CHAPTER 9

COMPREHENSIVE RECOMMENDATION

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9.1 Development of the Railway Network

9.1.1 Realization of Planned Lines

The objective of the Study is to make railways in Metro Manila more comfortable and convenient for users and in turn to increase the number of people using railways. The most important and effective means of ensuring that citizens use railways is the construction of a railway network. In the Study, it is not intended to propose the planning and construction of new specific rail routes, however, it is hoped that construction of those routes currently being planned is realized at an early stage.

Future plans for rail network construction in Metro Manila have already been demonstrated in the following programs:

① JICA development study "Metro Manila Urban Transportation Integrated Study" (MMUTIS) implemented from 1997 through 1999

② Medium-Term Philippine Development Plan (MTPDP) established by the Philippine Government and having 1999-2004 as the target year

The most important thing in order to increase the number of rail users in Metro Manila is to achieve the earliest possible realization of these already proposed rail network plans. In addition to the already operating Line 1, Line 3 and PNR, if construction of Line 2 (currently being built) and the planned Line 3 extension, Line 4, Line 6, North Rail and MCX is realized, dramatic increase in the number of rail users can be anticipated. (See Appendix 3 for the current conditions and plans of railways in Metro Manila).

In advancing construction of the railway network, it will be necessary to promote cooperation between related Departments and Agencies such as the DOTC, NEDA, MMDA and DPWH, etc. under the guidance of the President, to hear the views of local government representatives, railway operators, urban transportation experts and transportation users, and to seek the understanding of citizens by presenting specific railway construction plans, cost benefit and sources of construction funds, etc. before the public.

In Japan, the Council for Transport Policy composed of related government officials, etc. is established within the Ministry of Transport. This council discusses basic plans concerning rail network development in major cities, and it reports and discloses its findings to the Minister of Transport and the general public. Based on the reported contents from the Council, the Minister of Transport establishes specific policy, carries out necessary legal revisions and secures the necessary budget for urban railway development.

9.1.2 Important Points in Construction of the Railway Network

As was mentioned above, carrying out the planned construction of the rail network in Metro Manila is important, however, it will be necessary to pay attention to the following points when doing this.

(1) Rail System

The specifications of new wayside facilities and rolling stock must be such that appropriate transportation capacity can be secured based on the demand forecast for the lines in question.

Concerning Metro Manila Line 1, because LRT was adopted this based on an estimate of transport demand which was lower than actual demand at the time of construction, it was later necessary following the start of commercial operation to carry out major works for boosting transport capacity. Conversely, if a railway system is constructed with excess capacity based on a demand forecast larger than the actual demand, this leads to higher investment cost and adversely affects business standing.

Concerning demand forecast for each railway line in Metro Manila, figures having 2015 as the target year are indicated in MMUTIS. According to this forecast, concerning new railway lines in Metro Manila, it is necessary to introduce a train system which has the capacity for high density operation and large volume transportation. In carrying out the construction of new lines, it is rational to conduct detailed demand forecasts and to add to the rolling stock fleet in line with demand increases following the opening of lines, however, it is vitally important to establish basic specifications which ensure that no major improvement works of facilities are required.

(2) Government Involvement

As a public mode of transport, railways support urban functions in major cities and are an essential requirement in order for citizens to enjoy full and comfortable lifestyles. Moreover, as a means of making cities more attractive and vitalizing urban centers, the importance of railways is increasing all the time.

However, since railway construction requires massive funding and take a very long time to attain service profitability, rail construction led by private sector companies is limited. In other words, private companies are attracted to railway construction in cases where development progresses along wayside areas and benefits of development can be enjoyed as a result of increases in the value of owned real estate, etc. In urban areas where wayside areas have already been developed, it is hard to realize internalization of development profits resulting from railway construction and it is difficult to expect much private-led railway construction. In this case, railway construction must be tackled within the framework of urban policy and urban transport policy of the central government and local governments.

Meanwhile, the Philippine Government and local governments are confronted with extremely harsh financial conditions, and it is not appropriate to pass the burden for excessive fiscal expenditure onto future generations. For this reason, concerning the construction of railways in Metro Manila, in addition to providing institutional and financial incentives to private companies in order to obtain maximum private sector funding, while at the same time seeking an appropriate burden from users (fares), it is necessary to seek new sources of railway construction funds through the establishment of environmental tax, etc.

As the worldwide trend concerning the construction and operation of railways in major urban centers, it is increasingly common for central and local governments to carry out infrastructure development and for private companies to implement efficient operation, i.e. the so-called separation of infrastructure development • ownership and operation.

Moreover, even in cases where permission for railway construction and operation is granted to private companies, it is necessary for public authorities to take an involvement in ensuring through operation between lines (seamless operation), improving connections with other modes of transport via development of station plazas, and improving service and safety levels through installing escalators and removing barriers, etc.

In Japan, the authorization and safety regulation of railway operations are governed by the Railway Operation Law and Railway Business Law, however, as can be seen in the introduction of smooth transit measures for promoting through-operation within the Railway Business Law and establishment of the Transport Barrier Free Law for promoting the installation of escalators, etc., efforts are also being made to make it compulsory for railway operators to improve services and to provide financial support to this end.

(3) Connection with Urban Development

Railways play an important role in supporting everyday life, however, they also make an important contribution to urban functions through mitigating road congestion, reducing transport pollution, extending the commuter radius and vitalizing city centers. Moreover, construction of station plazas, station area development, construction of multi-level intersections, improvement of level crossings, and countermeasures against squatters, etc., which are all intended to improve the comfort and convenience of railways, are also linked to urban projects and road construction. Therefore, in carrying out development of the railway network, it is effective for railway officials to work closely with road and city officials in promoting projects that ensure the integrated development of railways and urban functions.

In order to improve urban transport in general, raise urban functions and realize an attractive and high quality urban lifestyle, it is necessary to further strengthen cooperation between railway development and urban development with respect to the overall improvement of stations and areas around stations.

Examples of coordination between railway development and urban development in Japan are as follows.

① Station Plazas

Station plaza planning is incorporated into the city plans of local governments, and the division of costs, etc. between railway operators and local governments is decided in discussions between both parties at the suggestion of local governments. Concerning division of land ownership around station plazas, site compensation expenses, site development costs, and administration expenses, etc., agreements are concluded between the Ministry of Transport and the Ministry of Construction. As a

rule, railway operators bear the cost of one-sixth of the site land.

② Multi-Level Intersections

In order to remove level crossings between railways and main roads and replace these with multi-level crossings, agreements are concluded between the Ministry of Transport and the Ministry of Construction concerning the criteria for adoption and cost burden, etc. The burden of railway operators ranges between 5%-14% of the cost of multi-level development.

③ New Line Construction

In cases where railway operators construct new lines, authorization is obtained according to the Railway Business Law managed by the Ministry of Transport, and urban planning authorization for railway construction is obtained based on the Urban Planning Law managed by the Ministry of Construction.
(Moreover, from January 2000 the Government of Japan integrated the Ministry of Transport and Ministry of Construction into the Ministry of Land, Infrastructure and Transport).

