



The Mass Transit System in Metro Manila: From Tranvia to MRT, 1879-2014

University of the Philippines System Emerging Inter-Disciplinary Research 06-008

Ang Magkaribal: A History of Road versus Rail in Metropolitan Manila, 1957-1985

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Abstract

Traffic congestion in Metro Manila has been the object of policy and planning intervention since the 1960s. By the 1970s, the proposed infrastructure solutions to the Region's emerging transport woes were, whether to increase and improve the quantity and capacity of the road systems or to develop a mass transit system based on rail transport. Most planners and development experts then advocated roads as gleaned from documents and plans by private or government institutions. Justifications were provided for the construction of new roads, but little attention was given to the improvement of train transport or the development of a rail-based mass transit system. Over time, reports and planning documents reflect the steady decline and neglect to the management and maintenance of the government-owned Philippine National Railways including the Metro Manila-based commuter services. With the use of historical documents, transportation materials, and planning blueprints, this study seeks to shed light on the debate between the two modes of transportation infrastructure and contribute in addressing the current gaps in planning history literature.

Introduction

Traffic congestion has been a growing concern in Metro Manila for over half a century. The delay of people, goods, and services not only causes inconvenience but also results to less productivity. This problem, which reflects a negative impact to our economy and society, started to become evident in the 1960s and early 1970s because of the rapid and poorly planned urbanization (population growth, land use change, economic concentration).

During those years, suggestions were raised to address the emerging mobility concerns on the expanding Greater Manila Area, most of which were proposals for the construction of wider and more extensive road network. While the clamor for





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road-based mobility has been consistent since the Post War period, the support for rail-based infrastructure experienced a seemingly downward trend especially under the Marcos regime.

Through the use of historical documents, transportation materials, and planning blueprints found at the University of the Philippines-Diliman, this study seeks to explain the increasing importance given to roads as opposed to its rail-based counterpart, especially during the Marcos Era wherein the neglect to rail-based transportation had reached its highest point. This study specifically aims to: (1) provide a brief history of rail-based transportation in the Philippines from the late 19th century until the 1970s; (2) review materials that narrate the increasing neglect given to rail-based transportation in Metro Manila from 1957-1985; (3) present proposed plans for rail-based transportation in Metropolitan Manila; and (4) present works that justified the construction of roads in the country from 1957-1985.

The Street Railway: Tranvia

The story of rail-based transportation in the Philippines traces its roots back in the late 19th century. The idea of establishing a tranvia network system was the brainchild of Leon Monssour, an officer in the Spanish colonial government. The franchise for the construction of the tranvia lines was awarded in 1881 to a private company, *La Compania de Tranvia de Filipinas* (LCTF) owned by Don Jacobo Zobel de Zangroniz, and Don Lucio Maria Bremon.

The tranvia started to operate the first line that traversed between Binondo and Tondo in 1884. Operations of the remaining four lines, together with an extension line of Tondo going to Malabon, the only line that utilized steam-powered trams, soon followed thereafter. The completion of the whole system had a total length of 20kms that covered major thoroughfares in Manila, which by then had an approximate population of 200,000. The trams were pulled by horses and runs at an average speed of 8km/hr. Each tram can accommodate up to 20 passengers; and arrived at every station every five to ten minutes interval.

The system was well-utilized and daily ridership reached around 20,000. Later on, however, in the 1890s the tranvia faced numerous problems such as the epidemic that affected the horse population, the difficulties in acquiring horses due to the Spanish-American War and company mismanagement that forced the company to sell its assets later on to MERALCO.





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In March 1903, a few years after the American occupation of the country, the municipal board of Manila granted Charles M. Swift, a franchise to operate an electric street railway service and furnish electric current for light, heat, power for the city and its suburbs for 50 years. Swift together with financiers and an engineering firm, J.G White & Company Inc, organized the Manila Electric Railroad and Light Company, popularly known as Meralco.

Meralco was established to provide a modern rapid mass transportation that would replace the outdated horsecar system and provide an alternative to the various horse rigs plying the city. In September 1903, the construction of tracks and overhead system formally began. After a year and a half of construction, in April 10, 1905, the new electric street railway system was formally inaugurated. On the day of its inauguration, Manila residents were treated to free rides on the Belgian single-truck *jardinera* or open sided cars. Local and foreign residents of Manila patronized Meralco's *tranvia*. On its first day of commercial operation, conductors collected fares amounting to ₱1,200.00 pesos, even though the only lines open during that day was between Santa Ana and the Customs House via Intramuros and via Escolta.

