

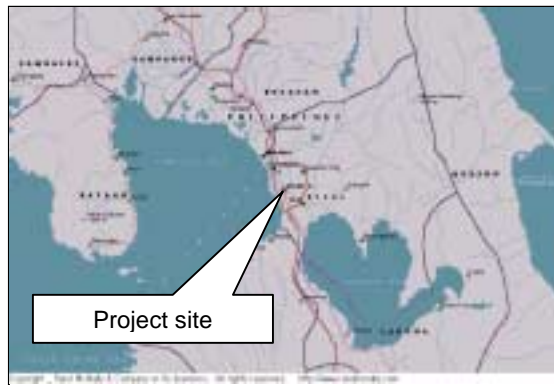
Philippines

Metro Manila Urban Transportation Project

Report date: March 2001

Field survey: September 2000

1. Project Profile and Japan's ODA Loan



Site Map: Metropolitan Manila in the Republic of the Philippines



Mindanao Avenue

1.1. Background

Metro Manila, which is the center of political and economic activities in the Philippines, is chiefly dependent on roads for transportation due to its underdeveloped railway network. Under these circumstances, the traffic volume for the majority of main roads has exceeded its capacity, making roads seriously congested. One of the reasons for traffic congestion is that main roads are poorly interconnected and that comprehensive road services are not provided in the area. Under the Metro Manila Urban Transportation Strategy Planning Project finalized in 1986 (with financial support from the World Bank), a medium-term investment plan was established to ensure the systematic and efficient flow of traffic in the metropolitan area by developing and improving supplementary trunk roads and main trunk roads. Based on the investment plan, under the Metro Manila Urban Transportation Project (MMUTP) construction, extension, widening and resurfacing plans were developed for eight main trunk roads and ten supplementary trunk roads.

1.2. Objectives

The objectives of the present project were to improve the three main trunk roads and seven supplementary trunk roads (total length: 47 km), which form part of metropolitan Manila's network of circumferential and radial roads, with the aim of making the road network more efficient, eliminating chronic traffic congestion and improving the overall transport environment. The project did not cover the five main trunk roads and three supplementary trunk roads, included in the MMUTP, which were handled by the World Bank.

1.3. Project Scope

The project involved the improvement of a total of 47 km of trunk roads, which consisted mainly of circumferential and radial roads in the Metro Manila. Japan's ODA loan covered the entire foreign currency portion of the project and part of the local currency portion.

1.4. Borrower/Executing Agency

The Government of the Republic of the Philippines/The Department of Public Works and Highways (DPWH)

1.5. Outline of Loan Agreement

| | |
|-----------------------------------|--|
| Loan amount/Loan disbursed amount | ¥4,776 million/¥3,296 million |
| Exchange of notes/Loan agreement | December 1988/May 1989 |
| Terms and conditions | Interest Rate: 2.7%, Repayment Period (Grace Period): 30 years (10 years), General Untied Ppartially Untied for Consulting Services) |
| Final disbursement date | September 1998 |

2. Results and Evaluation

2.1. Relevance

The objectives of the project corresponded with those of the major trunk road improvement project being implemented by the Philippine government since the second half of the 1970s. In addition, the project aimed to support part of the plan being executed by the World Bank to achieve the objectives of the government's project, and therefore, its relevance can be recognized.

A look at passenger movement in the Philippines indicates that even today, road transport accounts for approximately 89% of passenger movement (based on figures for 2000), which demonstrates that road transport remains a highly important mode of transport. Furthermore, the country's Medium-term Development Plan (1999-2004) cites reduction of traffic congestion on the main roads in the metropolitan area as one of its future goals, thus the project continues to be relevant.

2.2. Efficiency

Initially, right-of-way (ROW) problems were not solved for four of the ten project roads (refer to "Comparison of Original and Actual Results" in this report for specifications), thus these four roads were excluded from the project and several new roads were added. For these and other reasons, the implementation period, originally scheduled to last for four years and seven months, was extended to nine years and three months.

The actual project cost under ran initial estimates due to the reduction in the total length of project roads by more than 10 km and other factors. As compared to plans developed at the time of appraisal, four sections of road (approximately 38% of the total length) were eventually cancelled due to ROW problems. The executing agency was the Urban Road Projects Office (URPO) of DPWH. URPO has abundant experience not only in Japan’s ODA loan projects but also in those financed by the World Bank, Asian Development Bank (ADB) and other aid organizations.