(4) Importance of PNR Line

PNR stretches north to south from Tutuban through the center of Metro Manila, and at its peak it consisted of 1,300 km of line. Since then, the abolition and closure of railway lines has been made inevitable by the advance of motorization, deterioration of railway facilities and occurrence of natural disasters, and the line extension currently stands at 446 km. Furthermore, the railway is unable to fully function because train speeds and frequency of services are reduced due to deterioration of railway facilities and squatters around the line; and moreover, reduction of revenue due to low fares and numerous free riding puts pressure on business operation. However, since PNR connects the center of Metro Manila to districts with growth potential in the north and south, it is an attractive route as a commuter main line.

According to the railway demand forecast for 2015 as given in MMUTIS, high levels of passenger usage are anticipated on the PNR north line and south line in future. Moreover, the section between Caloocan-Tayuman-Sucat (approximately 28 km) is double track line. Upon constructing the railway network in Metro Manila, an effective means of realizing network effect would be to vitalize this PNR line and make it into a pillar of passenger movement. Projects have already been formulated for the north line (North

Rail Line) and south line (MCX Line), however, policy has not yet been determined with respect to the section in the center of Metro Manila (Tayuman-Buendia). It is important to develop PNR as a key route of the rail network in Metro Manila through improving the north and south lines and carrying out drastic revision of the central section. Accordingly, in the Study, it is proposed that improvement of services through raising speeds, free rider countermeasures and squatter countermeasures be sought by turning the central section which links the north and south lines into an underground line.

(See Chapter 5 for description of improvement to PNR north and south lines and through operation).

9.2 Railway Technical Standards

9.2.1 Establishment of Railway Technical Standards

In order for railways to operate safely, speedily, accurately and efficiently, it is necessary to have set rules and standards. Concerning the method adopted in major rail nations, safety standards, etc. for fulfilling socially required levels are defined by the government, and railway operators secure safety by adhering to these standards.

Railway technical standards are divided into compulsory standards which prescribe for safety and voluntary standards aimed at improving production efficiency and removing trade impediments, etc. In the Study, examination was carried out on compulsory standards. Concerning voluntary standards, international standards such as the ISO Standard should be introduced to the Philippines. Compulsory standards prescribe necessary performance items for securing required safety levels, maintaining networks, displaying railway characteristics, securing convenience of users, and adopting environmental countermeasures. It is not advisable to incorporate specific figures into compulsory standards because specifications differ according to each railway and line, introduction of new technology may be hindered, and this may lead to increased costs. The Study proposes the minimum required standard items for constructing and operating railways and the performance conditions required in those items, and it is hoped that the Philippine government takes these proposals into account in establishing and promulgating its own railway technical standards. Moreover, interpretation guidelines which give a commentary on the thinking behind railway technical standards have been stated in the Study. It should be pointed out that these are a preliminary guide intended to aid the understanding of railway operators and officials in charge of establishing railway technical standards.

9.2.2 Legislation and Responsible Organization for Railway Technical Standards

Compulsory technical standards must be clearly stated in legislation of the Philippine Government and widely informed to railway operators.

The legislative system of the Philippine Government consists of Acts, Executive Orders, Presidential Orders and Department Orders, etc.. Since maritime safety rules are prescribed in Department Orders, it is appropriate that railway technical standards also be prescribed in this manner. Also, it is necessary to establish a responsible organization for establishing technical standards and carrying out revisions according to technical progress, etc. Organizations responsible for railways within the Philippine Government are the DOTC, LRTA and PNR, however, officials in charge of technical standards need to possess administrative sense in addition to a deep understanding of railway technology. Taking these two aspects into consideration, the Railway Transport Planning Division within the DOTC is considered to be appropriate as the responsible department. Moreover, in order to handle opinions in the practical running of the railway, it is proposed that a Council for Railway Technical Standard composed of railway experts from the DOTC, LRTA, PNR and MRTC, etc. be set up within the Railway Transport Planning Division, and that a system be established for deliberating the contents of standards.

9.2.3 Problems of Unification of Specifications

There is a school of thought which thinks that by prescribing concrete figures for the basic specifications of railways in railway technical standards and seeking to standardize railways as a result, this will lead to greater efficiency of railways. For example, the following values are established: gauge 1,435 mm, overhead voltage 1,500 VDC, minimum curve radius 160 m, steepest gradient 35/1000, track center interval 3,200 mm, car floor height 920 mm, and so on. However, by standardizing the specifications of railways throughout a country or in one city, there is a risk of ignoring the topographical features of each line, hindering technical progress and preventing reduction of construction costs.

However, when carrying out through operation on two or more lines, it is necessary to standardize basic specifications on the sections in question. Basic specifications refer to gauge, track clearance, car clearance, design load, minimum curve radius, steepest gradient, train length, platform height, electric system, power collection system, signal safety system, major dimensions of rolling stock, and so on. Therefore, when planning the railway network, it is necessary to plan in advance those sections where through operation will be carried out.

As for those sections where through operation is not intended, providing that the performance conditions of railway technical standards are satisfied, it is more efficient in terms of construction and operation to freely select specifications.

Furthermore, since standardizing rolling stock and electric equipment parts standards contributes to cost reduction, standardization is being advanced according to ISO, etc. It will be important to adopt international voluntary standards that will lead to cost reduction in the Philippines too.

9.2.4 Preparation of Railway Inspection and Maintenance Standards

Following the start of commercial operations on railways, it is necessary to establish inspection and maintenance standards with respect to civil engineering, track, electrical and operating safety facilities and rolling stock, in order to keep railway facilities in sound condition and to ensure the safe running of rolling stock. Concerning these inspection and maintenance standards, each railway company establishes specific detailed rules based on its own line and rolling stock conditions for the maintenance of operating safety. It is recommended that each railway company informs personnel of these inspection and maintenance standards and implements inspections at set intervals to monitor compliance with them. (See Appendix 5)

9.3 Railway Fare and Passenger Service Policy

9.3.1 Railway Fare

(1) Standard Fare

It is necessary to set the basic fare for railways upon giving careful consideration to the ability to pay of general users and competition with other public modes of transport. Accordingly, in this Study, a fare roughly 25% higher than that for air cooling buses, which offer almost the same service conditions as railways, was set as a provisional standard, and parameters such as speed of each mode of transport, arrival time, changeover time, waiting time and comfort, etc. were used to compute the fare where optimum transport volume and revenue are realized. As a result, it was found that optimum transport volume and fare revenue were achieved in the case of reducing the above provisional standard fare by 15%. In other words, the fare in this case is 9 peso up to the first 5 km, 13 peso up to 10 km, 17 peso up to 15 km, 21 peso up to 20 km, and 26 peso up to 25 km, etc.

(2) Introduction of Commuter Passes

An effective way to promote railway use and realize labor saving within railway companies is to issue various types of discount ticket.

Looking at the daily numbers of boarding and alighting passengers at each station on Line 1, there are many stations where the number of boarding passengers differs greatly from the number of alighting passengers. This means that passengers do not use the Line 1 on the outward or inward journey. In order to encourage rail use on both outward and inward journeys, introduction of commuter passes is effective.

