【Ex-Post Monitoring of Completed ODA Loan Project】

Indonesia

"Surabaya Urban Development Project (1)"

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Field Survey: March- April 2012

1. Project Description

Map of the Project Area

Margomulyo Road

1.1 Project Objective

The project was to develop urban road, drainage, solid waste and water supply sub-sectors in the city of Surabaya in order to improve living environment, and thereby activate the regional economy and improve the welfare of local citizen.

1.2 Outline of the Loan Agreement

Loan Amount/ Disbursed Amount	11,251 million yen/10,893 million yen
Loan Agreement Signing Date/ Final Disbursement Date	February 1993/March 2004
Ex-post Evaluation	FY 2006
Executing Agency	DG. Cipta Karya, The Ministry of Public Works
Main Contractors	PT. Hutama Karya (Indonesia)/PT. Pembangunan Perumahan (Indonesia)/CV. Lanang Adhi Daya (Indonesia)/PT. Waskita Karya (Indonesia)
Main Consultants	Pacific Consultants International (Japan), IDEA Consultants (Japan), PT. Kartika Pradiptaprisma (Indonesia)

1.3 Background of Ex-post Monitoring

With an area of 332 km^2 and a population of about 2.76 million people (as of Year 2010), the City of Surabaya, the capital of the East Java Province, is the second largest city of Indonesia. Like other cities in Indonesia, Surabaya was not sufficiently equipped with necessary urban infrastructure. Aptly realizing those unfavorable circumstances and need for infrastructure development to provide the citizens with better living environment, the government of Indonesia was promoting a plan for improving the urban environment of the Surabaya metropolitan area in which the city of Surabaya occupies the center. The Ministry of Public Works decided to implement a part of a plan through ODA yen loan.

Ex-post evaluation conducted in March 2007 recognized high effectiveness in countermeasures for traffic volume increase, control of flood damage, improved garbage collection ability and increased water connection through expected appearance of results of this project. However, the project period was extended by complex factors brought about by the economic disturbance and high inflation from Asian Economic Crisis in 1997, the collapse of the Soeharto regime and consequent large-scale and frequent administrative changes at the central level as well as the regional levels. Finally, some components (Road: Kenjeran 1B and EMRR (Eastern Middle Ring Road) 2A (completed in April 2007), Water Supply: Pipe connection to East Side Ring Main have not been completed at the time of ex-post evaluation and a component (Water Supply: Wonocolo Pump Station) was not operational after completion and efficiency was evaluated as low. As some problems have been observed in terms of uncertainty of responsibility following the transfer of operation and maintenance control to a new system, sustainability of this project was judged as moderate. In light of the above, this project was totally evaluated to be moderately satisfactory. Furthermore, it was recommended to follow government regulations regarding land acquisition, to clarify management of operation and maintenance, to complete unfinished work early and to officially record flood damage.

Consequently, therefore, this project was selected for ex-post monitoring and reviewed under each criterion with the findings from the field survey and other research activities with a final conclusion being drawn.

2. Outline of Survey

2.1 Survey Schedule

Monitoring Period: January 2012- October 2012

Field Survey Period: March 21 - April 6, 2012

2.2 Constraints of Monitoring

The executing agency, DG. Cipta Karya (Directorate General of Human Settlement) of the Ministry of Public Works, did not setup monitoring and evaluation and did not have information and evaluation on the current situation of the project. At the time of appraisal, the Directorate

was assigned as the Executing Agency, and General Directorate of Roads and General Directorate of Water Resources were responsible to process procurement for the portion of urban roads and drainage under the national government. In addition, Surabaya City became substantive Principal Implementing Agency responsible for procurement and coordination for the subprojects under the city government. Thus, the monitoring mission requires visiting the City Planning Bureau (BAPPEKO, the former coordinating agency) and organizations, inclusive of national braches and local organizations, of four sectors and was limited in the efficiency of the survey. Consequently, a single responsible executing agency did not exist for the project as a whole.