2.3. Effectiveness

(2.3.1.) Changes in Traffic Volume

The traffic volumes for the project roads are as shown below. In comparison, actual results significantly exceeded demand predictions, particularly for the South Package road. Furthermore, a separately conducted impact study (Comprehensive Impact Assessment of Metropolitan Manila)¹ revealed that the traffic volumes for the roads related to the present project increased sharply as compared to the pre-project period (1987). During the 1990s, the number of vehicles registered in the Metropolitan Manila almost doubled, and motorization progressed rapidly. The project responded to such increases in traffic volume appropriately.

Table 1 Traffic Volumes for the Project Roads (Vehicles/Day)

| Classification | | 1996 | 1997 | 1998 | 1999 |
|------------------|--------------------|---------|---------|---------|---------|
| Southern Package | Demand predictions | 50,111 | 53,474 | 57,069 | 60,913 |
| | Actual results | 45,458 | 48,482 | 75,675 | 79,365 |
| Northern Package | Demand predictions | 99,341 | 106,081 | 113,289 | 120,997 |
| | Actual results | 104,373 | 111,477 | 221,760 | 230,935 |

(Note) The actual results figures for 1998 and 1999 were obtained from DPWH during the field survey. Other figures were procured from DPWH data.

Southern Package: MSE West Service Road, West Rembo

Nothern Package: Old Sta. Mesa, P. Tuazon Road, Visaya Avenue, Mindanao Avenue, Congressional Avenue

(2.3.2.) Reduction in Traffic Congestion

The impact study mentioned above, included a survey of road user awareness. The results of interviews (178 persons for the project) indicated that some 60% of respondents believed that travel times had been reduced. Nearly half of respondents stated that the flow of traffic had improved.

In addition, the impact study calculated the volume capacity ratio (V/C ratio²) for the case in which the project was implemented and that in which it was not. A look at

¹ “Impact Study on JBIC’s Transportation Projects in Metro Manila“ January 2001.

² The V/C ratio is an indicator of the degree of congestion on a road. It is expressed as the ratio of traffic volume for a road to its capacity. A V/C ratio of 1.0 means that the traffic volume for a road is equal to its capacity. A higher V/C ratio represents a higher level of congestion.

the area affected by the project indicates that the V/C ratio was 1.41 for the case in which the project was implemented and 1.52 for the case in which it was not, demonstrating that roads are less congested for the case in which the project was implemented.

(2.3.3.) Economic Internal Rate of Return (EIRR)

In the impact study, the EIRR was recalculated based on the preconditions specified below. The result was 31%.

- Benefits: Reductions in travel cost and time
- Cost: Investment costs + maintenance costs (3% of investment costs)
- Project life: 20 years

2.4. Impact

(2.4.1.) Improvement of Urban Road Transport Functions

The results of the road user interview survey indicated that the percentage who replied that overall accessibility (ease with which they can move from one point to another) had improved was low. However, about 50% of respondents stated that traffic conditions (order of traffic flow (whether traffic flow is favorable)) had improved.

With respect to the number of traffic accidents, approximately 60% of interviewees replied that the number had decreased in project-related areas. No data analysis could be conducted from this viewpoint, however, because it was difficult to identify road data related to the project.

These results show that nearly half of road users had the impression that the project had made certain contributions to the improvement of road transport functions, and it is therefore considered that the project contributed to the improvement of the overall traffic conditions.

(2.4.2.) Environmental Impact

The impact study simulated the possible different effects of the project on air pollution in 2015 for the case in which the project was implemented and that in which it was not implemented. The results indicated that figures were lower for all simulation items (carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides and suspended particulate matter), for the case in which the project was implemented.

Meanwhile, approximately 80% of those interviewed in the survey of road users replied that air pollution was worse than before. Moreover, 60% of respondents stated that noise levels were higher than before.

Given the remarkable increase in traffic volume on the project roads in recent years, it would be difficult for road users to have the impression that such conditions had

improved. This is shown in the results of interviews. The results of the simulation, however, indicated that, as compared to the case in which the project was not implemented, the project helped ease the flow of traffic, thus reducing the per unit volume of exhaust gas, which varies according to speed. This reduced exhaust gas emissions, which has put a halt to future progression of air pollution.