One month or three month commuter tickets are appropriate for introduction to urban railways in Manila, and discount rates of 20%-30% for work commuting and 30-40% for school commuting are appropriate judging from the number of users and fare revenue.

In the case of railways in Japan, commuter passes are widely used: between 62-65% of rail users on JR, private railway and subway lines in Tokyo use commuter passes. The discount rate of commuter passes for JR lines are 50-55% for work commuting and 62-70% for school commuting.

9.3.2 Strengthening of Linkage between Railway Companies

(1) Inter-railway Transit Tickets and Through-fare System

In Metro Manila, in addition to the currently operating Line 1, Line 3 and PNR, lines planned for new construction or upgrading are Line 2, Line 4, Line 6, North Rail and MCX. In the event where multiple railway companies conduct services on a number of line sections, there will be frequent cases of passengers riding over sections operated by different companies. In this event, in order to promote passenger convenience and make fares seem less expensive, it is recommended that inter-railway transit tickets be issued and that a through-fare system be introduced.

(In issuing inter-railway transit tickets, it is necessary to standardize the automatic fare collection system. Current conditions and issues concerning the adoption of inter-railway tickets on Line 1 and Line 3 are described in section (2) Standardization of Automatic Fare Collection System and Boarding Tickets).

Concerning the introduction of a through-fare system, in the case of urban transport where short distance trips are the main, there is concern that the revenue of each railway company will fall compared to the case of separate fare systems. However, since introduction of the through-fare system can be expected to increase the number of rail users, this is something which should be realized while paying attention to the fare structure and discount rate, etc. of each railway company when introducing the system.

JR companies in Japan adopt an through-fare fare system whereby fares are calculated by totaling traveled distances. As for transit boarding between JR and private lines and between private lines, in cases of riding on short sections, a slight discount (around 5%) is applied to the total of each separate fare.

(2) Standardization of Automatic Fare Collection System and Boarding Tickets

The automatic fare collection (AFC) systems on Line 1 and Line 3 are incompatible because they use different magnetic card encoding formats. In order to make it possible for passengers to ride on both lines using one boarding ticket, it is necessary to carry out remodeling of the AFC equipment and reworking of software on both lines.

In order to carry out complete standard handling which will enable Line 1 and Line 3 boarding tickets to be used at all automatic gates on both lines, it would be necessary to totally rework the hardware and software of all automatic gates on both lines, but this is not feasible because it would incur cost equivalent to no small ratio of the initial investment.

One cost-effective means of carrying out the standard handling of some boarding tickets is to target just stored value tickets (SVT) and add Line 1 automatic gates to Line 3 stations or Line 3 automatic gates to Line 1 stations for handling only stored value tickets (SVT). Even in this case, however, cost would be incurred in installing Line 1 automatic gates in each Line 3 station, and it would be necessary to issue a ticket issuing machine in Taft Avenue Station, install a new station computer system, and carry out upgrading of software for the automatic ticket gates and central computer system.

A drastic solution would be to adopt standard boarding tickets which utilize non-contact IC cards. However, it is not realistic at the current point to introduce an IC card system because magnetic card automatic ticket gates have only just been purchased on Lines 1 and 3 and the depreciation period is not yet complete and the cost of IC cards is high.

Therefore, there is not currently any cheap and effective improvement method for carrying out the standard handling of differing AFC on Line 1 and Line 3. However, the introduction of AFC which allows standard boarding tickets to be used carries major benefits for users. For this reason, looking ahead to the future, it is necessary to establish unified AFC software which enables AFC to be utilized on all lines, and to steadily promote such software until it is used on all lines.

(3) Fare Settlement System Between Companies

If transit common boarding tickets or common boarding cards, etc. are introduced, it will be necessary to carry out settlement of fare revenue between companies.

This settlement work requires each company to provide information according to a basic agreement established between the companies and to distribute fares according to procedure. If there are numerous related companies, it is more efficient to set up a coordinating and transport settlement company to undertake all settlement work.

In Japan, fare settlement systems are established between JR companies, between JR and private sector companies, and between private sector companies. A separate company has been established to be in charge of settlement work between each JR company (case of JR is introduced in Chapter 4).

9.3.3 Passenger Services

(1) Passenger Services at Stations

(Shortening of distances between stations)

The arrangement of stations on urban railways is greatly affected by railway user trends, however, in the case of major cities in Japan and Europe, the average distance between stations is around 1.0-1.2 km. The average distance between stations on Line 2 and Line 3 is 1.3-1.4 km, but there is room to consider the construction of new stations while paying attention to future development conditions.

(Installation of escalators)

Movement from ground level to platforms is a major burden for rail users. On both Line 1 and Line 3, it is necessary to carry out the planned installation of escalators.

(Bolstering of ticket windows)

In order to mitigate congestion at ticket windows, it is necessary to make use of automatic ticket vending machines and to promote the sale of advance tickets (stored value tickets, etc.).

(Display of station names, etc.)

It is recommended that line names, station names, operating times, fares tables and standard train timetables be displayed in each station.

(Enhancement of communication and transport functions between railways)

In order to make transfers between different railways go smoothly, stations located at intersections between different lines should be positioned as close together as possible in the planning stage. As for stations which have already been completed or which are under construction, it is necessary to examine the optimum layout between stations and to adopt pedestrian decks, moving walkways, common latches or no latches, etc.

(Passenger guiding signs)

At stations where passengers transfer between different lines, it is necessary to install easy to understand transit signs. It is desirable for guide displays to adopt international pictographs as a unified sign system.

(2) Promotion of Related Businesses

It is common practice in Japan and other countries for railway companies to implement incidental related businesses to rail transportation in order to stabilize running of the railway business. Related businesses range from small-scale activities such as retailing and food and beverage selling within station compounds, to large-scale concerns such as utilization of whole station buildings as department stores or specialist outlets. The fundamental premise of these activities lies in making use of stations or company-owned property. Since many passengers concentrate in and around stations, it is important to make maximum use of them. In order to carry out related enterprises on a medium or large scale, the railway company concerned needs to raise around 20% of the required capital from its own funds. In cases of constructing station buildings for use by shops, etc., money (premium, guarantee money) is sometimes collected from scheduled tenants and used to cover part of the initial capital outlay. It is also important to separate the related businesses from the railway company and make them into independent subsidiaries, in order to enhance unique expertise, speed up decision making and clarify business management responsibility.

Related businesses on the railway system in Metro Manila currently consist of small-scale operations only, however, on Line 3, MRTC has plans to develop related businesses at its stations. Since LRT stations are subject to space limitations, it is recommended that related business development starts from stores, coffee shops, eating establishments and convenience stores, etc. which will improve the convenience of users.

Looking at the 29 stations situated along the Yamanote Line of JR East Japan in Tokyo, five stations have been subject to large-scale development such as construction of department stores, supermarkets and specialist outlets, etc., five stations have undergone medium-scale development such as retail stores, eating establishments and book stores, etc., and 19 stations have been subject to small-scale development consisting of snack bars, coffee shops and kiosks, etc. JR East Japan aims to tackle the expansion of related businesses utilizing stations as a priority issue.