3. Monitoring Results

3.1 Effectiveness

3.1.1 Quantitative Effects

3.1.1.1 Indicators of Operations and Effects

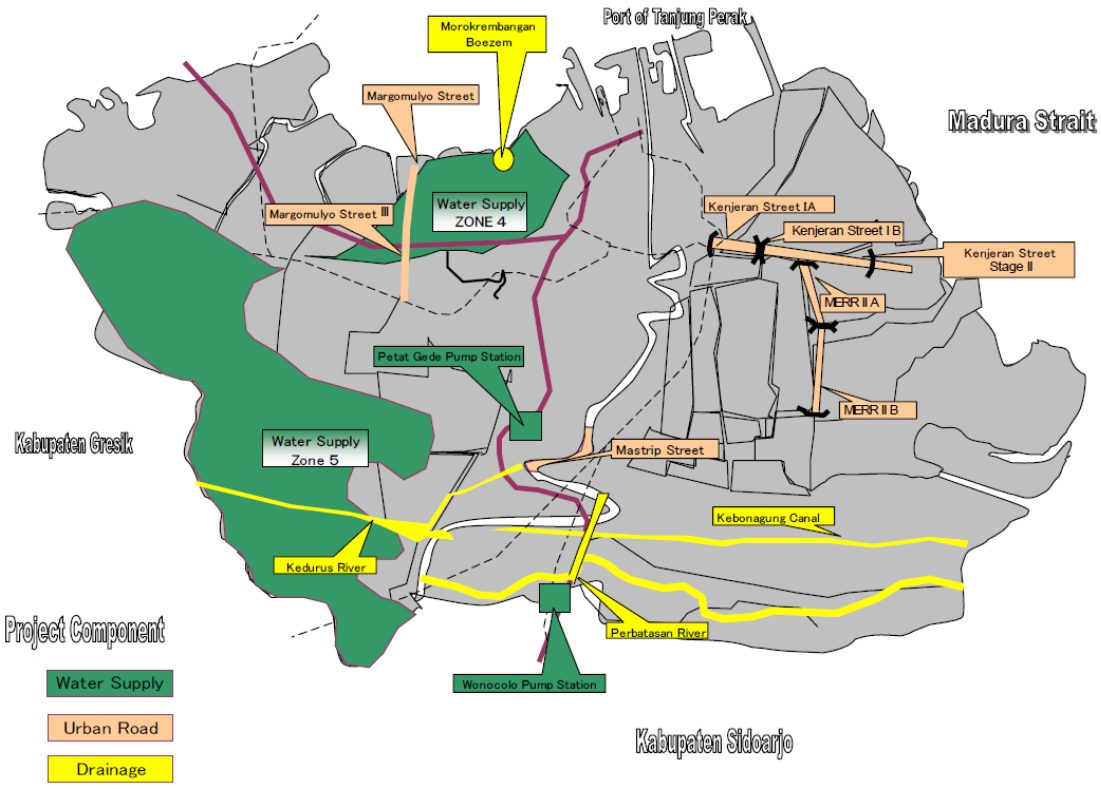
(1) Urban Roads

(a) Project Components

The project constructed the following six components on the four roads (See Figure 1. *The components in italic* show the unfinished parts at the time of ex-post evaluation)

1. Improvement of Kenjeran Road Stage 1, *1B* & 2 (7,590 m)
2. Improvement of Margomulyo Road Second Carriageway (1,700 m)
3. Improvement of Margomulyo Road Additional Work (200 m)
4. Improvement of Margomulyo Road 3 (3,254 m)
5. Construction of Eastern Middle Ring Road (EMRR) Stage *2A* & 2B (5,100 m)
6. Improvement of Mastrip Road 1 (3,209 m)

The total length is 5,100 m of new construction and 15,843 m of improvement (excluding unfinished section of Kenjeran 1B, 1,810 m)



Source: Ex-post Evaluation.

Figure 1 Location of Major Facilities under the Project

(b) In-service Situation

The following sections, which were not completed at the time of ex-post evaluation, have been completed and already been in service.

—Kenjeran Road Stage 1B was completed in 2010 and all sections have been in service.

—EMRR 2A section was completed in April 2007 and all sections came into service in 2009.

(c) Traffic Volume

Right Figure shows traffic volume on Mastrip and Margomulyo Roads. Mastrip Road can be compared with similar indicators of ex-post evaluation.

The volume in 2011 is more than ten times
average daily traffic) and they are utilized sufficie
There are no official traffic volume counts on Kenjeran Road and EMRR.

