the transportation problems in the Jabodetabek region by explaining not only how the physical development of the transportation network should evolve but also how to ensure the required funds including sharing of costs by the citizens, regulatory reform, institutional rearrangement, and consensus building among the stakeholders. It also indicates what should be done now to make the master plan materialize.

The shortage of funds is expected for implementing the projects and programs proposed in the master plan, if allocation of funds in the central and local government is assumed to be at the same level of expenditure for transportation at present. It implies that the funds are very limited, not even enough to cover the maintenance costs of the existing facilities, and very possibly just a small amount could go to development of new transportation facilities. Funds for transportation system development and maintenance should be augmented through increase of fuel tax rate, charges of road pricing, new urban development tax and others.

Furthermore, to make up for the shortage of development funds of the public sector, active private-sector participation in provision of transportation services should be encouraged. In this case, based on the user-pay-principle, transportation fare should be charged on the users who get benefits from the services. To promote private-sector participation in the transportation business, it is urged that business laws and regulations should be amended to create a more attractive environment and to reduce uncertainties for investment.

The cooperation of the citizens, particularly in bearing the burden of increasing taxes, is indispensable for implementation of the master plan. Of course, it goes without saying that they have to be well-informed about the plan. This can be accomplished through such occasions as public hearings and stakeholder meetings, and their opinions should be incorporated in the plan; the effects of the project implementation should also be monitored. It is important that there be accountability by the government. Transparency is of significance to gaining public acceptance and cooperation; thus an information dissemination mechanism should be urgently established. Moreover, as a part of the master plan, the Study recommends developing an urban transportation database system and a transportation performance monitoring system.

Finally, legal framework is needed to materialize the master plan by relevant government agencies, thus it is recommended to draft a new law, or at least a presidential decree, on the transportation master plan for Jabodetabek.