## M.2.6 NON-STRUCTURAL AND SUPPORTING MEASURES

### (1) Non-Structural Measures

In the Master Plan, it is recommended to utilize the existing floodplain management system such as flood forecasting provided by EFCOS as one of the non-structural measures.

On the other hand, urbanization has been remarkably progressing in the Metropolitan Manila, especially in the core area. Due to changing land use conditions, runoff ratio has been remarkably increased against what has been imagined as shown in *Figure M.2.24*.

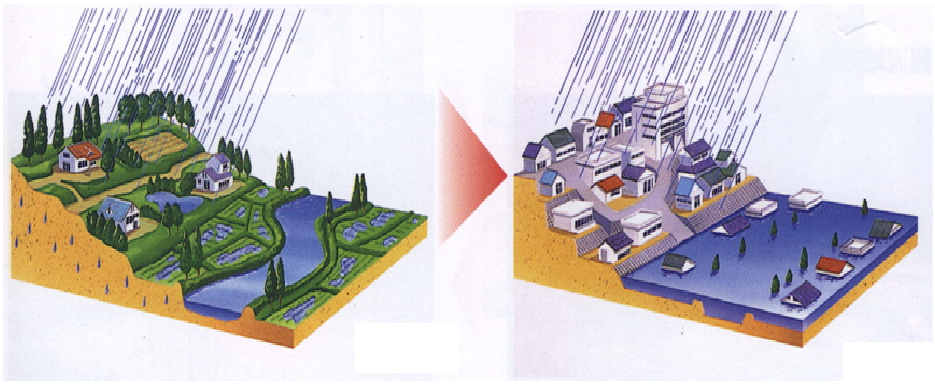



**Figure M.2.24 Image of Increase of Runoff Ratio due to Urbanization**

The increase of runoff coefficient in the past 35 years was studied in the master plan stage. It reveals an increase of 15 to 20% by drainage basins from the 1970s to 2004 in North Manila and 10 to 23% in South Manila, as shown in *Table M.2.21*.

**Table M.2.21 Increase of Run-off Ratios by Basins of Drainage Pumping Station**

| Drainage Area | Pump Drainage Basin | 1970s Runoff Coefficient | | 1980s-1990s Runoff Coefficient | | This Study Runoff Coefficient | % Increase from Original Runoff Coefficient |
|---|---|---|---|---|---|---|---|
| North | Vitas | | → | 0.75 | → | 0.74 | |
| | Binondo-Escolta | 0.64 | → | 0.64 | → | 0.77 | 20 |
| | Quiapo | 0.63 | → | 0.63 | → | 0.73 | 16 |
| | Aviles | 0.60 | → | 0.60 | → | 0.70 | 17 |
| | Valencia | 0.59 | → | 0.59 | → | 0.68 | 15 |
| | Balut | | → | 0.65 | → | 0.79 | |
| South | Tripa de Gallina | 0.56 | → | 0.60 | → | 0.62 | 11 |
| | Libertad | 0.64 | → | 0.64 | → | 0.75 | 17 |
| | Balete | 0.52 | → | | → | 0.64 | 23 |
| | Paco | 0.64 | → | 0.64 | → | 0.71 | 10 |
| | Pandacan | 0.68 | → | 0.68 | → | 0.63 | |
| | San Andres | | → | 0.72 | → | 0.72 | 0 |
| | Sta. Clara | 0.56 | → | 0.56 | → | 0.63 | 13 |
| | Makati | 0.62 | → | 0.62 | → | 0.68 | 10 |

A case study on the increase of runoff in the study area is presented below.

*Figure M.2.25* shows current condition of Maricaban creek basin. As can be seen in *Figure M.2.25*, it is still possible to develop Maricaban creek basin in future because there exists an undeveloped area, which has a high potential for urbanization considering its geographical situation.