By the end of 1903, the *tranvia* network had an aggregate length of 35 to 40 miles of track. Initially, Meralco had five lines that covered not only areas formerly served by horsecars and stream tramway but also other important sections of the city. In 1911 and 1912, Meralco added two important lines in its Manila system. By 1925, the network had about 52 miles of track and the company already owned 50-single truck cars, 123 double-truck cars mostly of the closed type, and 15 assorted cars. In the same year, the streetcars carried a total of about 35.1 million passengers.

More than providing for a public transportation, the *tranvia* helped sparked and direct growth development not only within the center but also in the outlying areas, hastening their integration to the center. Furthermore, the electric *tranvia* made it possible for people that worked within the business districts of Manila to set up their homes outside the chaotic confines of the city where land was available, cheaper, and rents much lower. Despite the success of the electric *tranvia*, the increasing cost of track and overhead facilities including its maintenance forced Meralco to halt further expansion of the network and instead shifted its investments in autobuses. Over the years, as the bus service grew, patronage of *tranvia* declined. The expansion of bus services meant the retrenchment of street railway, for the reason that some streetcar lines were replaced with bus line.





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During the Second World War, the Japanese commandeered the tranvia but later on resumed regular services. For three years, tranvia operations were managed by the Japanese but lack of adequate maintenance and technical expertise, the tranvia system deteriorated. Furthermore, the great flood of 1943 inflicted heavy damage on the system. By January 1945, only 16 cars were fit for service. Finally, in the waning days of 1945, most streetcars and its tracks were destroyed due to the fierce fighting between Japanese and Americans forces. After the war, Meralco decided not to rehabilitate the tranvia system and instead focus on electricity generation. The war of liberation finally put an end to the tranvia system.

The Iron Horse: From Ferrocarril to Philippine National Railway

It was also in the 19th century when a Royal Decree ordered the preparation of and submission of plan for a railway system in the country. A Spanish official by the name of Don Eduardo Navarro prepared a general railway plan that was submitted in Madrid in 1876 and was approved by 1883. The concession to build a railway line from Manila to Dagupan was granted to Don Edmundo Sykes, but was later on transferred to the Manila Railroad Ltd. of London. Construction of the line began in 1887. By November 1892, the 195-kilometer railway finally was opened to the public.

On February 1916, the Philippine legislature passed Act No. 2547 that transferred control to the Manila Railroad Company (MRR). Expansion of the lines of MRR continued until the 1940, where the railway lines have extended as far as Legazpi, Albay in the South and San Fernando, La Union in the north with different branch lines and had an aggregate length of 1,140.5 kilometers of main-line track.

During the Japanese occupation, the lines were used for military purposes and the system suffered heavy damage. After the war less than half or 452 kilometers of rail track was preserved and made operational. The following years were directed to rehabilitate or reconstruct the tracks that have been destroyed.

By virtue of Republic Act No. 1456, on June 1946, a new charter was passed renaming the company to the Philippine National Railways. In the 1950s, the PNR underwent modernization or dieselization program, where steam engines were replaced by electric diesel engines.





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The Decline of Philippine National Railway

Post-war Philippines witnessed the end of *tranvia* operations and the rehabilitation of less than half of the original length of Manila Railroad Company later on referred to as Philippine National Railway. Unlike the pre-war period, when there were calls and support for rail-based transportation by both the government and the public, post-war Philippines was more attuned in reconstructing the country without much attention given to its dwindling rail transport. Post-war works, whether produced by individuals, academics, private entities and even government institutions continuously note the increasing deficiencies and the lack of attention given to PNR.

The earliest among the works that expressed concern for PNR as early as 1957 was a study of Stanford Research Institute (SRI) entitled *An Economic Analysis of Philippine Domestic Transportation Vol V. Railroads*. In assessing the Manila Railroad Company, SRI stresses that it is performing an economically and socially useful function and should be retained under government operation. SRI notes, however, that among the fifty-one nations, the country ranks fiftieth in freight car rolling stock, forty-third in passenger cars and fiftieth in number of locomotives due to the short length of rail lines, even pointing out that the length of railroad lines in the country was less than that of Ceylon. SRI provides eight recommendations on how to improve the situation of PNR, but these recommendations fell on deaf ears that would later on manifest in the PNR's operations.

The recommendations of SRI that were not given much attention, manifested in the train's operations by the 1960s. In his graduate thesis *Transportation in National Development*, Paterno Santos notes the important role played by the railroad in the economic growth of the country after World War II. He adds, however, that despite the progressive role of railroad in the country's reconstruction, he notes the emerging problems of PNR such as ruined railroad stocks, neglected rail tracks and equipment, which have caused poor service and in turn led to steady decline of passenger ridership.