The project included a road user interview survey covering road drainage. As compared to other projects covered by the impact study, the percentage of interviewees who replied that the present project had improved the drainage of roads was largest, at approximately 50%. This shows that from an environmental viewpoint, the project was effective in improving the drainage of roads.

(2.4.3.) Revitalization of Economy in the Areas along the Roads

Approximately 50% of respondents in the interviews with road users stated that the project had had positive effects on employment and that it had provided access to new livelihoods. Some 40% replied that the project had facilitated the transport of merchandise while about 40% replied that the project had contributed to a higher quality of life. Some 40% answered that the project had generated a spurt in business activities.

The results described above suggest that the project has also made certain contributions to the revitalization of the economy in the project area.

2.5. Sustainability

(2.5.1.) Organization and Management

The Bureau of Maintenance (BOM) is responsible for work related to planning and budgeting for maintenance, and the National Capital Region (NCR) is engaged in work related to actual maintenance. In addition, NCR has seven district offices and the respective offices responsible for the present project conduct maintenance work in the project area.

Maintenance work consists of two parts: the portion that is contracted out to private businesses (maintenance by contract or MBC) and that which is performed by NCR itself (maintenance by administration or MBA). Previously, 50% of the routine maintenance covered by total operation and maintenance budgets was contracted out to private businesses but this has increased to 70% in recent years. Currently, the remaining 30% of the budget is used for work performed by the district offices under the control of NCR. The goal is to raise the percentage of MBC to 85% in the future. Raising the percentage of road maintenance consigned to the private sector will promote privatization, which is favorably evaluated. For the remaining MBA portion, several engineers are earmarked for each district office and budgets for contracted workers are allocated based on work plans. There are no serious problems with personnel shortages in this area.

The development and implementation of detailed maintenance plans is entrusted to each district office. How the head office of the DPWH checks and monitors the maintenance conducted by each district office is important for ensuring quality at the local level, and it is necessary to strengthen this system of checking and monitoring. When the field study was conducted, the head office of the DPWH did not have systemized data on the status of maintenance performed by each district office. The condition of roads and bridges, however, is inspected by the BOM at the head office of the DPWH, and such inspections, which were conducted semiannually in the past, are currently being done quarterly. Table 2 shows the condition of roads and bridges for the past five years.

Table 2 Condition of NCR-controlled Roads and Bridges

| Year | 1996 | 1997 | 1998 | 1999 | 2000 |
|------|-------|-------|-------|-------|-------|
| Good | 66.1% | 69.2% | 48.3% | 56.5% | 77.0% |
| Fair | 26.2% | 26.8% | 45.4% | 36.3% | 16.5% |
| Poor | 0.8% | 1.2% | 3.8% | 1.5% | 0.4% |

Source: DPWH BOM materials. The figures for each year represent values that were obtained from the last inspection conducted in the year.

Note: The definitions of “good,” “fair” and “poor” are based on the standards specified below.

1996/97: Guidelines included in Department Order No. 76, August 30, 1988

1998/99: Guidelines included in Department Order No. 179, August 22, 1997

2000: Administrative sanctions included in Department Order No. 31, s, 2000

The reason the total of figures for the year does not equal 100% is that some roads, including those that were being rehabilitated, were not rated.

During the period from 1998 to 1999, the percentage of “good” roads and bridges decreased and that of “fair” ones increased, but in 2000, that of “good” ones again increased. At present, if the percentage of “fair” roads and bridges is not maintained under 15%, and that of “poor” roads under 5%, the DPWH issues a warning to the district office involved through the director of the NCR. With the support of the World Bank, databases of roads and bridges are being constructed³, updated and centrally controlled, indicating that efforts to improve the system are gradually being advanced.

(2.5.2.) Budget

The changes in NCR maintenance costs (for ordinary maintenance) for the period from 1996 to 2000 are as shown in Table 3. These costs are calculated by multiplying one unit of EMK(Equivalent Maintenance Kilometerage)⁴ for roads and

³ Examples include the Road Information and Management Support System (RIMSS) initiated in April 1997 as part of the World Bank’s Technical Assistance program. RIMSS II started in July 2000.

⁴ This is an index for calculating costs, which is determined by the type of surface, road width and traffic volumes.

bridges by basic unit prices (annual price hikes and other determinants are factored into calculations). Although the budgets decreased in 1997 and 1998, the amount was again increased in 2000.