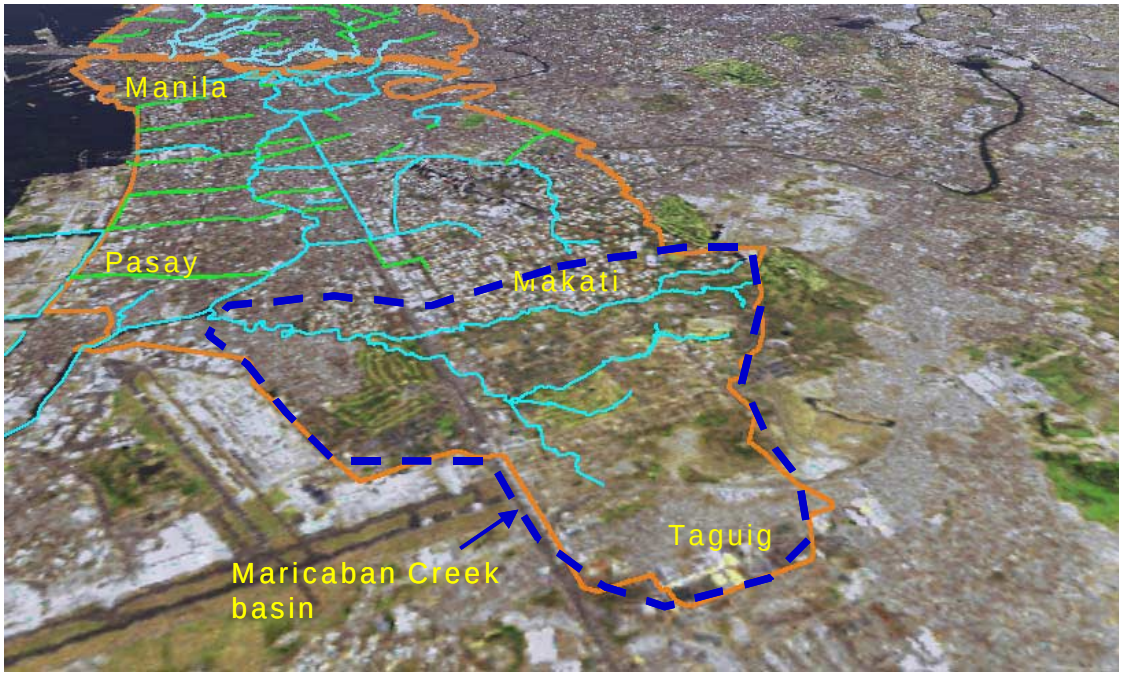



**Figure M.2.25 Current Condition of Maricaban Creek Basin**

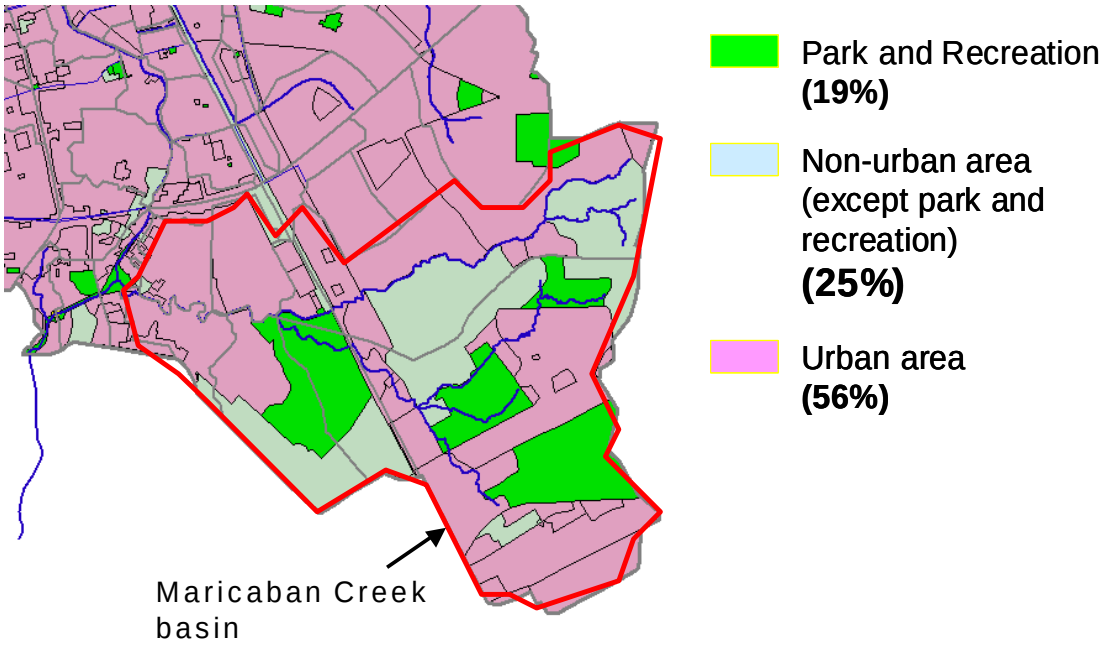



**Figure M.2.26 Current Land Use Condition in Maricaban Creek Basin**

*Figure M.2.26* shows current land use condition in Maricaban Creek basin. The drainage area is about 11 $km^2$. The stormwater in this basin is collected by Maricaban Creek, discharging into Estero de Tripa de Gallina. The stormwater stored in Estero de Tripa de Gallina is finally drained by Tripa de Gallina pumping station. Based on the current land use, runoff coefficient in this area is calculated at 0.56.

For future land use change, there can be the following two scenarios.

Scenario 1: Urbanization will proceed only in non-urban area except park and recreation area (total 25%).

Scenario 2: Urbanization will proceed in both non-urban area and park and recreation (total 44%, Park and recreation are counted in non-urban area).

During the Study, using the future land use plan maps provided by LGUs, general tendency of urbanization in the core area has been analyzed. Expected increase in urbanization area is shown in *Figure M.2.27*. Using this figure, the future increase in urban area can be estimated by giving the current percentage of non-urban area in the target area. The expected future increases in urban area in Maricaban Creek Basin for each scenario are calculated as follows.

Scenario 1: Non-urban area 25% → Increase in urban area 22%

Scenario 2: Non-urban area 44% → Increase in urban area 65%

*Figure M.2.28* shows the relationship between increase in urban area and increase in runoff coefficient, based on the analysis of existing land use map and future land use plan maps in the core area. Using this figure, the future increase of runoff coefficient can be estimated by considering the increase in urban area. The results are as follows.

Scenario 1: Increase in urban area 22% → Increase in runoff coefficient 10%

Scenario 2: Increase in urban area 65% → Increase in runoff coefficient 16%

Finally, the expected future runoff coefficients are calculated as follows.

Scenario 1: 0.56 (Existing) → 0.62 (Future)

Scenario 2: 0.56 (Existing) → 0.65 (Future)

In the Master Plan, scenario 1 has been considered. However, if further urbanization will proceed, other countermeasures such as retention facilities will be required. If retention facilities will be installed within Maricaban Creek basin to mitigate the increase of runoff volume when the existing non-urban area will be newly developed, then improvement work proposed in the Master Plan (Phase 3) such as Maricaban interceptor can be downsized.

There are various options applicable in the core area and those images are presented in the following *Figures M.2.29 to M.2.34*, which is from The Guideline of Urban Drainage Improvement, MLIT, Japan.