In the 1970s, works that state the increasing problems of PNR increased exponentially. In his 1972 work, *Transportation Systems Metropolitan Manila (TSMM)* Sigurd Grava reviews the work programs and transportation progress of the Philippine government in the Manila Bay Region. Citing in his work, an Indian Study Team, Grava reiterates some of the problems faced by PNR, namely maintenance inadequacies and progressive shortage in rolling stock. Grava was also pessimistic about the promised financial assistance and rejuvenation of the rail-service.





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He quotes that “while the greatly deteriorated state of railroad service is known to everybody, it apparently does not cause deep concern (Grava 1972, 26).

A year after Grava’s Transportation System, a collaborative work between the National Economic Development Authority, Department of Public Works, Transportation, and Communication, University of the Philippines, and United Nations Development Programme published *Physical Planning Strategy for the Philippines Volume VIII, Transportation (PPSP)*. The work is an analysis of different transportation systems in the country. The document states that the re-christened Philippine National Railway as a transport system can only be considered secondary in importance against roads. While the work gives primacy to roads, it echoes the concern of Grava regarding the train’s serious and increasing deficiencies in rolling stock and track maintenance. It further adds that the recent floods have caused temporary halt on the train’s operations and have caused heavy damages to its line. The work suggests to forego the planned extension of lines in Luzon except in Metropolitan Manila, where the train service continues to be an important part of the overall mass transit systems.

The DPWTC in 1975 published the *National Transportation System (NTS)* that aims to provide an assessment on the transport situation in the country. NTS reiterates the warning of PPSP and TSMM regarding the “increasing deficiencies in rolling stock and maintenance” (DPWTC 1975, 18). NTS adds that the Marcos government has a number of improvement plans for the rehabilitation and improvement of railway service, but admits that such plans are moving at a slow pace compared to the increasing demand for railway service, which is exemplified by the rehabilitation of Batangas railroad line. Furthermore, it adds that government has additional infrastructure projects for the PNR, covering the year 1976-1979; however, it states that implementation is hampered by lack of funds to finance the given projects.

In 1978, the Inter-Agency on Technical Committee on Transport Planning (NEDA, DPWTC, DPH, PNR, MARINA, PPA, & CAA) published the *National Transportation System Study Volume III, Rail Transport, (NTSS)*. The work provides an assessment of railway transportation in the country. Echoing the earlier calls of previous works, NTSS notes that the railway system in the country is riddled with problems, which greatly affect the whole network of operation. Unlike the previous studies, NTSS specifically enumerates the problems faced by PNR among which includes: (1) manpower shortage; (2) lack of efficient maintenance program of way, structures and equipment; (3) scarcity of supply for road and structure rehabilitation; (4) obsolete





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locomotives and shortage of rolling stock; and (5) obsolete design of rail-cars with inadequate impact resistance, poor passenger accommodation and bad riding character. The NTSS warns that if the problems are not faced with enthusiasm it may be impossible to justify its retention either in part or in whole.

NTSS further traces the gradual decline of PNR beginning in the post war years. It notes that the period of 1946 to 1953, the Manila Railroad Company (MRR Co.) saw a steady increase in operating losses. The government took measures and beginning in 1954 saw improvements to the railroad. However, in the 1960s, despite the improvements undertaken by the government, railway fortunes continued to decline together with traffic levels. Due to the deterioration sustained by the MRR Co., Congress was forced to pass Republic Act # 4156 that replaced the old name of the Manila Railroad Company to the Philippine National Railway together with 90 million pesos as its capital stock and a tax-exempting clause. However, as it turns out, all these "improvements" are just "paper relief." In 1971, through the Republic Act #6366, PNR was assured government funding for the next four years. PNR embarked again on rehabilitation and selective modernization. However, PNR traffic continued to decline between 1974 and 1977. Both passenger and goods traffic appear to have been lost to road competition following the improvement of trunk road parallel to the south line, from Manila to Bicol.

In 1982, a joint collaborative work among NEDA, MOTC, MPWH, PNR, PPA and Marina, published *NTPP Final Report Part VI Rail Transport*. The work deals with all aspects regarding PNR's operations and provides recommendations for short-term actions to remedy the problems and improve the performance of PNR. The report notes that in terms of the number of passenger and freight tons carried by PNR, traffic has fallen sharply since the peak periods of the late 1950s for freight and early 1960s for passenger ridership. NTPP faults the PNR's general loss of traffic to the gradual improvements of the standard of the highways to the north and south of Manila. Together with road improvements, the cumulative effect of years of neglect on PNR's condition, consequent reduction of train speed and the number of derailments has made passengers and even freight movements unreliable and deterred potential customers.