Table 3 Actual NCR Maintenance Costs

Unit: million pesos

| Year | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|-------------------|-------|-------|-------|-------|-------|-------|
| Maintenance costs | 157.8 | 162.7 | 171.7 | 149.8 | 164.7 | 179.9 |

Source: DPWH NCR materials

The operation and maintenance costs listed above are largely financed from within the initially planned annual budgets, and it seems that in recent years, there have been no problems, such as major delays in this aspect of budget execution.

It is considered, however, that the NCR cannot afford to respond to unforeseen road repair needs with the currently allocated budgets alone. Although a certain amount of emergency budgets for disasters and other events has been secured in the form of the Calamity Fund, it would not necessarily be enough if a large-scale disaster were to occur, and there is some concern about this situation in the Philippines, a country that is geographically prone to be hit by typhoons.

Against a background of limited budgets, there is a tendency for projects like the present project, which have been recently completed, to be given low priority in budgetary allocation. The visual inspection of the project roads indicated that they were in good or fair condition and that there were no major problems requiring special mention. If the current system of budgetary allocation remains unchanged, it is uncertain whether swift measures can be taken if large-scale repair work needs to be performed in the future. It is hoped that the overall situation will be improved by, for example, using the new World Bank-funded system mentioned above for early identification of problems and the implementation of countermeasures.

Comparison of Original and Actual Results

| Item | Plan | Results |
|--|--|---|
| <p>1. Project Scope</p> <ul style="list-style-type: none"> · Improvement of main trunk roads · Improvement of supplementary trunk roads · Consulting services | <p>Total length of project roads: 46.97 km</p> <ol style="list-style-type: none"> 1. Mindanao Avenue (8.2 km) Construction of a new four-lane road and resurfacing of part of the avenue 2. Radial Road No. 10 (6.2 km) Widening of the existing two to four-lane road to a four to eight-lane one 3. Southern part of the C-3 (9.2 km) Construction of a new six-lane road (northern part will be covered by the 13th ODA loan package) 1. Access road behind LRT (0.7 km) Improvement for a two-lane road with parking lanes 2. P. Tuazon Boulevard (2.4 km) Widening of the existing two-lane road to a four-lane one, and replacement of old surface with new one 3. Zobel Roxas Avenue/Onyx Avenue (1.6 km) Construction of a new two-lane road 4. West Rembo Road (4.1 km) Overlaying of asphalt surfacing 5. Old Santa Mesa Road (1.0 km) Resurfacing of the existing road 6. Side roads for the Manila South Superhighway (9.4 km) Resurfacing of the existing road 7. Congressional Avenue (3.94 km) Resurfacing of the existing road, and construction of a new four-lane road for part of the avenue <ul style="list-style-type: none"> · Detailed design · Environmental assessment · Supervision of construction <p>Total: 583 M/M (including 156 M/M for foreign consultants)</p> | <p>32.536 km (for the 3.185-km portion for Stage II-C, construction has not yet started due to ROW problems)</p> <p>Excluded due to ROW problems</p> <p>Excluded due to ROW problems</p> <p>Excluded due to ROW problems</p> <p>Same as left</p> <p>Excluded due to ROW problems</p> <p>3.952 km</p> <p>Same as left (1.053 km)</p> <p>8.914 km</p> <p>4.713 km</p> <p>The roads listed below were added to the project roads:</p> <ul style="list-style-type: none"> · Visayas Avenue widened (1.492 km) · Mindanao Avenue widened (5.099 km) · Intersection of E. Rodriguez, Jr. Avenue, Pasig Boulevard and J.P. Rizal Avenue (Vargas flyover) (0.774 km) · Yabutand Pateros bridge (construction has not yet started) <p>Same as left</p> <p>Total: 865.6 M/M (including 257.5 M/M for foreign consultants)</p> |
| 2. Implementation schedule | May 1989 to November 1993 (55 months) | June 1989 to August 1998 (111 months) |
| 3. Project cost | | (Note) |
| Foreign currency | ¥3.343 billion | ¥3,258 million |
| Local currency | 716 million pesos | 980 million pesos |
| Total | ¥7.855 billion | ¥7,217 million |
| ODA loan portion | ¥4.776 billion | ¥3,296 million |
| Exchange rate | PHP1.00 = ¥6.30 | PHP1.00 = ¥4.00 |

(Note) DPWH materials prepared in November 1998