(3) Improvement of PNR Services

PNR was constructed as a long and medium distance rail transportation system, and thus it has not functioned as an urban railway. PNR lines and stations in urbanized areas are on the level, and as a result they have numerous crossings and squatters live on the wayside. Improvement of PNR services must start with the securing of basic transport functions. Therefore, fundamental improvement of existing PNR line in central urban areas is required. (See Chapter 5 (Through Operation Policy) for the plan to improve PNR line in the urban area).

(4) Links Between Railways and Other Transport Modes

Securing links between railways and other modes of transport (buses, jeepneys, tricycles, etc.) is essential for improving the convenience of users. Methods for realizing this are coordinating operating lines, coordinating fares and improving connections in stations.

Coordination of fares is difficult in the current situation because the business operating base of each company is so different. Concerning operating lines, it is necessary to secure a division which enables the characteristics possessed by each mode of transport to be utilized to the full. It is necessary to carry out the reorganization of bus and jeepney routes in line with the opening of railway lines, and to adopt jeepney lines based around railway stations. As for improvement of connections between railways and other modes of transport at stations, description is given in Chapter 5 (Design Standards for Stations and Station Plazas).

9.4 Through Operation Policy

9.4.1 Necessity of Through Operation

Implementation of through operation, whereby trains travel between differing line sections, improves convenience for passengers and also has merits for the railway companies. Therefore, through operation is something which should definitely be implemented on sections where it is possible.

Seen from the viewpoint of passengers, the merits of through operation are as follows: ① transfer between lines at junction stations is no longer necessary and thus congestion is relieved at terminal stations; and ②arrival times are shortened because transfer time and train waiting time at connecting stations is removed.

Meanwhile, seen from the viewpoint of railway companies, the following advantages can be obtained: ①more users are attracted due to the greater convenience, and this leads to greater transportation volume and increased revenue; ②since only one connecting station is required for through operation, construction cost of one station can be economized on; ③since shuttling time at connecting stations can be omitted, the number of train formations can be reduced; and ④since consolidation and closure of train depots is possible, depots can be transferred from the city center and consolidated in outlying areas.

Problems with through operation are that costs may be incurred in carrying out improvement works to standardize basic specifications between line sections, and construction costs are incurred in securing connections between lines.

Accordingly, it is desirable that sections where through operation is to be implemented be decided in the railway network planning stage.

In Japan, through operation between different lines of urban railways was implemented from 1960 onwards. In Tokyo, through operation is already carried out on eight lines and is planned on a further four. Moreover, in order to promote through operation, the Ministry of Transport revised the Railway Business Law so that it became obligatory for railway operators to construct and improve facilities for ensuring the smooth implementation of through operation and transfer. Also, it became possible for the Minister of Transport to advise railway operators to take steps for making transfers proceed more smoothly.

9.4.2 Through Operation Implementation Sections

Railways which are already operating or are in the planning stage in Metro Manila are Line 1, Line 3, PNR, Line 2, Line 4, North Rail and MCX (see Fig. 5.1.3). Of these, through operation is possible on the following lines:

① Line 1 and Line 3 (since station facilities and line for connections near ESDA Station on Line 1 and Taft Station on Line 3 are complete and large-scale improvements are required, through operation is not a realistic proposition at the current time).
② Line 1 and Line 6
③ North Rail and MCX

Through operation from Line 2 and Line 4 to other lines is not possible due to different alignment, etc. However, concerning D. Jose Station on Line 1 and the areas around Recto Station and Old Bilbid Station where the Line 2 and Line 4 terminal stations are planned, it is necessary to construct facilities such as station connecting corridors which enable transfers to be carried out smoothly.

9.4.3 Implementation of Through Operation between Line 1 and Line 3

Line 3 is currently operating between North Ave. and Taft, and there are plans to extend it from North Ave. towards Monumento on Line 1 in future. The Study proposes that when carrying out extension of Line 3, facilities at Monumento should be adopted which enable through operation between Line 3 and Line 1.

Although the specifications of rolling stock differ between Line 1 and Line 3, through operation under set conditions is possible in terms of operation handling and equipment. It is easiest for Line 3 rolling stock to enter into Line 1, but there is also room to consider entry of Line 1 rolling stock into Line 3.

In the Study, transportation volume, transport plan, investment cost and operating cost, etc. were roughly calculated for the case where through operation is carried out between Line 1 and Line 3 at Monumento.

According to this, transfer time will be cut by 20 minutes, passengers will increase by 31 million per year (2015), and revenue will increase by 393 million peso per year. In addition, costs will be saved because construction of Line 3 Monumento Station will no longer be necessary, the number of train formations will be cut (excluding additional rolling stock

accompanying the increase in transportation volume), and administration expenses will be reduced. Meanwhile, it is estimated that the increase in works costs accompanying through operation will be 2.6 billion peso.

In other words, implementation of through operation on Line 1 and Line 3 will have benefits for both passengers and the railway operators.

9.4.4 Implementation of Through Operation between Line 1 and Line 6

Construction of Line 6 is planned from near Baclaran, the southern terminal of Line 1, towards Cavite in the south.

In the Study, it is proposed that when constructing Line 6, facilities be constructed at Baclaran which connect and enable through operation to be conducted between both lines.

The implementation plan and specifications for Line 6 are not clear as yet, however, facilities and rolling stock which make through operation possible should be adopted. If Line 3 is connected to Line 1 via Monumento and this is then linked to Line 6 from Baclaran, not only will this improve convenience for passengers, but from the viewpoint of railway operators, transportation volume will increase and it will be possible to move the rolling stock depot from the current inconvenient site in the city to land alongside Line 6.

9.4.5 Implementation of Through Operation between North Rail and MCX

It is planned for North Rail to run from Caloocan in Metro Manila to Clark International Airport and for the PNR line which currently lies idle to be utilized. MCX, which entails the rehabilitation and upgrading of the existing PNR Metro Manila commuter line, will run from Sta. Mesa to Calamba (south line). North Rail and MCX plan to vitalize and make use of PNR lines, but the section between Caloocan and Sta. Mesa will be discarded.

However, through directly linking North Rail and MCX, PNR will become a promising route for arterial transportation in Metro Manila.

In consideration of this, it is proposed that approximately 60 km of line between Manrilao on the North Line and Cabayao on MCX be upgraded to a double track electrified line so that through operation can be conducted and it can be used as a main line in Metro Manila.

In this case, on the section between Tayuman and Vitocruz, facilities are deteriorated, there are numerous crossings , and there is a problem with squatters. For this reason, the options of constructing elevated line or underground line on this section were explored (see Fig. 5.3.1 and Table 5.3.2).

Concerning the elevated line plan, since road and railway line which are already elevated or planned for elevation exist on this section, problems would exist in terms of structure and operation if railway line were to be constructed above these structures.