(2) Drainage

(a) Project Components

The project constructed the following four components (See Figure 1).

1. Improvement of Perbatasan River (channel improvement: 14.3 km)

2. Improvement of Kebonagung Canal (channel improvement: 6.0 km, excavation of channel bed: 6.4 km)

3. Morokrembangan Boezem Improvement (total area of pond: 80.7 ha)

4. Remaining critical works of Kedurus River Improvement (Kedurus River channel improvement: 2.7 km and Kebonagung Canal and replacement of structures)

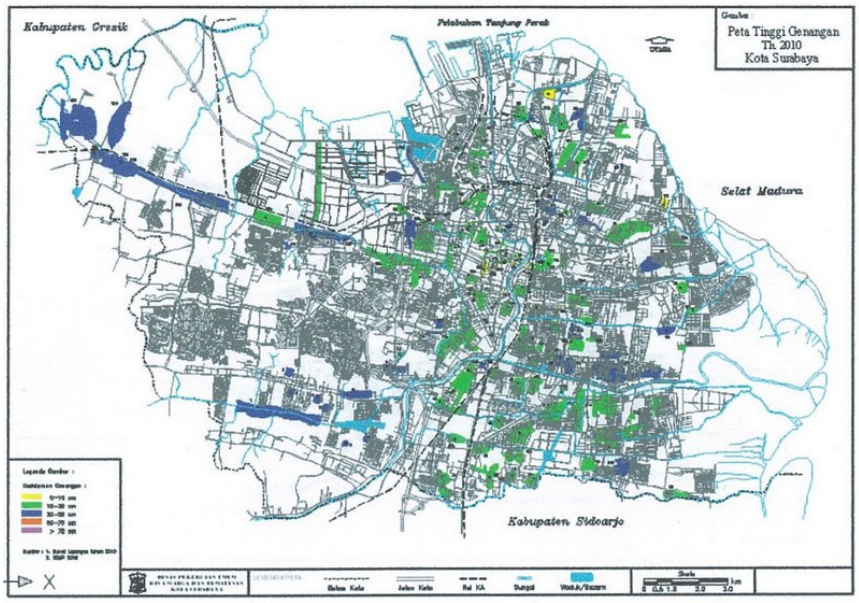
Total length of canal improvement was 29.4 km and total area of pond improvement was 80.7 ha.

(b) Occurrence of Flooding

Surabaya River has not experienced flooding since 2007. On the other hand, some areas have problems with inundation after rain (Figure 3). Because the drainage components of this project had the purpose to divert the upper flow of Surabaya River to the right bank, the components have performed with sufficient effectiveness against river overflow.

(c) Flooding Record

Public Works Department of the City has been keeping record of the flooding and inundation damage (Figure 3) since 2007. The recommendation by ex-post evaluation to keep a flood damage record was implemented.



Source: Public Works Department

Figure 3 Record of Flood Damage (2010)

(3) Solid Waste

(a) Project Components

The project procured equipment such as trucks and conducted civil work projects such as rehabilitation and construction of depot facilities. Table 1 shows the numbers of procured equipment and civil work projects and their current conditions.

Table 1 Procurement Numbers and Operational Condition

Item		Procured year	Count	Operational Number		
				2004 JICA Document	2007 Ex-post Evaluation	2012 Ex-post Monitoring
Equipment	Truck	1994-95	43	43	42	38
	Handcart	1994-96	280	0		
	Container	1994-96	219	0		
	Bulldozer	1994-95	2	In preparation 1 Disorder 1		1
	Excavator	1994	1	1		1
Civil Work Project	Construction of Solid Waste Depots	1994-95	9	9		9
	Construction of Temporary Disposal Sites	1994-95	19	19		19
	Rehabilitation of Solid Waste Depots	1994-95	31	31		31
	Rehabilitation of Temporary Disposal Sites	1994-95	44	44		44

Source: JICA Internal Document, Ex-Post Evaluation and City Department of Gardening and Cleaning.

(b) Operational Condition

Many trucks are currently operational (Table 1). According to City Department of Gardening and Cleaning, Surabaya City collected 271 thousand tons of solid waste in the City in 2010 and almost two thirds of it is collected by the trucks procured by the project. The procured trucks and constructed facilities are currently in use. Although the number of trucks decreased from the time of ex-post evaluation, the number of depots and temporary disposal sites did not change. Therefore, the project demonstrated effectiveness mostly at the same level as the ex-post evaluation.