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The Dream Plans

Aside from the works that remark the continuing wear and tear of PNR, while providing short and long-term solutions, there were also documents that did not simply stop at pointing out the problems of the system but proposed new railway lines to ease the traffic congestion in the city. The few works that suggested the construction of additional rail transport network also justified why rail is better suited in solving the capital's traffic problem as against to road infrastructure.

Among the individuals that proposed for the construction of rail-based transportation in Metro Manila was that of Sigurd Grava. Grava, a transport expert and UNDP consultant, notes in his work, *Transportation Systems Metropolitan Manila Assignment Report*, that “without public service the metropolitan area will soon cease to be able to function.” (Grava 1972 p.1) He adds that the booming population and economic growth would put the transportation situation at a standstill unless remedial measures are taken and immediate facilities planned.

Although Grava reviews the different transport systems in Greater Manila Area, specifically bus, jeepney, monorail system, railroads right-of-way, subway system or the combination of different transport modes; he explicitly states that his main work “has been in the advocacy of a rapid transit system for Metropolitan Manila” (Grava 1972, vi). He argues that highway and expressway would not be a proper approach within the presently built up areas; there would be no space for it and would disrupt the community and business environment entirely. He adds that no highway could hope to carry the existing and projected passenger volumes and huge resources are not available. Therefore, he suggests that there is no choice but to consider a complete rapid rail system: either a subway or elevated network.

In the proposed Monorail Transit Systems, Grava admits that the system does merit careful and independent analysis, particularly to determine its service capabilities for the resident population but admits that such system has a “doubtful future.”

The focus of Grava's work, however, was to propose a network configuration for a rapid rail transit system. His proposed initial line would run from Quezon City touching the government area and proceeding parallel to Quezon Boulevard and España Avenue toward the CBD. He suggests that the line should not be located directly above or below major artery, but be located a block or two away, to prevent excessive concentration of traffic at station locations and to avoid unmanageable disruptions





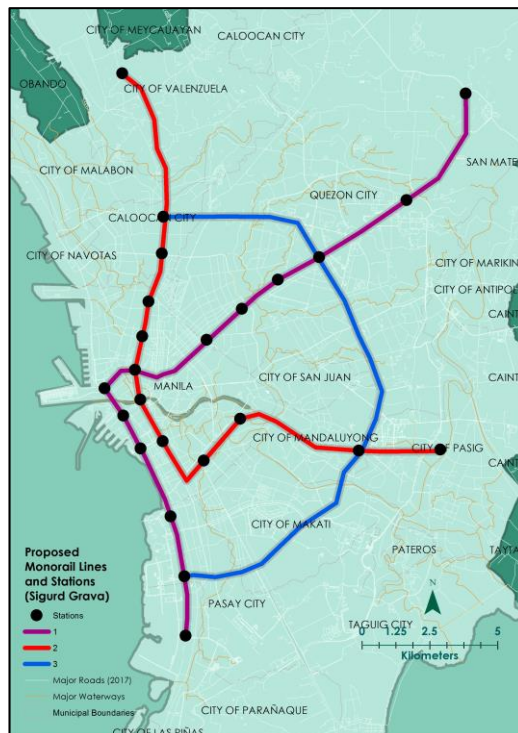
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during construction. The station spacing along the line would be 2 kilometers or slightly more to allow direct foot access by a maximum number of residents in the corridor. In the central area, the stations would be placed even closer to accommodate the riders. After stops at Intramuros and in Ermita, the line would run southward through the dense corridor between Taft Avenue and Mabini Street. The final leg could take two alternate paths: (a) directly to the airport along its west side bypassing Makati center which seems to function quite well at present without public transportation; (b) through Makati to the industrial sectors south of the urbanized areas.

The Line 2 proposed would run southward from Malinta paralleling Rizal Avenue, through the Eastern Part of the CBD, turning directly east after passing the Central Post Office and City Hall, crossing the river again, running near Shaw Boulevard, and terminating in Pasig. He admits that Line 1 and Line 2 would run a parallel distance, to provide better coverage in the high intensity area.

On its Line 3, he proposes a radial (sic) line from the inner loop extending along España Avenue through the government and university clusters of Quezon City. He hopes that later additions to the system would follow the pattern of radial lines from suburbs that will terminate at the loops that will provide internal distribution.