In the Study, it is proposed to carry out through operation between PNR North Line and South Line by constructing underground line on the section of approximately 6 km between Tayuman and Vitocruz and semi-underground line between Vitocruz and FTJ.

According to this plan, as a result of implementing the partial underground construction of PNR line, it is estimated that travel time between Marilao and Cabuyao (60 km) will be 81 minutes and that the annual number of users will be 509 million (2015). Meanwhile, 43 trains (430 cars) and 1,358 personnel will be required, and costs will be incurred in the execution of electrification works, double tracking works and underground construction works. (See Table 5.3.6)

Concerning the plan to carry out through operation between North Rail and MCX by converting part of the PNR line to underground line, it will be necessary to carry out a separate F/S and detailed examination, however, preliminary survey of the merits and demerits found the plan to be attractive.

9.5 Design Standards for Stations and Station Plazas

9.5.1 Necessity of Design Standards (Manual) for Stations and Station Plazas

In order for stations and station plazas to provide services which are safe, comfortable and convenient, it is necessary to design appropriate scale and functions and plan an effective arrangement of facilities.

Railway lines in Metro Manila have hardly any station plazas, and station facilities also vary a lot between lines. Therefore, it cannot be said that stations satisfy the functions that are required of them.

For this reason, it is effective to establish the standard scale, equipment, functions and layout of stations and station plazas according to the local characteristics, number of users and type of each station, and to develop stations and station plazas based on this standard. In the Study, station and station plaza design standards (manual) which are based on experience in Japan are proposed.

Planning of specific stations and station plazas does not always match with the design standards (manual) from the viewpoint of topography and layout, etc., but it is important to advance plans using the manual as a starting point.

9.5.2 Important Points in the Use of Station and Station Plaza Design Standards (Manual)

(Station facilities planning)

The size of stations is generally set based on the estimated number of users 15 years in the future. Concerning width of platforms, width of staircases, installation points of escalators and elevators, number of ticket barriers, area of station building, area of concourse and width of free corridors, etc., it is important to carry out computation based on standard figures.

(User-friendly station development)

Since vertical movement is a burden for physically challenged persons such as the elderly and disabled, it is necessary to install escalators and elevators. Since installation following the start of commercial operation is difficult, escalators and elevators should be introduced from the planning stage.

In order to make boarding and alighting and transfer of trains easier, it is necessary to adopt a sign system and introduce pictographs based on ISO international standards.

It is necessary to install toilets (including toilets for wheelchair users), platform waiting rooms, and facilities for physically challenged persons (guide and warning blocks, etc.).

(Station plaza facilities planning)

In addition to traffic handling functions, since station plazas possess exchange functions, landscape functions, service functions and disaster prevention functions, it is necessary to secure the necessary facilities and area.

However, since station plazas are strongly connected to land use plans and urban facilities plans in addition to railway plans, it is important to coordinate with local governments and other related agencies.

Concerning the required facilities and area of station plazas, standard scale and figures based on the number of station plaza users are proposed, and it is necessary to secure site land based on these data.

9.6 Institutional and Financial Methods for Station Plaza Development

Station plazas not only provide sites for changing between railways and other modes of transport, they are an integral part of urban facilities around stations. For this reason, since station plaza development is development of common social infrastructure and can only be implemented by the private sector (railway companies, etc.) to a certain extent, public sector involvement is necessary.

However, it would be financially difficult for the Philippine public sector to develop station plazas using its own funds; rather, public sector involvement should center around preparation of the business environment and provision of tax and financial incentives.

A possible means of realizing this is to utilize the Urban Development and Housing Act, Comprehensive Zoning Ordinance, and Local Government Code, etc., designate station plazas and surrounding areas, and establish a Priority Area Development System by which incentives are provided to businesses in such areas.

It is also effective to enhance the business environment through implementing deregulation, and to offer tax deduction and financial incentives on securities, etc.

Concerning the raising of funds, private capital should be utilized to the full: a promising alternative would be to receive investment from Philippine citizens at home and abroad through establishing an SPC (special purpose company) and issuing bonds.

Moreover, rather than raising funds separately for individual projects, it is better to set up a long-term stable fund (Urban Development Fund) and examine introduction of urban development tax, etc. as a new source of funds.

9.7 Preliminary Design of Stations and Station Plazas

9.7.1 Preliminary Design of Station Facilities

(1) Basic Specifications of Station Facilities

Concerning the two stations targeted for preliminary design, i.e. Monumento and Magallanes (NR/MCX) and Magallanes (LRT3), based on the station design standards (manual), the basic specifications of station facilities (length and width of platforms, number of ticket machines, width of stairs, number of escalators, etc.) were computed with consideration given to the number of users in 2015.

In order to simplify station facilities, it is important to reduce the proportion of tickets sold on the day by promoting commuter passes and coupon tickets (stored value ticket), and to adopt measures such as the even spreading of passengers during rush hour.

Moreover, concerning the question of whether to consolidate station personnel by introducing automatic ticket vending machines, etc. or whether to place emphasis on recruitment upon maintaining ticket windows, it is necessary to examine this from the viewpoint of social policy.

(2) Preliminary Design of Station Facilities

Facilities layouts, section drawings and improvement work procedure drawings were prepared for Monumento Station and Magallanes Station (PNR, Line 3). Also, economic and financial analysis and initial environmental examination in the case of station improvement and station plaza development was carried out.

Concerning Monumento Station, it is assumed that through operation will be carried out between Line 1 and Line 3. As for Magallanes Station (PNR), upon examining two options for the platform type, i.e. island platform and separate platforms, priority was given to the island platform alternative.

In order to realize these improvements to station facilities, it is necessary to prepare and implement the kind of action plan that is indicated as follows in section 9-8.

9.7.2 Preliminary Design of Station Plazas

(1) Basic Specifications of Station Plazas

Concerning the plazas of the two stations targeted in the preliminary design (Monumento, Magallanes), based on the station plaza design standards (manual), rough estimation was carried out on the required number of bus, taxi and jeepney berths and the necessary station plaza area. However, since areas around the stations consist of commercial and residential land, it will not be easy to secure site land for station plazas as planned.

For this reason, it is necessary to secure station plaza sites by utilizing the institutional and financial methods as described in Chapter 7 and to design realistic station plazas which are compatible with that land.

(2) Preliminary Design of Station Plazas

Evaluation was carried out on six alternatives for station plaza sites in the case of Monumento Station and seven alternatives in the case of Magallanes Station. Out of these, the optimum sites were selected and preliminary design was carried out on the station plazas and corridors linking them to the stations.

Also, economic and financial analysis and initial environmental examination were carried out for the case of station plaza construction at both stations. The results of this, as is described in Chapter 8, were favorable, however, the issues which face station plaza development concern whether or not existing residential land, etc. can be secured for station plazas, what kind of operating body should implement the development, and how the necessary funds should be secured.

Therefore, it is necessary to compile an action plan of the type indicated in section 9-8 and to execute this in planned stages.