(4) Water Supply

(a) Project Components

The project implemented the following eight components and location of major components is shown in Figure 1.

1. Transmission/primary/secondary water supply and distribution pipelines

(1) Wonocolo – Putat Gede

(2) Putat Gede – Demak

(3) Banyu Urip – Tandes

2. Secondary distribution (steel pipe) – Zones 4 + 5 (Total 415 km)

3. Pipe materials for reservoir sites

4. Tertiary distribution mains – Zones 4 + 5

5. House connections – Zones 4 + 5

6. Wonocolo Pump Station (not operational at the time of ex-post evaluation)

7. Putat Gede Distribution Facilities Installations

8. Takeover of the uncompleted IBRD portion

(1) Pipe installation connecting Wonocolo Pump Station to existing East Side Ring Main (ESRM) (uncompleted at the time of ex-post evaluation)

(2) Connection of missing portion of ESRM near Galaxy Mall toward Kenjeran Road

(3) Connection of missing portion of ESRM, Wadung Asli - Rungkut

(b) Current Situation of Uncompleted and Nonoperational Facilities

Through the completion of Karangpirang 3 Water Treatment Plant (not included in the project), Wonocolo Pumping Station, which was not operational at the time of ex-post evaluation, has been operational since 2009. Pipe installation connecting to existing ESRM has been completed and is operational.

(c) Realized Water Supply Capacity and Facilities

Table 2 shows the realized water supply and distribution capacity and facilities.

Table 2 Realized Water Supply Capacity and Facilities

	Unit	By this Project	Total (2011)	Portion of this Project
(1) Reservoir Capacity	m^3	13,000		
(2) Working Pump Capacity	Litter/sec	5,600		
(3) Stand-by Pump Capacity	Litter/sec	1,550		
(4) Primary Mains	m	31,955	137,700	23%
(5) Secondary Mains	m	68,070	622,500	11%
(6) Tertiary Mains	m	226,688	4,503,850	5%
(7) New House Connection	Household	60,000	397,040	15%

Source: Surabaya Regional Drinking Water Company (PDAM).
Note: New house connection is in 2010.

The project completed new pump station and primary to tertiary mains. This resulted in the 23% of total length of primary main and 11% of secondary mains in 2011.

(d) Number of Users and Water Usage Volume

Table 3 shows the number of water connection contracts and consumed volume. The number of contracts and volume increased significantly in the late 2000. Monthly water consumption per household is around 30 m^3 and does not change significantly.

Table 3 Water Connections and Consumed Volume

Year	1990	1995	2000	2005	2010
Household	116,251	175,863	248,491	312,297	397,040
Business	12,710	15,023	17,825	24,903	29,769
Industry	1,055	795	808	869	872
Social Activity	3,493	5,386	6,003	5,972	5,132
Governmental	1,716	898	948	1,131	1,201
Retail/ Tanker				--	--
Harbour	2	3	4	4	4
Off City	44	46	42	--	--
Losses				--	--
Total	135,271	198,014	274,121	345,176	434,018

Unit: 1,000m^3/yr

Year	1990	1995	2000	2005	2010
Household	42,507	64,720	83,103	110,961	132,145
Business	8,005	11,085	10,434	14,672	17,305
Industry	4,205	4,562	4,728	4,846	6,057
Social Activity	5,253	15,360	18,019	16,637	15,674
Governmental	9,368	5,209	7,585	6,197	6,270
Retail/ Tanker	303	480	112	105	11
Harbour	216	389	622	548	397
Off City	5,667	1,230	6,809		
Losses	48,924	50,096	79,862	92,762	89,793
Total	124,448	153,131	211,274	246,728	267,652

Monthly usage per household m^3	30	31	28	30	28

Source: PDAM.

Table 4 shows the industrial connections in Western Surabaya, where the project supplied water in Zone 4 and Zone 5, and Table 5 shows the household connections in the area.