Map 1. Proposed Railway Lines by Sigurd Grava.





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Grava justifies that the initial stages of his proposed rapid transit system are urgently needed to cope with the accumulated deficiency in transport capacity in the developed area of Manila and its suburbs. He adds that the construction of the network should proceed at a faster pace than the rapid growth of Manila, in order that the rapid transit lines can be planned and constructed as channelizing and controlling elements of regional patterns, not simply as a transport service to communities.

Aside from Grava, the Marcos administration through the assistance of Japan also came up with proposed rail lines. The lines are discussed in detail in the report of the Overseas Technical Cooperation Agency (OTCA) entitled Urban Transportation Study in the Manila Metropolitan Area or popularly known as UTSMMA. The work is among the few documents that promotes both road and rail base infrastructure. Although it reviews the different transport system in MMA, it gives particular attention to the construction of new rapid rail transit and improvement of PNR.

The document noted that MMA is expanding at a rapid pace, the population is even expected to double in 1987 TO 7.5 million. Following such an expansion of MMA, there would be an increase of traffic demand. The work admits that although a transport network is assumed, daily traffic volume in some sections may continue to exceed 400,000 persons. In order to handle such enormous traffic efficiently, UTSMMA believes that no other means of transportation except the railway system is conceivable. It argues that, in terms of transport capacity, the railway has 10 times greater passenger capacity than that of buses which is a representative of transport system for surface traffic. In terms of speed, the average scheduled speed of the railway transport is 30km/hr. while the bus can only travel at about 13km/hr. in congested areas. Furthermore, railway is considered to be more flexible in meeting traffic demand as opposed to buses. Lastly, the numerous advantages of rail over bus transport makes it an indispensable entity for MMA as a part of diversified transport demand.

UTSMMA, despite its call for the construction of rail, also admits the many problems associated with rail transport which includes; the enormous amount of investment for the construction of facilities, high level of technology, and relatively long distance between stations. The document, however, notes that despite such disadvantages, railway transport has many unique features that cannot be equaled by any transport facilities and should be introduced to MMA.





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Just like Grava, the work also notes the proposed monorail system, although cheaper to construct, UTSMMA admits that it can only accommodate 1/3 to 1/2 passenger capacity than that of two-rail system. It adds that the problem with the monorail system lies in train switching difficulties that increases further as the length of train increases. Due to these disadvantages, UTSMMA does not recommend monorails in areas of high density where traffic demands require maximum passenger capacity.

The proposed lines of UTSMMA consist primarily of radial lines converging on the present CBD and a circumferential line linking the proposed sub-centers. For the radial lines, UTSMMA proposes three lines passing through CBD and one line ending in CBD, together with a circumferential line. The proposed railway system may be termed as subway system, but the sections actually built underground may be limited to CBD, where acquisition of land is very difficult and also expensive, other sections may be elevated structures or on the surface, depending on the density of road network and land use along the lines. The proposed rail mass transit network consists of the following lines.

The proposed subway/elevated lines are as follows:

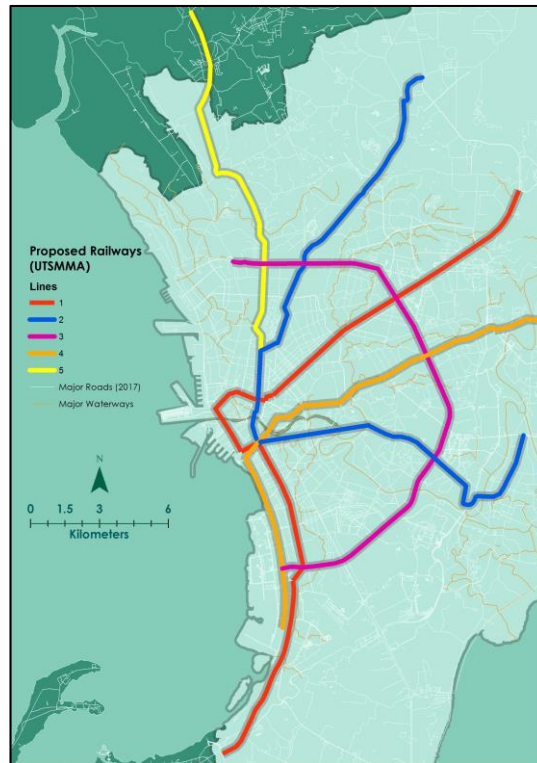
- Line No. 1 - From Constitution Hill to Tatalon via Central Quezon City, downtown Manila and the International Airport.
- Line No.2 (36.0 km.) - From Novaliches to Cainta via downtown Manila and Pasig.
- Line No. 3 (24.3 kms.)- Along E. delos Santos Avenue (C-4).
- Line No. 4 (30.1 kms.)-From Marikina to Zapote via Cubao, downtown Manila and the Manila Bay Area.
- Line No. 5 (17.6 km.) - From Meycauayan to downtown Manila running between Route No. 2 and PNR.