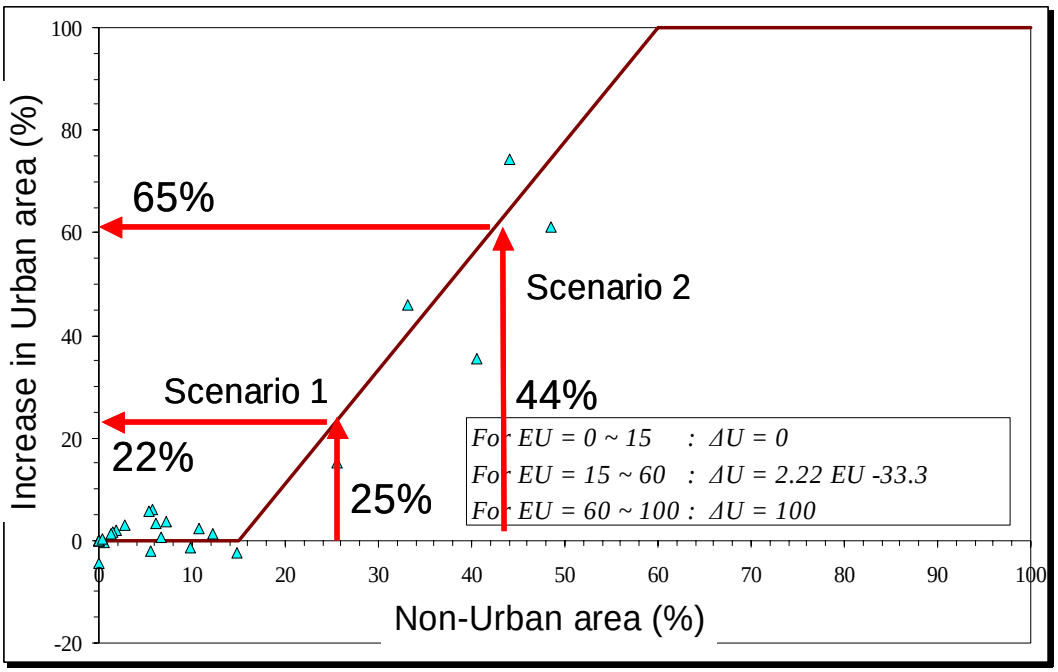



**Figure M.2.27 Expected Increase in Urbanization Area in the Core Area**

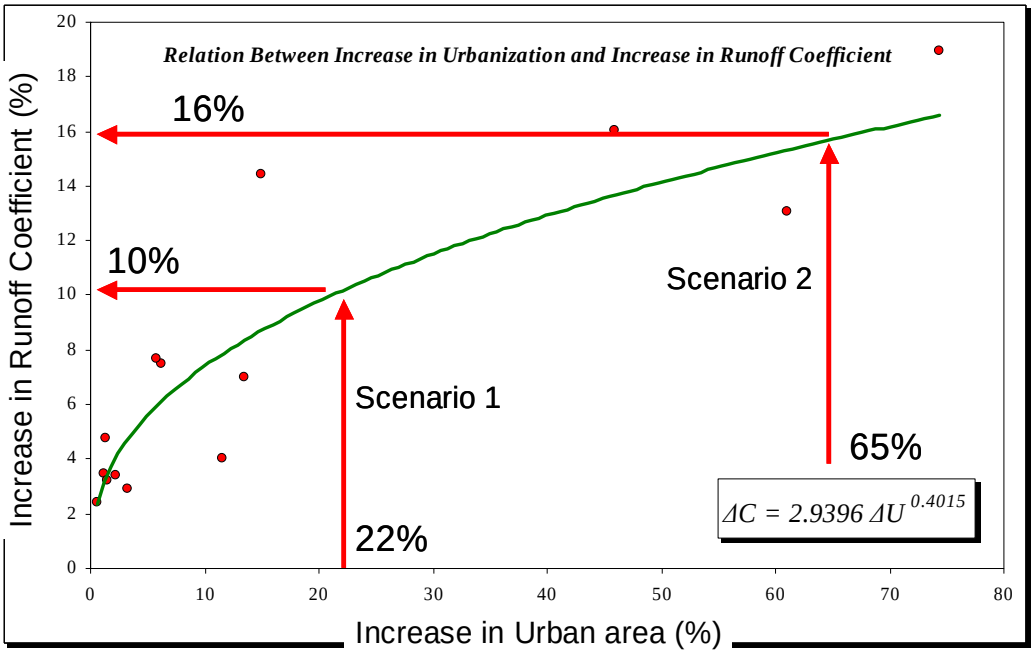



**Figure M.2.28 Relationship Between Increase in Urban Area and Increase in Runoff Coefficient in the Core Area**

Ordinary Time

Rain Time

**Figure M.2.29 Sample of Stormwater Retention Facility (Park)**

Ordinary Time

Rain Time

**Figure M.2.30 Sample of Stormwater Retention Facility**

**(In School/University Ground)**

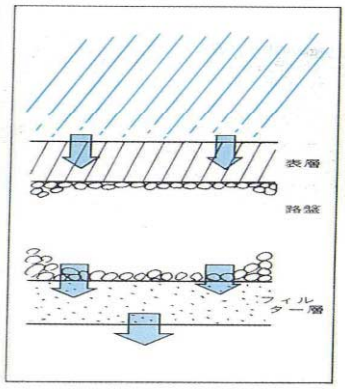




**Figure M.2.31 Sample of Stormwater Retention by Permeable Pavement**

**(Parking Area)**

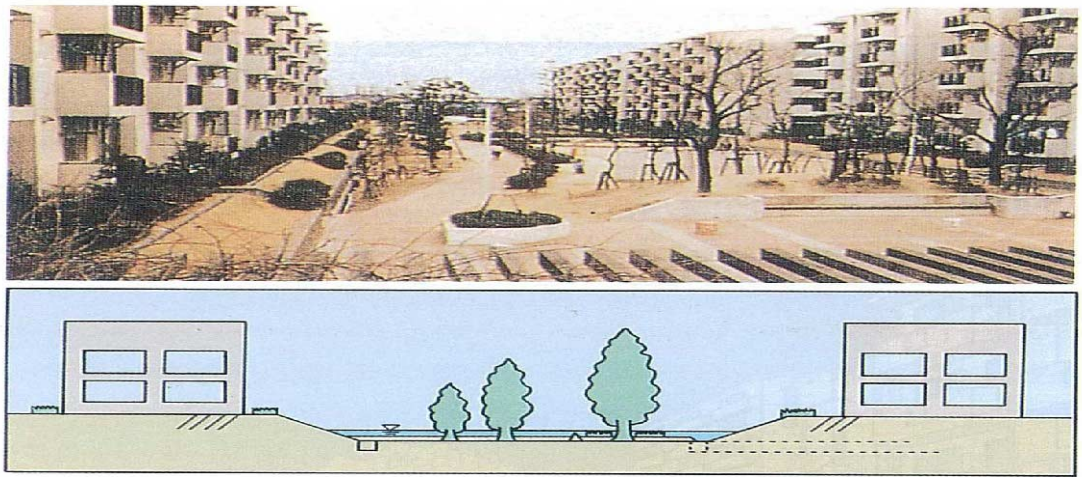


**Figure M.2.32 Sample of Stormwater Retention Facility (Apartment Building)**

Overview of the Facility

Ordinary Time

Rain Time

**Figure M.2.33 Sample of Stormwater Retention Facility (Tennis Court)**

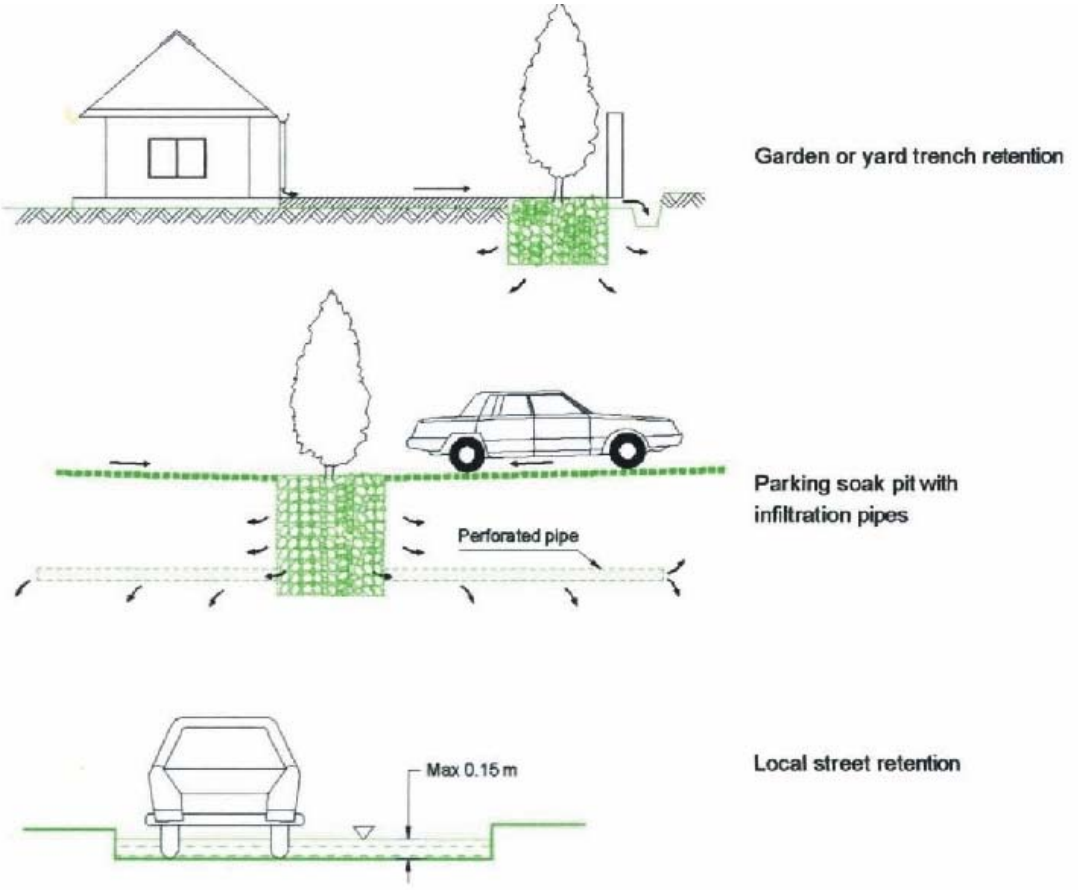



**Figure M.2.34 Sample of Various Stormwater Retention Facilities**

### (2) Supporting Measures

The supporting measures aim to bolster and sustain the above two measures by improving organization and activities for O & M including funding system, community participated solid waste management and O & M in view of sustainable drainage system. Further explanation for such measures is provided in the later chapter of this Guideline.

In connection with improvement of operation and maintenance activities for the drainage facilities and pumping stations, the following additional rainfall stations and staff gauges of water level are proposed in view of effective operations of drainage facilities and pump equipment. These are considerably important to observe and accumulate rainfall and water level data for hydrological and hydraulic analysis such as rainfall patterns, total amounts, intensities, and flow conditions of channels, and data obtained from such additional stations are highly useful to consideration and necessary procedure for further drainage improvement in the core area of Metropolitan Manila. *Figure M.2.35* shows proposed locations.