Table 4 Industrial Connections in Western Surabaya (Zone 4 and 5)

Customer Category		Number of Customers		
Tariff Code	Category	1998	2005	2011
32a &32c	Small Enterprise	4,516	4,692	6,113
33	Small Industry		157	136
43	Large Enterprise		6,310	10,723
44	Large Industry		44	120
	Total	4,516	11,203	17,092

Source: PDAM.

In the water supply area of this project, the total number of industrial connections increased. The total number in 2011 increased by 53% from 2005 when the ex-post evaluation occurred. It can be said that this project contributed to the promotion of industrial location by corresponding to the water demand in the target area through the increase of water supply capacity.

Table 5 Household Connections in Western Surabaya (Zone 4 and 5)

Customer Category		Number of Customers		
Tariff Code	Category	1998	2005	2011
2a.2	Basic Household	2,884	62,533	2,715
3a	Modest Household	3,308	47,020	88,635
4a	Medium Household	80	23,802	55,710
4b.s	Large Household	138	14,565	38,818
3c.2	Luxury Household			8,079
	Total	6,410	147,920	185,873

Source: PDAM

Compared to 2005, the household connections in 2011 increased by 26% in number, and by 13% in volume.

Therefore, it can be said the water supply capacity development through this project contributed to improved sanitary conditions and urban development by corresponding to water demand of existing non-users and new residents.

3.1.1.2 Internal Rates of Return (IRR)

Although the ex-post evaluation did not calculate Internal Rate of Return (IRR), JICA internal documents partially did. Therefore, this paper re-calculated IRRs based on a similar method to the document and Table 6 shows the results.

EIRR and FIRR in the table mean the economic internal rate of return and the financial internal rate of return, respectively.

Table 6 Comparison of IRRs

Sector	Target of IRR	On Project Completion (2004)	Ex-post Monitoring (2012)	Major reason for difference
Drainage	Perbatasan River (EIRR)	16.1%	16.0%	The benefit by river improvement slightly decreased due to the minor population decrease in the target area.
	Kebonagung Canal (EIRR)	7.4%	7.3%	
	Morokrembangan Pond (EIRR)	16.7%	17.0%	The rate slightly increased due to minor increase of target population.
Solid Waste	Total solid waste (FIRR)	11.53%	3.4%	The rate decreased due to decrease of trucks and was unable to collect waste as expected.
Water Supply	Total water supply (FIRR)	8.2%	13.6%	On project completion, water consumption was assumed to be constant after completion. In fact, the water consumption increased.

Source: JICA internal document and this monitoring survey.

3.1.2 Qualitative Effect

Because the ex-post evaluation did not measure qualitative effects, this Monitoring Survey does not compare these.

Due to the above factors, the four infrastructure sectors of Surabaya City improved on the identified problems, such as uncompleted sections and non-operational facilities, made by ex-post evaluation. The uncompleted sections have been finished and are in service and the non-operational facilities started functioning after completion of facilities in a previous stage.

Furthermore, urban road users and water users are increasing and the effects of this project are more apparent compared to the time of ex-post evaluation.

3.2 Impact

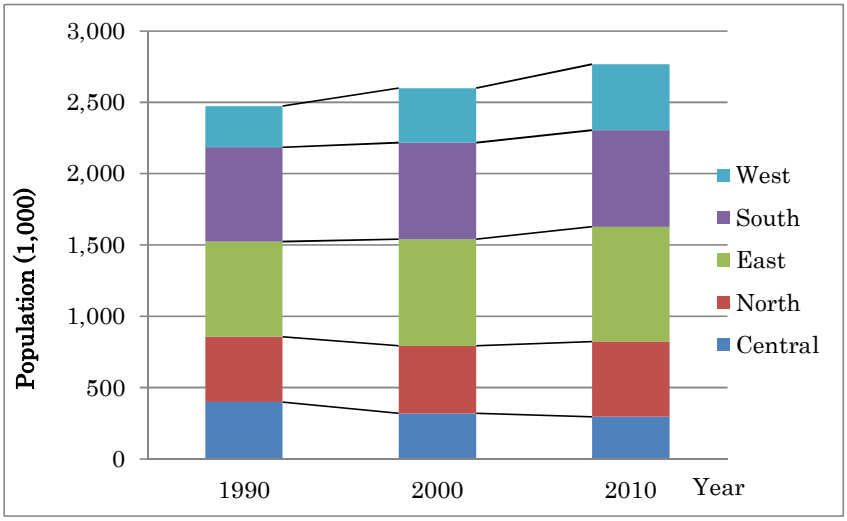
3.2.1 Intended Impact

3.2.1.1 Population Increase

By improvement and supply of various infrastructures, the total population of the city increased. Especially, its population increased in the West Ward, where the project improved water supply (Table 7 and Figure 4).