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Map 2. Proposed Railway Lines by UTSMMA.

Aside from the proposed network, UTSMMA also calls for the improvement and rehabilitation of the PNR lines in the north and south to complement the proposed rail network. Among the proposed improvement of PNR includes construction of double tracks, electrification of lines, construction of elevated railways, and relocation and addition of stations. It adds that there should be good connections between the lines of PNR and the proposed subway, in and around CBD, where only one or two transfers will be necessary for travelling in any directions.

In 1976, the Japan International Cooperation Agency (JICA) published The Feasibility Study of Rapid Transit Railway (RTR) No. 1. The work was a spin-off of the 1973 UTSMMA and like any feasibility studies, had detailed economic, financial, and technical components. Due to the projected populations of Metro Manila in 1987 (5.7 million) and 2000 (7.5 million), the JICA plan just like its predecessor suggested a heavy rail type transit, which can accommodate more passengers. To emphasize that a rapid rail transit could have an effect on the landscape of Metro Manila, the plan stresses in detail that population and land use patterns would be influenced by the establishment of the said infrastructure and the heavy rail line will affect the commercialization of areas around it.





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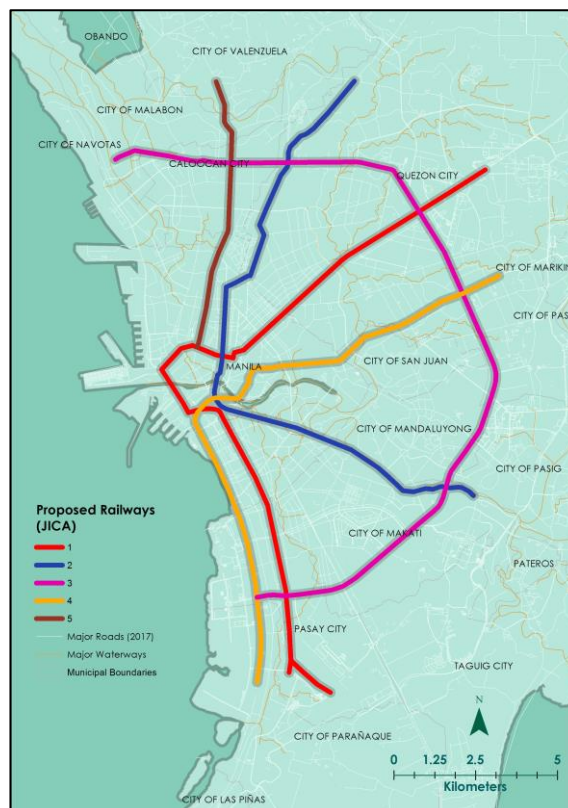
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Since the JICA plan is a spin-off of the UTSMMA, the plan does not deviate largely from the original plan. The proposed line network has an aggregate length of 25 kms and the trains may be partially underground and partially elevated to reduce the cost of construction. The lines proposed also take into account the future traffic growth along its corridor.

The lines proposed are as follows:

- Line 1: Manila Airport- COC- QC
- Line 2: Balintawak-COC Pasig
- Line 3: Caloocan- Quezon-Cubao-Makati- Baclaran
- Line 4: Cubao-COC-Baclaran
- Line 5: Bulacan- Binondo

The plan recommended that Line 1 is made up of 23 stations and notes that the line would take 1012 years to construct. Due to the inhibitive costs of the heavy rail network, JICA, admits that it is unlikely that all lines would be completed by the year 2000 due to the financial and technical constraints.



Map 3. Proposed Railway Lines by JICA.





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The Love for Roads

While there were calls for the rehabilitation of PNR and construction of additional rail-based transportation, there were also studies that placed primacy on the importance of constructing roads while downplaying the role of railways. Among those studies is made by the University of the Philippines Institute of Planning (today School of Urban and Regional Planning) in 1968 entitled *A Planning Strategy for Metropolitan Manila A.D 2000* (1968) [PSMM 2000].

The study sought to provide solutions to address the emerging traffic problem of Metro Manila. PSMM 2000 notes that the present railways in the region are utilized only to a fraction of their capacity, even pointing out that some railroad tracks have been abandoned.