Rainfall observatory stations (automatic recording equipment at major pumping stations)

- Vitas pumping station
- Paco pumping station
- Libertad pumping station

Water level gauging stations (staff gauges in the esteros)

- 15 sites in the major esteros directly discharging to drainage pumping stations

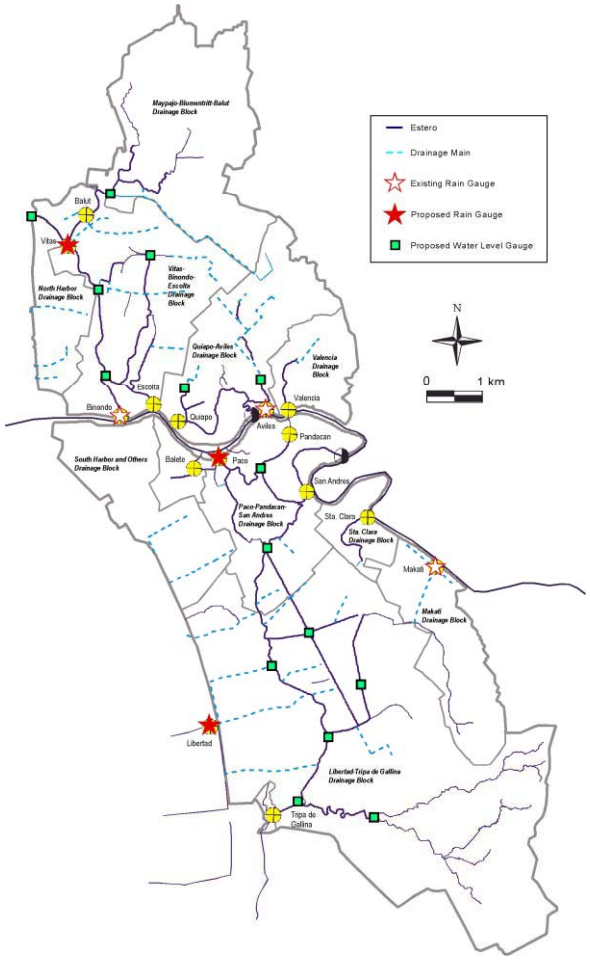



**Figure M.2.35 Locations of Rainfall and Water Level Observatory Stations**

## M.2.7 DESIGNING OF DRAINAGE FACILITIES OF BOX CULVERTS IN PRIORITY PROJECTS

### (1) General

Another objective of the priority projects is to construct additional box culverts to improve present regional/local poor drainage conditions. Background and major matters considered in the design of box culverts are discussed below.

### (2) Present Conditions of Underground and Related Facilities

Prior to planning and designing of the additional works of the priority projects, an inventory survey on underground facilities and maintenance holes was conducted mainly by collection of related document/drawings and interview for persons in charge. For further consideration of drainage improvement, special attention should be paid to such existing underground and related facilities.

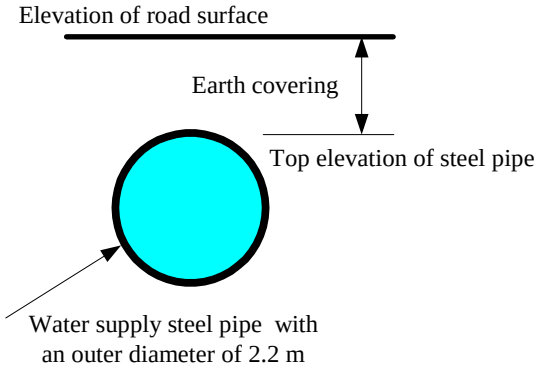
#### 1) Water Supply Pipe

There exist various facilities such as drainage pipes, water supply pipes, and sewerage pipes. Such underground facilities are mostly placed within 1 m depth from the ground surface. These facilities would not be an obstacle to construct additional box culverts. However, a main obstacle will be a water supply steel pipe cutting across the core area from north to south. The pipe having an outer diameter of 2.2 m was placed by MWSS in 1987. Special attention should be paid to depth of earth cover at crossing points of additional culverts and the steel pipe. Those existing conditions are summarized in *Table M.2.22*. As seen in the table, some devise such as partial replacement is needed at two crossing points of Blumentritt interceptor and Faraday box culvert.

**Table M.2.22 Existing Depths of Earth Covering at the Intersections in Question**

| Objective Drainage Facilities | Location | Elevation of Road Surface (EL.m) | Top Elevation of Steel Pipe (EL.m) | Earth Covering (m) |
|---|---|---|---|---|
| Additional Blumentritt interceptor | Intersection of Hermosa street and Juan Luna street | 12.25 | 10.75 | 1.5 |
| Additional Zobel Roxas Box Culvert | Intersection of Zobel Roxas Ave. and South Superhighway | 13.35 | 8.70 | 4.65 |
| Calatagan Creek I | South Superhighway | 15.00 | 9.70 | 5.30 |
| Additional Faraday Box Culvert | Intersection of Faraday street and South Superhighway | 13.00 | 10.70 | 2.30 |

Note: The dimensions of steel pipe are as shown below.



### 2) Maintenance Hole

Maintenance holes have been constructed on the box culvert for maintenance activities of dredging/declogging of culvert. In principal, maintenance holes have been installed at an interval of 50 m. However, some maintenance holes are not functioning due to artificial covering by asphalting or earth embankment. Considering effective maintenance works of the culvert, some modification works will be made to the covered maintenance holes.

An inventory survey was conducted throughout site inspection and available drawings were used to clarify the present conditions of maintenance holes in the 5 box culvert channels of Blumentritt interceptor, Buendia outfall, Zobel Roxas drainage main, Pasong Tamo drainage main and Faraday drainage main, which are to be declogged in the priority projects. The results are as follows.

**Table M.2.23 Present Condition of Maintenance Holes**

| Channel | Total Number of Maintenance Holes | Number of Covered Maintenance Holes |
|---|---|---|
| Blumentritt Interceptor | 91 | 20 |
| Buendia Outfall | 47 | 29 |
| Zobel Roxas Drainage Main | 17 | 3 |
| Pasong Tamo Drainage main | 13 | 0 |
| Faraday Drainage Main | 43 | 0 |

## (3) Basic Conditions and Basic Line of Designing

The following are the basic line for construction of additional works of priority projects.

- Additional box culvert is constructed along the existing culvert in question, in principle. In case there is no space for installation of box culvert, it is aligned in the adjacent street.
- Longitudinal bed slope is set from gentle to steep towards upper endpoint.
- Required box culvert cross-sectional area is estimated as pressure one under the condition that stormwater in the box culvert does not spout from maintenance hole or manhole as mentioned in *Chapter M.2.3*.
- Box culvert is constructed by concreting in site in principle. Considering traffic constraints in trunk road, ready-made box culvert is used to shorten construction period.
- A 1.0 m is adopted to minimum earth cover in roadway and railway.
- Minimum inner height of box culvert will be 1.2 m considering easy maintenance activities.
- Direct foundation is applied as the foundation structure of box culvert considering soil and geological aspects.
- Street inlet with steel grating is installed at intersection depending on site condition, especially along the proposed Blumentritt interceptor.
- Maintenance holes are installed at interval of around 50 m or major intersections, points of changing slopes, depressions, etc.
- Stop log gate is installed at some sections so that maintenance works of the culvert could be conducted in dry or water-free condition, especially in Blumentritt interceptor and Buendia outfall in the priority projects. These two channels are always occupied by stormwater because of high water level at outlet. The respective channel bed elevations are around E.L.8.5 m to 8.0 m whereas mean tide level is E.L.10.475 m. The criteria of installation of stop log gate are as follows.