Table 7 Population Transition in Surabaya City

Ward	Area (sq.km)	Population (person)			Population Growth Rate (Annual %)	
		1990	2000	2010	1990-2000	2000-2010
Central	14.79	399,036	320,233	295,938	-2.2%	-0.8%
North	38.39	458,501	473,562	528,168	0.3%	1.1%
East	91.18	665,756	745,807	803,204	1.1%	0.7%
South	64.06	660,780	676,878	677,944	0.2%	0.0%
West	124.21	289,199	383,318	460,233	2.9%	1.8%
Total	332.63	2,473,272	2,599,798	2,765,487	0.5%	0.6%



Source: Surabaya in Figures 2011 and others.

Figure 4 Population Transition in Surabaya City

3.2.1.2 Activation of Economic Performance

In addition to the above population increase, Gross Regional Domestic Product (GRDP) in Surabaya increased by annual growth rates of 5% to 7% (Table 8). The economy of Surabaya has been growing steadily since 2000.

Table 8 Gross Regional Domestic Product of Surabaya City

Year	GRDP (Rp million)	GRDP/Capita (Rp thousand)	GRDP Annual Growth	GRDP/Capita Annual Growth
2000	50,301,846	20,574		
2006	68,817,057	25,659	5.4%	3.7%
2007	73,160,032	27,070	6.3%	5.5%
2008	77,717,874	28,537	6.2%	5.4%
2009	82,014,714	29,885	5.5%	4.7%
2010	87,828,842	31,759	7.1%	6.3%

Source: Surabaya in Figures 2011.

Note: 2000 Constant Price.

3.2.2 Other Impacts

3.2.2.1 Impact on Natural Environment

No specific impact has been identified.

3.2.2.2 Resettlement and Land Acquisition

UnevenNot smooth land acquisition of 109ha, which was required by three sectors except solid waste, delayed the implementation of the project and resulted in the low efficiency. Especially, the ex-post evaluation identified the prolonged negotiation process by Surabaya City because of ambiguity of the rights of residents who refuse eviction (Kenjeran Road) and calculation of the compensation amount including third-party (water supply facility). Later, according to BAPPEKO, Surabaya City became more careful in land acquisition for public works, such as interaction based on clear rules, frequent briefings for residents, and enhancement of the compensation system.

Based on the above factors, the project had impact on activation of urban economy in Surabaya City through economic infrastructure development, such as water and road, and improvement of urban environment.

3.3 Sustainability

3.3.1 Structural Aspect of Operation and Maintenance

During project implementation, the executing agency, DG. Cipta Karya, worked as an integrated supervisor over the multiple sectors, and it has not been involved in the project since completion. Then the agency had no information at the time of ex-post evaluation and ex-post monitoring. The agency is also not involved in operation and maintenance and the responsible organization is different for each infrastructure.

3.3.1.1 Urban Roads

The roads in Indonesia are classified into national, provincial and city roads by the functions of arterial, collector-distributor and city roads, respectively.

At the Feedback Seminar held at the time of ex-post evaluation in 2007, participants agreed that the Margomulyo and Mastrip Roads belonged to East Java Province and Kenjeran Road did to Surabaya City. In addition, although the participants did not explicitly confirm, they agreed that the EMRR belonged to national roads. Later, the Ministry of Public Works Decree Number 365 in 2009 decided the road administration as follows:

-Mastrip: Provincial Road

-Kenjeran, Margomulyo, and EMRR: National Roads

Although the agreement of Feedback Seminar was held for Mastrip and EMRR, Kenjeran and

Margomulyo changed to national roads. However, this is the decision of administrators and the operation and maintenance of each road category are set as follows in principal.