9.8 Implementation Plan and Schedule

For the purpose of screening projects proposed in the Study for effective and efficient implementing, preliminary evaluation of the identified projects was carried out by means of qualitative comparison of their relative merits.

9.8.1 Proposed Projects and Programs

The proposed projects are shown as follows:

(1) Project List

1. Multi-modal Station Area Development
   Bus & Jeepney
   Terminal Development
   Pedestrian Deck Installation Project
   Access Road Improvement Project
2. Station Facilities Improvement Project
   Escalator, elevator, free pedestrian way etc.
3. Through Operation Project (LRT Line 1 & Line 3)
4. Bus & Jeepney Rerouting Project focused on Stations
5. Establishment of Taskforce Team for Materializing Integrated Transport Policy and Planning
6. Urban Development Fund Raising Program
7. Human Resource Development for Railway Sector
8. New Residential Area Development with Railway Transport
   LRT Line No.4 Extension & Expansion Project

9.8.2 Project Profile

(1) Muti-modal Station Area Development

1. Project Title : Multi-modal Station Area Development of Monumento and Magallanes

2. Implementing Agencies : MMDA, DPWH, DOTC, LGUs

3. Objectives : To materialize railway transport as a major urban transport in Metro Manila.
: To materialize integration with railway and other transport as show case of multi-modal station

4. Expected Effects : To reduce traffic congestion and air pollution.
To reduce travel time for Metro Manila and the suburban areas
To increase railway passengers

5. Probable Cost : 820 million pesos

6. Implementing Schedule : 2001 - 2005

7. Project Description:

1) Background

Historical experience on road developments without complementary railway networks in large metropolitan areas has shown the futility of such efforts. New roads simply induce more vehicles, requiring more roads in a never-ending loop.

Metro Manila recorded a total of 30 million person trips a day in 1996, only 2.3% or 0.4 million trips of which were carried by rail. With such a low base, the potentials for a railway-based mass transit system can only be high. Expansion of the railway network in Metro Manila will contribute greatly to the following: 1) alleviation of traffic congestion, 2) improvement of environmental condition through a reduction of air pollution and global warming, 3) savings in travel time, 4) safer and more reliable urban commuting, and 5) more efficient conduct of other urban activities.

The transport problem is already bad and is expected to get worse due to: 1) continued concentration of population and economic activities in the National Capital Region; 2) unordered expansion of the urbanized areas; 3) rapid rate of motorization triggered by income and population growths; 4) slow pace of road network development; and 5) lack of integration among different public transport modes.

The poor urban aesthetics as well as heavy reliance on carbon-emitting motor vehicles have conspired to create high levels of air pollution. Relief is not foreseen, without a drastic change in the transport system.

2) Necessity of integration of railway transport

If rail has to be integrated with other modes such as bus, jeepney and FX, so must there be also integration among rail lines. One of the means for integration is the station, which plays the role of a transshipment point. Because of its strategic location, a station brings about high potential for commerce, business and other urban services. At the very least, the station should be a place convenient and safety for all users.

Incremental railway traffic is generated by the emergence of commercial, business, and residential activities in the adjoining area. This induces a mutual relationship that could translate to heavier railway utilization, if not more profits.

3) Project Content

A development areas of Monumento Sta. on Line No.1 and Magallanes stations of MCX and Line No.3 are 10 ha and 7 ha respectively. The project components cover terminal development of bus, jeepney, FX and taxi, improvement/ development of access roads to the stations and pedestrian deck network.

The followings are land area of each component:

Monumento Area

	Facilities	Land Area (m^2)
1	Bus & Jeepney terminal	2,834
2	Pedestrian way (exclusive)	
3	Access road development	
4	Green zone	1,215
5	Pedestrian deck	6,000

Magallanes Area

	Facilities	Land Area (m^2)
1	Bus & Jeepney terminal	3,102
2	Pedestrian way (exclusive)	
3	Access road development	
4	Green zone	1,677
5	Pedestrian deck	3,600

(2) Station Facilities Improvement Project

1. Project Title : Station Facilities Improvement Project of Monumento and Magallanes Area

2. Implementing Agencies : DOTC, LRTA, MRTC

3. Objectives : To ensure smooth flow of railway passengers and to ease the burden for the disadvantaged persons

4. Expected Effects : To improve accessibility to the railway and to increase the railway passengers

5. Probable Cost : N/A

6. Implementing Schedule : 2001 - 2005

7. Project Description:

1) Background

In several instances, it has been observed that commuters are forced to negotiate long stairways between ticket barriers and platforms on separate floors, or between ground and railway platforms.

Stations and station plazas are nodes between rail transport and road transport. Although they may perform other functions depending on location on the route network, location-specific characteristics, scale or size, and other factors, the basic role of stations is to enable boarding and alighting passengers to use trains.

Each station should have: (a) facilities such as escalators, rest places, pedestrian ways, etc. that provide convenience and comfort to passengers; (b) transition zones to connect railway lines with other surface transport modes (jeepney, bus, taxi, etc.)

Rail, more than any other modes, depends on convenient transfers to attract users from feeder transport like bus, jeepney and FX, their office and residences.

Station plans shall be drawn following the eight rules for station facilities, viz.:

On the Overall Layout

1 - Opt for easy-to-understand passenger flows, where traffic lines are simple and visibility high.

2 - Adopt a flexible layout that considers space for future expansion and addition of facilities. Anticipate growth of users. Maximize width for ticket inspection.

3 - Install escalators, elevators, and slopes. Escalators and elevators should be installed inside and outside station compounds to promote rail use. Braille information/blocks would be helpful to persons with impaired vision. Continuous and smooth handrails are desirable for all type of users.

4 - Install public toilets (including toilets for handicapped persons) in inconspicuous but easy to find places. Height differences at entrances should be eliminated and automatic washing/cleaning explored.

Signage and information displays

5 - Make information displays easy to understand. Use LED displays for train information, time information and accident information, where appropriate. Standardize the size, positioning and display contents of signage. Position information boards perpendicular to the flow of passengers and advertisement boards parallel to the flow. Consolidate and integrate advertisements so that they don't clash with signage.

It is desirable that free corridors and platforms be positioned at the center of the station premises as much as possible, in order to minimize the walking distances of passengers and enhance visibility within stations. In addition, ticket issue and inspection barriers should be placed in areas that can easily be seen from passenger traffic flow lines.

2) Component of station facilities

Proposed station component elements can be divided into the followings:

Component of Stations to be improved

Passenger zone	Flow facilities	Platforms, concourse, passenger corridors, free corridors, escalators, elevators, etc.	Portion where passengers move around inside the station area
	Passenger facilities	Passenger toilets, in-station shops	Convenience facilities for passengers inside stations
Passenger & general zone		Free corridor or pedestrian bridge	Ensuring smooth flow for both railway passengers and others

(3) Through Operation Project on LRT Line 1 & Line 3

1. Project Title : Through Operation Project on LRT Line No. 1 & 3

2. Implementing Agencies : LRTA, MRTC

3. Objectives : To improve the railway services without transfer between different railway lines

4. Expected Effects : To reduce construction cost of additional station and investment cost of rolling stock.

   To increase the transport capacity

   To improve the service and to increase competitiveness due to time saving

5. Probable Cost : 3,089 million pesos at Monumento Station

6. Implementing Schedule : 2002 - 2006 for Monumento Sta., LRT Line 1 and Line 3 and North Rail Line

   2010 - for EDSA Sta. . LRT Line 1 and Line 3

7. Project Description:

   1) Background

   No plan is carried out for through operation plan for the existing railway lines and there is no coordination of the operation plan between other railway lines in order to save the investment cost and travel time. Therefore each railway line serves the operation with different system and without any relation ship.