  For box culvert discharging through pumping stations: culvert with more than 50 cm water depth when water level of outlet is pump operation stop level.

For box culvert discharging directly to Manila Bay: all culverts

- For construction works of box culvert, some formal settlers are to be removed temporarily or permanently depending on the site conditions.

### (4) Designing of Box Culvert for Additional Blumentritt Interceptor

In line with the above-mentioned basic line and design criteria, a preliminary design of additional culvert is prepared. A description is provided below for the proposed additional culvert of Blumentritt Interceptor.

#### 1) Proposed Route of Additional Culvert

The proposed route is finally determined as shown in *Figure M.2.36* through preliminary alternatives study. The proposed route runs mostly along the route of the existing Blumentritt Interceptor. The new outlet and the lowermost portion of the existing interceptor are aligned along Hermosa Street directly joining to the Estero de Sunog Apog as explained in the following. The total length of additional culvert will be around 2,570 m.

The lower part of the present box culvert from the present outlet to Hermosa Street (a part of Abucay street) is closed at the bending section of Hermosa Street and stormwater collected within its catchment is drained through the present outlet. The remained box culvert in the upper reaches is connected with additional new interceptor and directly joined with Estero de Sunog Apog.

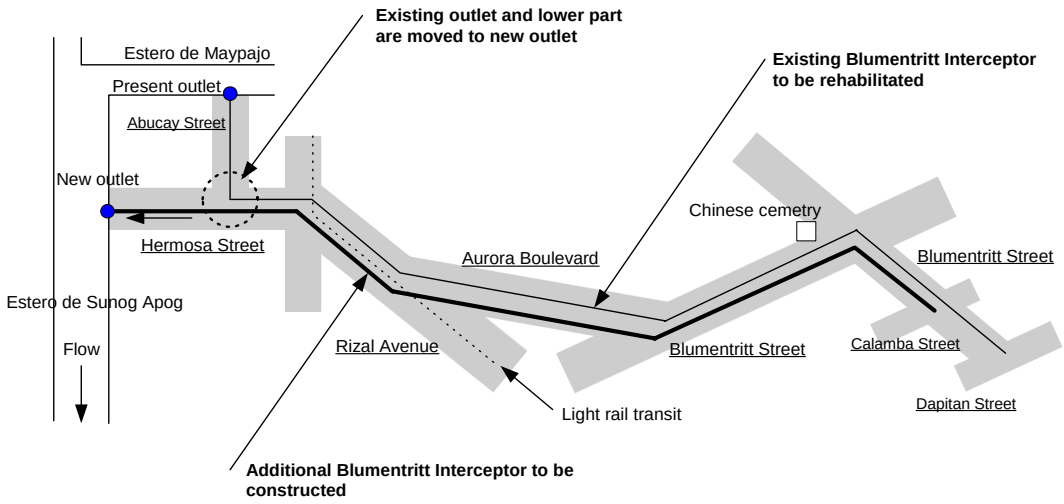



**Figure M.2.36 Proposed Route of Additional Blumentritt Interceptor**

#### 2) Design Discharge for Additional Culvert

The design scale of the Blumentritt Interceptor system is determined under a 3-year return period. The proposed design discharge is allocated into the respective existing and additional interceptors. The design discharge allocated in the additional one is shown in *Figure M.2.37*.

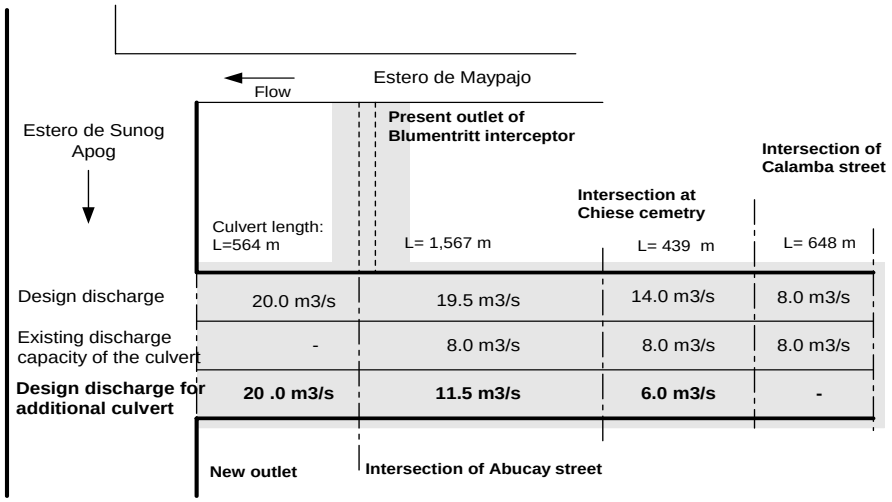



**Figure M.2.37 Design Discharge of Additional Blumentritt Interceptor (Box Culvert)**

### 3) Longitudinal Profile of Box Culvert

The longitudinal profile of the additional Blumentritt Interceptor is designed considering existing topography on the proposed route, depth of earth covering of 1.0 m, etc.

### 4) Cross-section of Box Culvert

The designed additional interceptor consists of concrete box culvert having 2 lanes and 1 lane by stretches. The proposed dimensions of additional culverts with a total length of 2,570 m are as follows.

**Table M.2.24 Dimensions of Additional Box Culvert**

| Strech | Length | Culvert Dimension |
|---|---|---|
| Outlet - Intersection of Abucay street | 564 m | Width 3.4 m × height 2.6 m × 2 lanes |
| Intersection of Abucay st. - Intersection of Chinese cemetry | 1,567 m | W 3.6 m × h 2.7 m × 1 lane |
| Intersection of Chinese cemetry - Intersection of Calamba st. | 439 m | W 2.3 m × h 2.4 m × I lane |

An image of additional culvert at section of Rizal Avenue is shown in *Figure M.2.38.*