Table 10 Responsible Organization for Road Maintenance

Classification		National	Provincial	City
Administrator		Ministry	Province	City
Operation and Maintenance (Example)	Cleaning/Street Light/Gardening	City Dept. of Gardening and Cleaning		
	Emergency Repair (Emergency, Pothole)	City Dept. of Roads and Bridges		
	Routine Repair (Patch, Pothole)	Road Executing Agency	Provincial Public Works Dept.	City Public Works Dept.
	Heavy Maintenance (Overlay, Expansion)			

Source: Monitoring Survey.

Under the Ministry of Public Works, the Road Executing Agency Area 5 (*Balai Besar Palaksanaan Jalan* Area 5) is conducting routine maintenance of national roads with the city.

Road and Bridge Maintenance Division, Road and Bridge Department of City holds 20 staff and 50 workers, inclusive of outsourcing, are regularly engaged in road maintenance operation.

3.3.1.2 Drainage

Brantas River Basin Management Office (*Balai Besar Wilayah Sungai (BBWS) Brantas)* under Ministry of Public Works is maintaining the drainage. BBWS has 526 civil servants and 345 outsourced workers and 60 civil servants and 17 outsourced workers are engaged in drainage maintenance.

Among drainage maintenance, Drainage Department of City also works for dredging and removal of aquatic plants and operation of pumping stations. If BBWS has sufficient budget, it is prioritized. Next to it, the city budget is to be expended. Drainage Department of City has six civil servants and 375 outsourced workers responsible for operation and maintenance.

3.3.1.3 Solid Waste

Surabaya City Department of Gardening and Cleaning is operating and maintaining the vehicles and facilities procured by this project. The Department has 621 civil servants and 71 outsourced workers.

3.3.1.4 Water Supply

Surabaya Regional Drinking Water Company (PDAM) is responsible for the implementation of the components in water supply sector of this project and operation and maintenance. Distribution Maintenance Departments are organized for each eastern and western zone taking charge of respective operation and management tasks

Therefore, the responsible organization is clarified for operation and maintenance by each sector and there is no particular problem.

3.3.2 Technical Aspect of Operation and Maintenance

3.3.2.1 Urban Roads

City department has no clear technical classification for maintenance staff and technical capacity cannot be confirmed. City outsources some maintenance operation and outsourced companies are conducting training.

3.3.2.2 Drainage

Removal of aquatic plants and canal dredging are the main task of operation and maintenance. BBWS and City department are conducting training for both civil servants and outsourced staff.

3.3.2.3 Solid Waste

The City department conducts training for permanent staff on solid waste depots.

The department also trains garbage truck drivers when they start their jobs.

3.3.2.4 Water Supply

When new pump operators are recruited, PDAM conducts training to them based on manuals prepared by pump makers. PDAM's Distribution Maintenance Department conducts training of its staff for daily maintenance of water pipes.

By these facts, it is confirmed that a certain level of training has been conducted but it is not sure that the technical level has been sufficiently achieved to the current required standard including outsourced staff.

3.3.3 Financial Aspect of Operation and Maintenance

3.3.3.1 Urban Roads

The City has annual budget for road maintenance of Rp. 20 billion. It is judged that the scale of this budget is sufficient for the responsible maintenance operation. However, the maintenance cost may rise as the traffic volume increases.

3.3.3.2 Drainage

There has been no user charge for drainage. The BBWS expends Rp. 450 million annually for three components under the project. BBWS is a national organization and the budget is secured from the national budget. The maintenance cost, however, may increase as a result of the progress of urban development and other factors.

3.3.3.3 Solid Waste

The City collects monthly Rp. 500 from low income households and Rp. 12,000 from other households per household for solid waste discharge (Mayor Regulation 57/2001). Although total amount collected is not clear, the amount is below initial estimation. The shortage is covered by City budget according to Department of Gardening and Cleaning. However, the recycling activity is not so active that waste discharge may increase in future resulting in an increase in financial assistance from the city.

3.3.3.4 Water Supply

PDAM reported that the operation and maintenance cost for each facility is not clear, but its revenue comes from water usage and the financial standing of PDAM is good.

3.3.4 Current Status of Operation and Maintenance

3.3.4.1 Urban Roads

During field survey, it was observed that the roads were maintained in good condition. The road sections under this project have high traffic volume but there is no problem with road surfaces. However, some sections have not been swept properly.