The document suggests that in order to solve for the traffic problem, the government must decentralize activities in the CBD and redevelop the built up central area through the rearrangement of land uses, provision of basic infrastructure and services, and diversification of employment. The plans of decentralization and redevelopment would be supported by an integrated transportation system composed of roads, rail, air, and water.

The proposed transportation plan of PSMM 2000, is supposedly designed to efficiently connect the residential, employment, shopping and recreation areas with one another. To attain such plan, the document shows its clear bias for road-based transportation, for it proposes a combination of ring and radial road network. The network is expected to provide more roadway capacity where the demand is high. The proposed highway system consists of main corridor roads, secondary roads, collector and local streets. The main corridor routes are the national highways, portions of which are turned into freeways. Arterial roads or secondary roads would serve as provincial and municipal roads which feed the collector and local streets. The proposed road network is supported by the proposed rapid transit system, which according to the document is designed only support the road system by diverting the maximum number of trips from the highway.

Three years after the PSMM 2000, another Academic Institution namely, the Ateneo De Manila, Institute of Philippine Culture published *Metro Manila Today and Tomorrow*. The document reiterates some points made by PSMM 2000 on the causes of traffic congestion, but adds that poor traffic management, haphazard city land





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development, inadequate physical facilities and lack of planning also played a part in the traffic problem of the region.

The study suggests some immediate and long-range proposals to solve for the Metro Manila's traffic problems. Among its long-term proposals is the establishment of a monorail train system. The franchise to build and operate the monorail was granted to the Philippine Monorail Transit System, however, the study observes that lack of enthusiasm and support from the government has led to the project's delay. Aside from the monorail, the document suggests the creation of an integrated planning of infrastructure development to expand the road capacities in the region. Some of the proposed road expansion programs include the construction of overpass-underpass complexes, interchanges at various points, several elevated expressways, extensions of national highways, construction of bridges and alternate routes.

Aside from academic institutions, international organization such as the World Bank also reviewed the existing transportation systems of the country. In its funded study, Transport Planning in the Philippines, (TPP) the document states that its main goals are to review the organization and practices of transport planning; and propose transport investment program for the period 1976-1979.

TPP notes the underinvestment given to the government owned Philippine National Railway which had resulted to its declining services and deficit operations. It adds that the First Rehabilitation Plan (1971-1975) had somehow improved its facilities. The improved services of PNR have resulted to additional capacity both in passenger-km and ton-km mileage. The improvement of PNR's facilities and rolling stocks clearly shows that when rail transportation is given proper attention it delivers to its promises. Aside from the limited rehabilitation plans for PNR, TPP was not keen in encouraging the development of rail-based transportation. The document heavily criticized UTSMMA saying that the Japanese study "does not provide an adequate basis for assessing either the social and economic benefits and costs of these proposals or their physical and financial feasibilities; by ignoring the constraints on resource availability for transport purposes, the study failed to establish even the scale of a feasible investment program, much less the priorities of its various elements" (Park 1976, 37). TPP believes that the Philippine government simply cannot undertake such a risky venture, instead TPP suggests policies and programs that can help ease the traffic congestion in MMA that are not too costly for the government.





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Among the proposed projects of TPP is the construction of highways. In its proposed Four-Year Transport Investment Program for the period of 1976-1979, which envisages an expenditure of 11.2 billion, 80% is allocated for highways and the remaining 20% would be shared among railways, ports, and airports.

TPP adds that the planned infrastructure program for highways accounts for about 9 billion pesos. Moreover, half of the proposed expenditures is devoted to on-going and new projects that received foreign financial assistance which includes among others, the Japanese financed Pan-Philippine Highway, ADB-finance general Santos-Cotabato Road, and the IBRD Second Highway Project, that comprises the upgrading of 640 km of primary roads and 56 km expressway in Luzon.

A year after the TPP, the WB funded yet another study entitled, Metro Manila Transport, Land Use, and Development or MMETROPLAN. The project was conducted from 1976 to 1977 and was undertaken by a joint team of the Government of the Philippines together with their consultants Freeman Fox and Associates. According to the document, the objective of the study was "to arrive at a meaningful plan and programme to guide transport investments and operations within the context of a rational land use pattern". (MMETROPLAN 1977, 1)

MMETROPLAN again castigated a number of proposed transportation system in MMA, which includes the monorail plan, improvement of the Philippine National Railways and the heavy rapid transit of UTSMMA. The study remarks that there is no monorail in the normal urban service of the world, and that it cannot compete with a light rail system. As to the improvement of PNR, it notes that "the [PNR] routes related poorly to the major demands for movement, [and] that it would be very costly to improve the system significantly." (MMETROPLAN 1977, 48)

MMETROPLAN also criticized the proposed heavy rapid transit of UTSMMA. The study notes that the line suggested by UTSMMA running from the University of the Philippines to the Domestic Airport would cost over \$500 million, which according to MMETROPLAN would "take nearly all investment funds estimated to be available for transport for the next 14 years" (MMETROPLAN 1977, 47). Moreover, although the line "would provide a much faster journey", the system would only attract 2.5% of motorists and "would have negligible impact on traffic congestion" (MMETROPLAN 1977, 48).