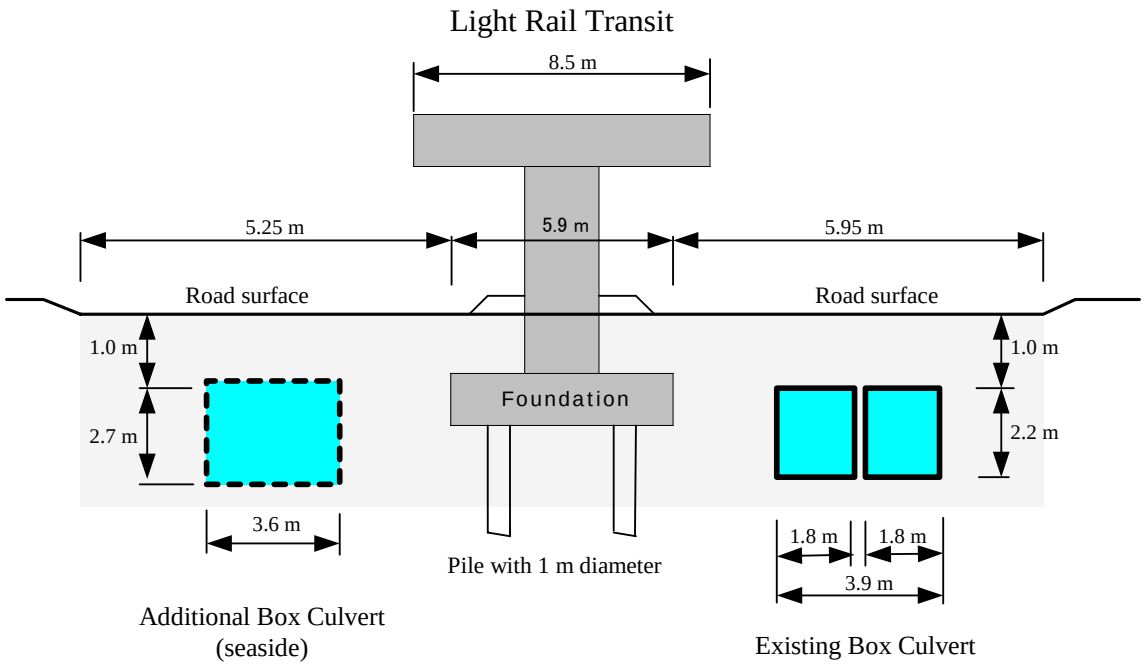



**Figure M.2.38 Additional Box Culvert of Blumentritt Interceptor (Rizal Avenue)**

### 5) Other Related and Remedial Works

Stop log gate

The existing box culvert/additional new culvert is always submerged due to back water from outlet, resulting in difficulty of periodical maintenance activities. In view of effective maintenance works performed in dry condition of the culvert, the stop log gate is additionally installed at 8 sections jointly (same sections) for existing and additional culverts in the image presented in *Figure M.2.39*.

Inlet for road surface flow

In order to drain road surface flow into the box culvert smoothly and effectively, inlets are newly installed at 9 sections which are located at intersections in the upper Blumentritt Street from intersection of Chinese cemetery to Dapitan Street. Inlet ditch is installed on the whole carriageway width as pictured in *Figure M.2.40* and covered by steel grating.

Maintenance hole

In order to operate and maintain the box culvert smoothly and effectively, maintenance holes are dug at an interval of 50 m. There will be a total of 51 maintenance holes. As mentioned in the above, stop log gate will be jointly installed for existing and additional culverts at 8 sections of the 51 maintenance holes.

The following are the respective proposed routes of the additional culverts in Zobel Roxas drainage main and Faraday drainage main as reference.

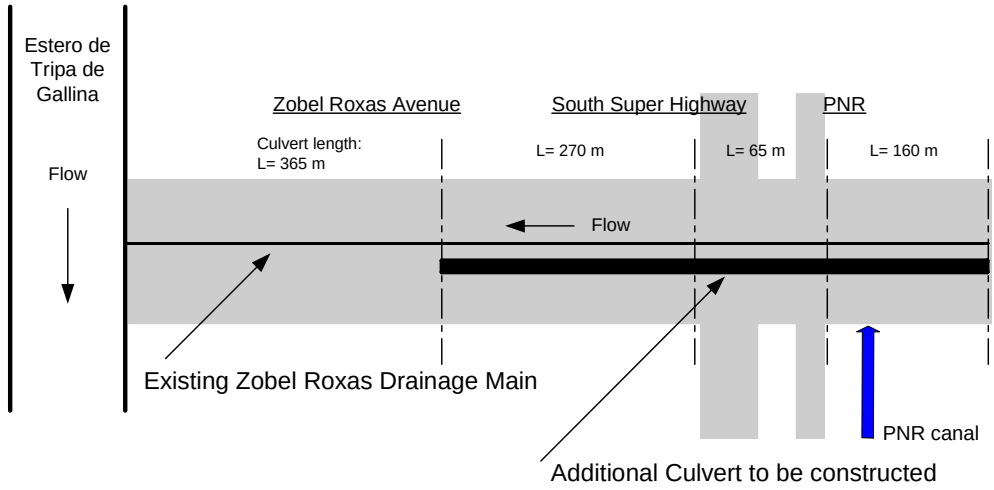



**Figure M.2.39 Proposed Route of Additional Culvert in Zobel Roxas Drainage Main**

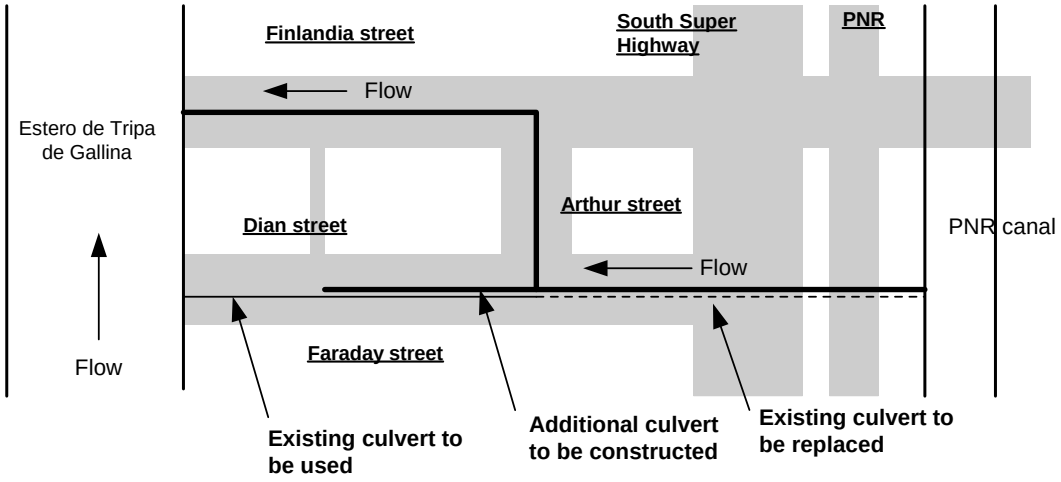



**Figure M.2.40 Proposed Route of Additional Culvert in Faraday Drainage Main**

## [REFERENCE: DESIGN CONDITIONS FOR BOX CULVERT]

### 1) Load, Strength and Others

The loads acting to the culvert under the road consist of the dead load and the live load. The dead loads consist of soil weight, pavement weight, weight of slab and wall, earth pressure and water pressure. The live loads consist of wheel load, spread load and so on.

The design value such as unit weight of the material adopted follows the design manual and AASHTO.

| | |
|---|---|
| Reinforcement concrete | 24.5 kN/$m^3$ |
| Back-fill soil | 18.0 kN/$m^3$ |
| Wheel load (18 Truck Load) | 72 kN |

The strengths of concrete and steel bar are as follows:

| | |
|---|---|
| Concrete compressive strength | 21 MPa |
| Shearing strength | 31.5 kN |

The diameter of reinforcement Bar is more than 16 mm.

### 2) Water table

The water table measured was 1.0 m to 2.9 m under the ground surface. From the geological profiles, it was known that the top of additional culvert is almost same level as the water table.

### 3) Soil Condition

The subject area is covered by the alluvial stratum. The thickness of the alluvial stratum is 4 m to 24 m. The alluvial stratum consists of sandy soil and silt soil. The tuff stratum exists under the alluvial stratum.