2) Project component

Through operation shall be introduced between the different lines based on evaluation of the feasibility in order to generate additional passengers, reduce construction cost, realize savings in the purchase of rolling stock and in operation and maintenance expenses, to save travel time, and to boost overall convenience to the user.

For Metro Manila, the possibility of through train operation exists in LRT Line 1 and LRT Line 3, which could operate as a circumferential railway line. This can be achieved by interconnection at the Monumento station as well as at the EDSA station in the future.

Proposed component is shown as follows:

- Through operation on LRT Line 1 and Line 3
- Improvement and through operation for North Rail line and Manila Calabarzon Express Rail (MCX).

(4) Bus & Jeepney Rerouting Project focused on Stations

Project Profile

1. Location	:	Magallanes at junction of LRT 3 and PNR stations Monumento Stations of LRT 3 and LRT 1
2. Implementing Agency	:	DOTC
3. Objective	:	To modify the terminal, turning points, and/or loading and unloading of buses and jeepneys whose routes pass the proposed Magallanes and Monumento station plazas and other core transshipment areas, in order to facilitate transfers of passengers between rail and road-based transport as well as alleviate traffic congestion in the vicinity of the two plazas.
4. Description	:	The project is a complementary measure to enhance the roles of Monumento and Magallanes as inter-modal stations along the LRT 1 and LRT 3 corridors. About 9,700 and 700 jeepney trips/day pass Monumento and Magallanes, respectively. About 5,575-bus trips/day could

be served by a properly-designed Station Plaza on Magallanes, while the figure for Monumento is 2,890-bus trips/day. The main efforts will focus on identifying the specific bus and jeepney operators affected, informing them of the adjustments/re-routings, get them to appreciate the benefits, and synchronize the actual changes with the completion of the facilities. Other multi-modal station areas such as Recto, Fort Bonifacio, etc

5. Estimated Cost : US $300 thousands

6. Proposed Schedule : Starting 6 months before completion of station plaza development, Monumento, Magallanes and Recto.

7. Status : Feasibility Study completed, with specific forms of route adjustments required.

(5) Establishment of Taskforce Team for Materializing Integrated Transport Policy and Planning

1. Project Title : Establishment of Taskforce Team for Materializing Integrated Transport Policy and Planning

2. Implementing Agencies : DOTC, MMDA, DPWH, NEDA

3. Objectives : To formulate a systematic urban transport network in accordance with each transport mode

4. Expected Effects : To alleviate traffic congestion and air pollution, and to avoid a conflict between road and railway developments

5. Probable Cost : N/A

6. Implementing Schedule : 2001 -

7. Project Description:

Formulation of a systematic transport network in accordance with each transport mode

In order to convert from road oriented public transport system to the railway system as a dominant transport, a systematic transport network shall be formulated by mean of function of each mode and multi-lateral coordination based on characteristics of each mode of railway, bus, jeepny and private car. For the above purpose, a comprehensive transport development policy shall be introduced for the transport facilities development from the long-term viewpoint.

Establishment of railway network as a dominant public transport

In order to accelerate railway utilization and to formulate transport network with railway as a dominant transport, the following measures should be established: 1) development of bus and jeepny terminals, pedestrian deck and road improvement in the adjacent area for upgrading accessibility to the railway station from other transport mode, 2) improvement of railway station facilities furnishing with toilet, escalator, elevator and pedestrian overpass, 3) establishment of the railway technical standard to secure reliability and safety of the operation, and to execute the efficient investment, 4) introduction of the through operation, 5) introduction of the railway tariff system considering the users convenience, 6) establishment of organization to increase the railway utilization and to strengthen the railway transport , 7) reorganization of bus and jeepny routes and utilization of tricycle to the station within a sphere of the station, and 8) establishment of supporting law and regulation to realize the above.

Integration with land use and transport developments

Metro Manila shall be developed to integrate land use development and transport facility developments from medium to long-term viewpoints. The following measures are needed to formulate the systematic urban transport and railway networks:

- In order to strengthen a function of circumferential railway line (LRT No.3) and to disperse the urban function of CBD in Metro Manila, urban redevelopment in the northern part along the EDSA shall be promoted, in company with development control in the inner area of EDSA (C4). For example, industrial zone in the adjoining areas of Balintawak, transshipment point connected with the North Superhighway and LRT No.3, shall be redeveloped as industrial estate for the small and medium-sized and/or commerce/business center.
- New good quality housing development shall be constructed together with railway development within the sphere of 30km radius to meet the population pressure of

24miilion in 2015, in order to avoid concentration of the urban function to the inner area.

- Zoning at surrounding areas of the station shall be executed to promote the railway utilization. For the above purpose, station area developments should be designated in the comprehensive development plan of the LGU as soon as possible and the development should be legalized.
- In order to avoid inflow of inter-regional traffic to the CBD, bus and truck terminal shall be developed at the entrance points of the northern and southern parts.

(6) Urban Development Fund Raising Program

1. Project Title : Urban Development Fund Raising Program

2. Implementing Agencies : LGUs, MMDA, DOTC, DPWH、DOF

3. Objectives : To generate fund for urban development projects

4. Expected Effects : To promote urban developments under the mutual pact of private-public partnership

5. Probable Cost : N/A

6. Implementing Schedule : 2001 -

7. Project Description:

Undertakings are pursued under the mutual pact of Private- Public Partnership as based upon following principles.

(a) The undertakings are to be motivated and initiated by related parties in the private sector and guidance and assistances to the undertakings are made by a public entity.

(b) Related parties in the public sector are engaged in the development of resources such as available land lots and their locations, thus building more effective economic concentration. For this purpose, related parties secure financial resources and land, and renovate facilities for commercial, business, living activities, and these facilities will be leased or sold. Transportation facilities, public open space and public utilities are contributory to developing this process.

(c) A public entity shall be engaged in guidance, management, coordination and incentive provision. Only in an exceptional case, it is expected to participate in undertakings in the form of providing land lots or/and financial funds for constructing transportation facilities, public open space and public utilities.

The measures are expected to mobilize domestic financial resources and overseas factor income resources. Amazingly, the country enjoys rich factor income which reaches almost 10% of GDP {US$7bn / US$82bn (1997), US$ / US$65bn (1998), US$5.7bn / US$ (1999)}.

For this, preferential tax treatments on capital gains, interest and dividend are recommended in forms of tax reduction, exemption and rebate. Furthermore, by introducing guarantee and insurance systems supported by public measures into the private financial domain, risks on investment will be alleviated.