3.3.4.2 Drainage

BBWS conducts removal of aquatic plants and cleaning twice a year. The target areas of the project are maintained in good condition. BBWS conducts dredging as necessary.

3.3.4.3 Solid Waste

During field survey, it was observed that the facilities and trucks are maintained in good condition.

3.3.4.4 Water Supply

During field survey, it was observed that the pump stations and pipes are maintained in good condition.

Photo 1 Urban Road: Kenjeran Road

Photo 2 Drainage: Kubong Agung Canal

Photo 3 Solid Waste: Garbage Truck

Photo 4 Water Supply: Wonocolo Pump Station

Therefore, although there is no involvement of the executing agency, the responsibility of operation and maintenance of each component of this project is clearly defined by each organization by sector. The City's responsible area has expanded from the time of appraisal. There is no specific concern in structural aspects of sustainability because Surabaya City and other organizations clearly implement each responsibility and prepare maintenance budgets accordingly. On the other hand, the sectors supported by national and city budget, especially urban roads, drainage and solid waste, hold risks which endanger financial sustainability through the increase of cost and deterioration of financial balance.

4. Conclusion, Recommendation and Lessons Learned

4.1 Conclusion

Uncompleted sections and non-operational sections after completion at the time of ex-post evaluation have been in service and used effectively. There is no particular problem in operation and maintenance structure because responsible organizations are currently clearly defined. The recommendations by ex-post evaluation are steadily implemented in the clarification of road operation and maintenance organization and record keeping of flooding and inundation.

4.2 Recommendation

Not applicable.

4.3 Lessons Learned

The system of local governance in Indonesia greatly changed from the time of appraisal to the present. Especially, the Decentralization Law (1999) and its revision in 2004 expanded the responsible area of cities and influenced the project. Therefore, for future projects, not limited to Indonesia, it should be considered that the proper implementation structure, such as setting a local government as an executing agency or involvement of a local government from an initial stage, depending on the situation of roles between national and local governments and project contents for multi-sectorial infrastructure projects in specific areas. This will facilitate the project implementation and follow-up.

Comparison of Planned and Actual Scope

Item	Planned	Actual
1.Output		
Urban Roads	・Construction of EMRR I ・Improvement of Kenjeran Rd. ・Improvement of Banyu Urip Rd. ・Improvement of Margomulyo Second Carriageway ・Construction of (EMRR II) & Bridge Total Length Construction 15,265 m Improvement 10,720 m	・Construction of EMRR ・Improvement of Kenjeran Rd. ・Improvement of Margomulyo Rd. ・Improvement of Mastrip Rd. Total Length Construction 2,850 m Improvement 15,843 m
Drainage	・Improvement of Perbatasan River ・Improvement of Kebonagung Canal Total canal length: 26.8 km Total pond area 28 ha	・Improvement of Perbatasan River ・Improvement of Kebonagung Canal Total canal length: 29.4 km Total pond area: 80.7 ha
Solid Waste	・Collection equipment (Trucks etc.) ・Landfill equipment	・Collection equipment (Trucks etc.) ・Landfill equipment ・Civil work projects
Water Supply	・Transmission/Primary/ Secondary Water Supply and Distribution Pipelines ・Secondary Distribution (steel pipe) ・Pipe Materials for Reservoir ・Tertiary Distribution Mains ・House Connections ・Wonocolo Pump Station ・Putat Gede Distribution Facilities Installations	・Mostly as planned with difference in quantity ・Takeover of the uncompleted IBRD portion -Pipe installation connecting Wonocolo Pump Station to existing ESRM -Connection from ESRM to Keneran Rd -Connection of uncompleted ESRM portion to Wadung Asli - Rungkut
2.Period	February 1993- March 2001 (8 years one month)	February 1993- March 2004 (11 years and one month with some portion uncompleted)
3.Cost Foreign Currency Local Currency Total (Japanese ODA Loan Portion) Exchange Rate	 4,959 million yen 10,643 million yen 15,602 million yen 11,251 million yen Rp. 1= 0.064 yen (as of 1992)	 (Breakdown is unavailable between foreign and local currency portions.) 13,196 million yen 10,893 million yen Rp. 1= 0.017 yen (simple average during 1994 - 2004)