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Among the long-term recommendations of MMETROPLAN to address the traffic in MMA includes: cordon pricing, bus/jeepney lanes, LRT, and highways. Although MMETROPLAN criticized the proposed lines by the Japanese, it admits that rail-based mass transit is indispensable to service the city and recommends four lines. The lines proposed by MMETROPLAN, together with its suggestion of continued use of buses and jeep (cheaper modes of transport against HRT) would help decongest MMA. The lines would be in the form of Light Rail Transit, resembling those systems in Europe and North America. The proposed LRT would get electric currents from overhead wires and follow traffic signals similar to other modes of transport. Granting that MMETROPLAN has proposed lines for LRT, the lines proposed are however much shorter and limited than those proposed by either Grava, or UTSMMA.

Despite the recommendation of MMETROPLAN to construct LRT, it gives more attention to the construction of highways in the urban and outer areas. In the urban areas, it proposes that Circumferential Road 3 between Tayuman/Governor Forbes/President Quirino Boulevard (Circumferential Road 2) and EDSA should be completed. Furthermore, Gregorio Araneta Avenue should be upgraded and linked west through Caloocan to the coast by construction of the northern section of C3 linked south through San Juan and Mandaluyong to Buendia Avenue. Moreover, it adds that northern section of Circumferential Road 2 should be upgraded.



Map 4. Proposed Road Construction of MMETROPLAN





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Outside the built-up areas, MMETROPLAN recommends development of highways in the north and south sector of MMA. In the north of Manila, the study suggests that the Republic Avenue and its associated link roads would form the framework in guiding the development in the area. Likewise, in the south of Manila, it adds that improvements must be made in the existing highways, together with a link road from Bicutan on the South Superhighway to the Paranaque/Sucacat and Zapote/ Alabang road.

Observations

Rail-based transportation systems have always been a part of the country's history. The horse drawn, later on electric *tranvia* together with the *ferrocaril* transported people, goods, and ideas and also sparked growth and development outside the built-up areas. Despite the important contributions rendered by the railways both socially and economically to the country, post-war Philippines has not been kind to all forms of rail transportation.

Post-war works notes the numerous problems and deficiencies by the Philippine National Railway, but despite the repetitive calls for rehabilitation and modernization of the system, little work or effort was given to the system that led to its continuing decline beginning in the 1960s.

The decline of services by the PNR coincides with the emergence of traffic congestion in Metropolitan Manila. To solve for the emerging traffic problem, individuals, academic institutions, private entities and government agencies published numerous works that debated on the best transport infrastructure that would remedy the increasing traffic problem. On one hand, there were those who supported rail-based transportation and called for the improvement of PNR. But there were also those that proposed for additional rail-based transportation system within the region. In his work, Grava proposed a mixed subway/elevated rail-based transportation that could ease traffic congestion and service the booming population of the region. Likewise, the works by the Japanese (UTSMMA & JICA) have also proposed lines for a heavy rapid transit system. Although the works of Grava and the Japanese are based on careful analysis and studies and created by respected institutions; time but most importantly financial constraints kept these proposed rail lines imprisoned in planning blueprints.





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Instead of the costly rail-based transportation, documents and reports from academic institutions (University of the Philippines & Ateneo de Manila University), World Bank, and government funded studies leaned towards developing roads and highways, while downplaying the importance of rail transport to the country. The studies made by UP and Ateneo suggest that decentralization, together with construction and road widening projects are cost-effective solutions to remedy the emerging traffic congestion. Likewise, the World Bank funded TPP and MMETROPLAN, criticized the heavy rail transit proposals of UTSMMA, and just like UP, and Ateneo suggested the construction of more roads and highways.

With the help of maps, one can conclude that the rail proposals made by either by Grava, UTSMMA, or JICA is non-existent in today's Metropolitan Manila. While the road network proposals suggested by the TPP and MMETROPLAN can now be completely seen as part of the overall road network of Metro Manila which shows the primacy given to roads.





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