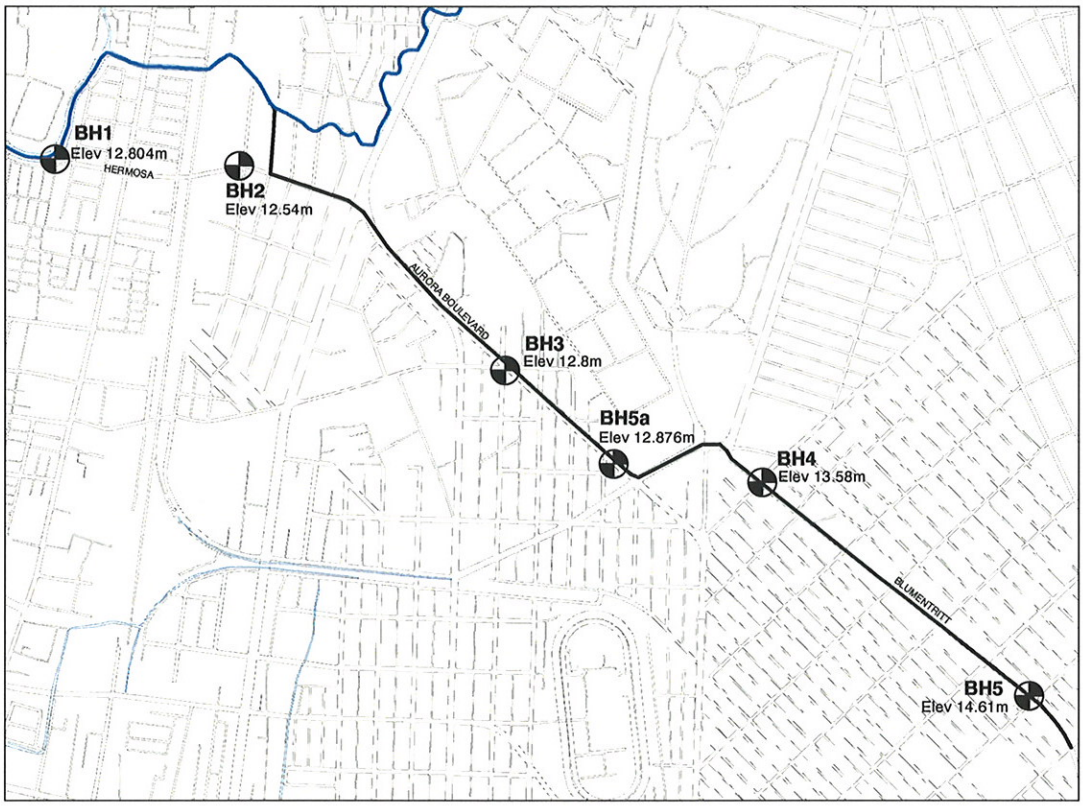
The outline of soil test is shown in the table below.

**Table M.2.25 Outline of Soil Test**

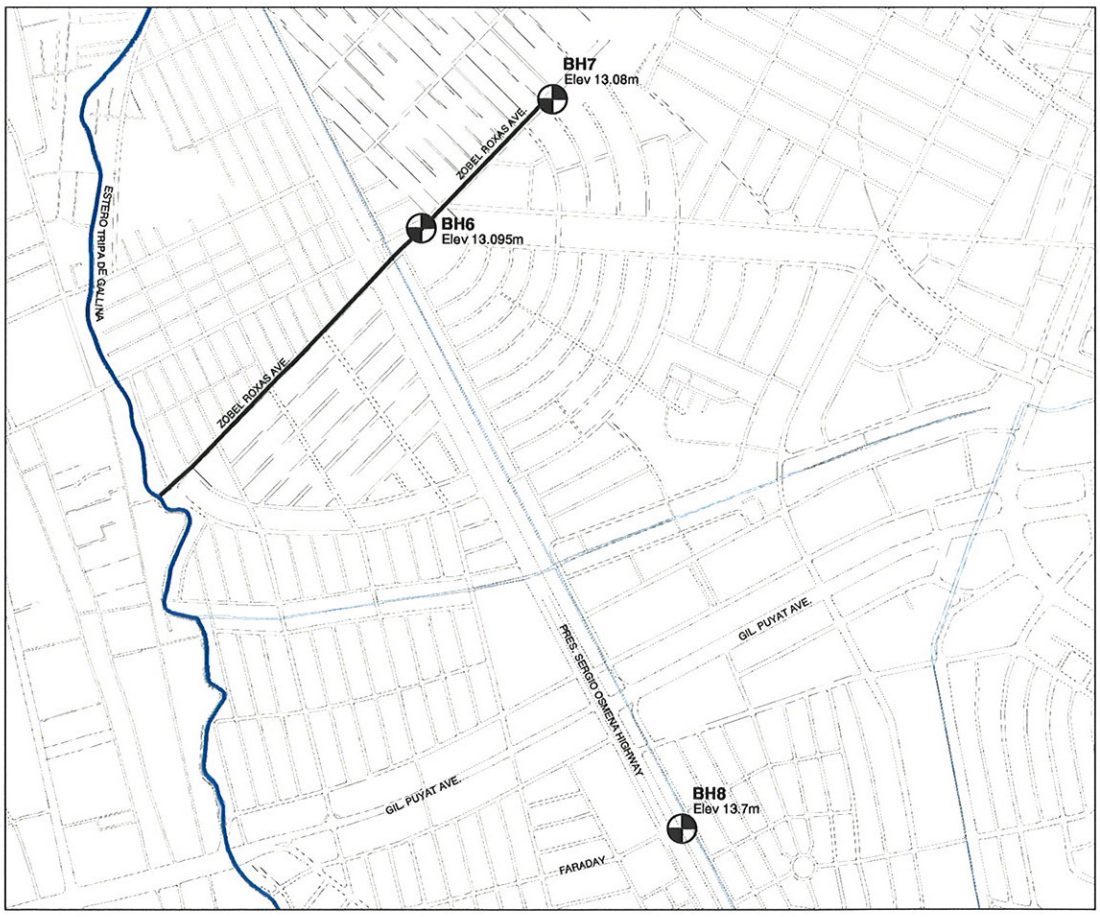
| Stratum | N-value | consistency | qu kN/$m^2$ | Remarks |
|---|---|---|---|---|
| Silty sand | 3 to 6 | loose | | BH-1,3,6 |
| Sand | 2 to 46 | loose to dense | | BH-1,2,3,4,5A,6,7,8 |
| Sandy silt | 2 to 10 | soft to stiff | | BH-2,5A,7,8 |
| Clayey silt | 8 to 22 | firm to stiff | | BH-5 |
| Tuff | | | BH-4: > 238<br>BH-5: > 38<br>BH-8: > 100 | The strength of Tuff on BH-5 and 8 is too weak. |

The geological profile and designed box culvert of Blumentritt Interceptor, Zobel Roxas DM and Faraday DM are shown in the following figures.