Appropriations from the national treasury are not promising. At present, national and local governments are already strained in funding their core projects, and would be hard- pressed to add another undertaking.

On a long-term basis, it is conceivable that an " Urban Development Fund " can be established in order to enlarge the number of station plazas coming into fruition. The stable and sound financial resources are designed to be available to cope with any undertakings of that sort. If each undertaking is carried out on individual base, private proponents cannot avoid being constantly concerned with financial matters. In worst cases, they could miss a business opportunity because of it. The fund could be based on economic benefits accrued from the station and station plaza development.

LGUs are dependent mainly on property tax, business tax and internal revenue allotment for their financing. Revenues sources are strictly limited. It is generally accepted that at local level, more portion should be shared by property tax. In addition to that policy for increasing revenues, LGUs should focus on establishing a new revenue source. LGUs could institutionalize a special levying system as a significant measure to recover development gain, pooling it into "Urban Development Fund". It is certainly yes that the other source of the Fund is bond issuing explained above.

(7) Human Resource Development for Railway Sector

1. Project Title : Human Resource Development for Railway Sector

2. Implementing Agencies : DOTC, LRTA, PNR

3. Objectives : To strengthen railway sector
To train railway experts of Philippines

4. Expected Effects : To provide safety and reliable train operations

5. Probable Cost : Approximate $1 million U

6. Implementing Schedule : 2001 - 2002

7. Project Description:

For the promoting railway development as a dominant transport together with road transport, the railway experts shall be raised for providing stable and convenient services. The training schedule for each expert is considered as about 3 to 12 months in Japan. The program composed of 1) seminar and 2) practical training

(8) New Residential Area Development with Railway Transport

1. Project Title : New Residential Area Development with Railway Transport in the Northern part of Metro Manila

2. Implementing Agencies : DOTC, DPWH, NEDA

3. Objectives : To make master plan of new residential area (Newtown) development
To conduct Feasibility Study

4. Expected Effects : To alleviate traffic congestion
To absorb population pressure

5. Probable Cost : N/A

6. Implementing Schedule : 2003 -

7. Project Description:

The transport problem is already bad and is expected to get worse due to: 1) continued concentration of population and economic activities in the National Capital Region; 2) un-controlled expansion of the urbanized areas; 3) rapid rate of motorization triggered by income and population growths; 4) slow pace of road network development; and 5) lack of integration among different public transport modes.

Following the trend set in the late 1970s, sub-urbanization is proceeding unabated without the corresponding land use development controls and advance reservation or delineation for a future transport network.

Short of re-building the urban pattern, the only feasible option to road-scarce Metro Manila is to shift a large part of future demand into railway transport. It is less demanding of land space, and capable of handling large commuter volumes.

Historical experience on road developments without complementary railway networks in large metropolitan areas has shown the futility of such efforts. New roads simply induce more vehicles, requiring more roads in a never-ending loop.

Metro Manila shall be developed to integrate land use development and transport facility developments from medium to long-term viewpoints. The following measures are needed to formulate the systematic urban transport and railway networks:

New good quality housing development shall be constructed together with railway development within the sphere of 30km radius to meet the population pressure of 2.4miilion in 2015, in order to avoid concentration of the urban function to the inner area.

9.8.3 Evaluation of Projects/ Programs

A preliminary evaluation was achieved by assigning a maximum value for each of the categories. The general value of the project was based on its (1) Necessity and (2) Viability, each being worth a total value of 50 points. Categories (1) and (2) are then disaggregated into constitution issues with the assigned number of maximum points as described below:

(1) Necessity (50)

1) Problematic severity (5)

Whether the existing systems and/or facilities present serious problems.

2) Demand responsibility (10)

Whether the existing systems and/or facilities properly respond to demand.

3) Development inducement (15)

Whether the project greatly contributes to inducement of other sector developments.

4) Economic contribution (20)

Whether the project greatly contributes to the regional economy by generating incomes and employment opportunities.

(2) Viability (50)

1) Project maturity (15)

Whether the project has been properly prepared for implementation.

2) Cost efficiency (20)

Whether the project yields responsible benefits and/or profits against investment.

3) Social implication (10)

Whether the project implicates serious social costs.

4) Environmental impact (5)

Whether the project creates serious environmental problems.

9.8.4 Implementation Schedule Towards the Year 2015

Taking into consideration the results of the preliminary evaluation above, an implementation schedule is proposed for the medium-term development and towards the year 2015, shown in Table 9.8.2.

Under the dawn of the Railway Age in the Philippines, in order to develop a sound railway sector, coupled with human resource development for the railway sector, the following should

be executed in the medium-term period: (a) establishment of an integrated transport policy etc., (b) strengthen administration institutions of the existing railway lines as a means of increasing passengers through improved railway facilities, and (c) construction of station plazas for improving accessibility to the stations.

Taking the viewpoint that traffic congestion could not be resolved without the railway development in Metro Manila, the role of the railway and road sectors shall be clarified under the integrated transport development policy. Appropriate development measure of the existing proposed railway lines should be considered under the above condition.

From the long-term viewpoint, dominant population concentration to Metro Manila of approximately 10 million people until 2015 is anticipated to cause even more serious traffic congestion and deterioration of residential conditions. In order to alleviate these problems, integration with residential area and railway developments (new town project) shall be executed in the northern part of the Greater Manila Metropolitan Area. Otherwise residential developments in the southern part are proceeding along the corridor of MCX.

Table 9.8.1 Results of Preliminary Evaluation

Evaluation Criteria / Project Name	Necessity					Viability					
	Problematic Severity	Demand Responsibility	Development Inducement	Economic Contribution	Sub-Rating	Project Matuarity	Cost Efficiency	Social Implication	Environmental Impact	Sub-Rating	Total Rating
Multi-modal Station Area Development	○	○	○	○	50	*	*	○	○	33	83
Station Facilities Improvement Project	○	○	*	○	43	○	*	○	○	40	83
Through Operation Project (LRT Line 1 & Line 3)	×	○	*	○	37	*	○	○	○	43	80
Bus & Jeepney Rerouting Project focused on Stations	○	○	*	○	43	*	○	○	○	43	86
Establishment of Taskforce Team for Materializing Integrated Transport Policy and Planning	○	○	*	*	33	○	○	○	○	50	83
Urban Development Fund Raising Program	○	○	○	○	50	*	*	○	○	33	83
Human Resource Development for Railway Sector	*	○	*	○	40	*	*	○	○	33	73
New Residential Area Development with Railway Transport	○	○	○	○	50	×	*	*	*	18	68

Table 9.8.2 Implementation Schedule (Tentative)

Project Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	-2015
Multi-modal Station Area Development											
Station Facilities Improvement Project											
Through Operation Project (LRT Line 1 & Line 3)											
Bus & Jeepney Rerouting Project focused on Stations											
Establishment of Taskforce Team for Materializing Integrated Transport Policy and Planning											
Urban Development Fund Raising Program											
Human Resource Development for Railway Sector											
New Residential Area Development with Railway Transport