## Borehole Location Map (North Manila)



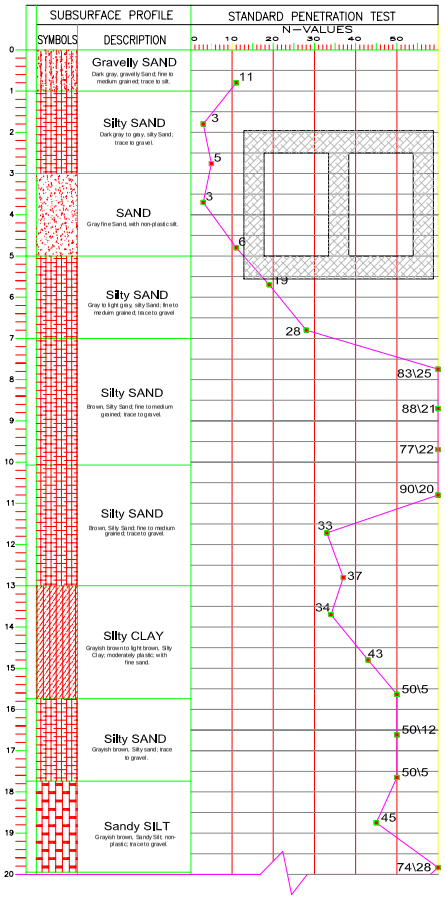

## Borehole Location Map (South Manila)



# SOIL PROFILE OF BLUMENTRITT INTERCEPTOR (1/2)

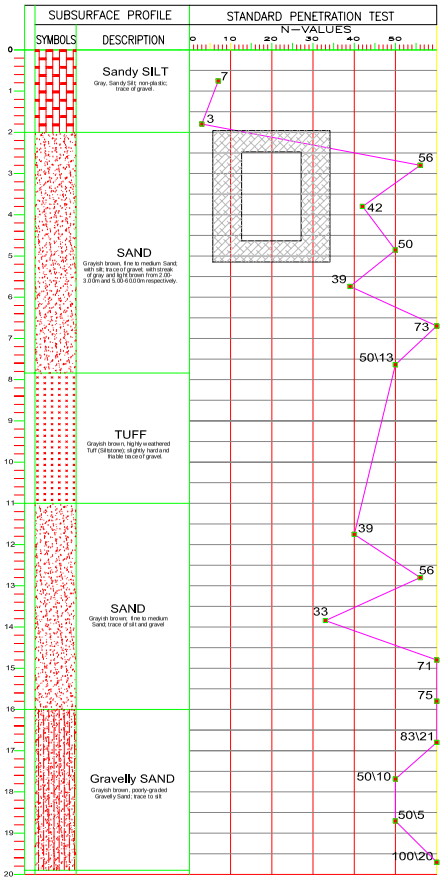
## BH-01

FINAL DEPTH = 24.75m.
ELEV. = 12.804
COORDINATES : 496945.356E
1618369.665N



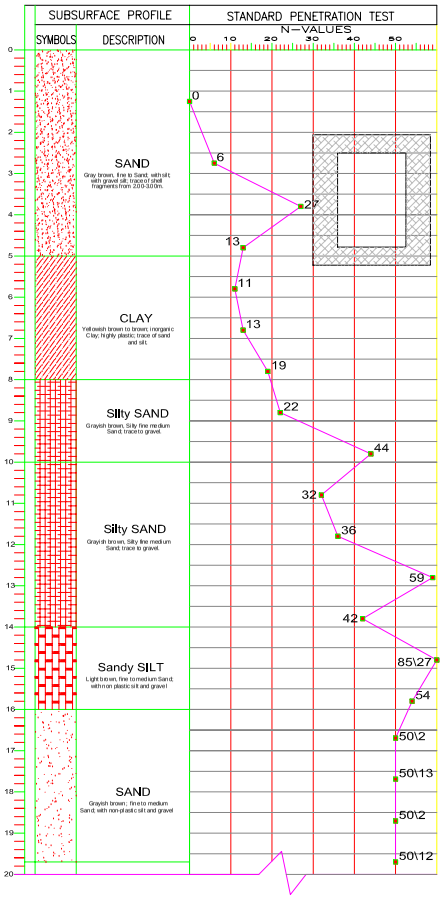

## BH-02

FINAL DEPTH = 19.90m.
ELEV. = 12.540
COORDINATES : 497425.805E
1618347.562N




## BH-03

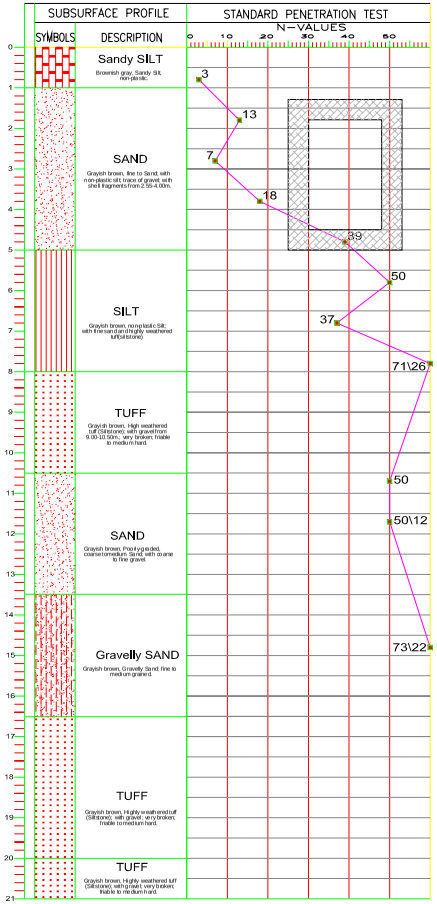
FINAL DEPTH = 22.50m.
ELEV. = 12.860
COORDINATES : 498148.796E
1617796.544N



# SOIL PROFILE OF BLUMENTRITT INTERCEPTOR (2/2)

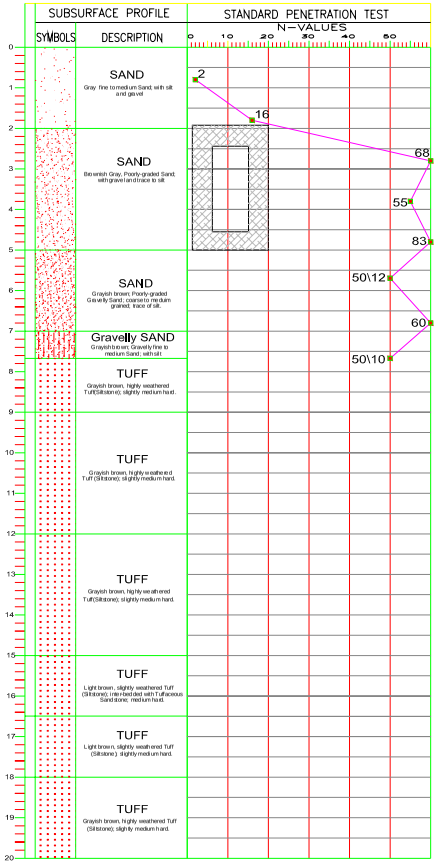
## BH-5A

FINAL DEPTH = 21.00m.
ELEV. = 12.876
COORDINATES : 498442.089E
1617542.089N



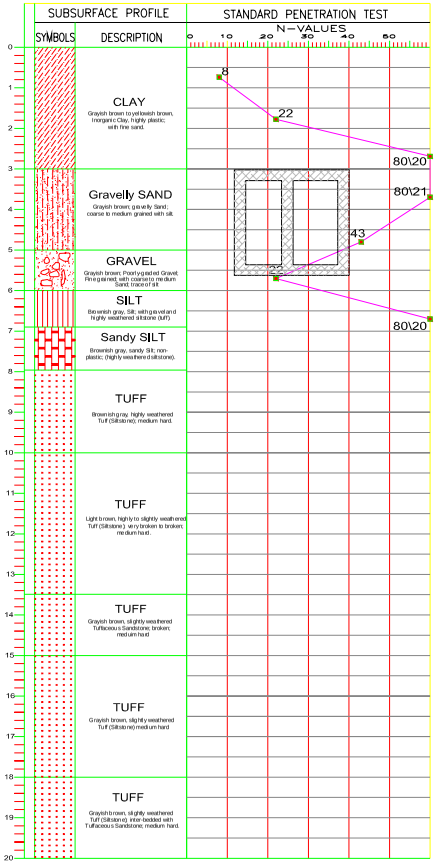

## BH-04

FINAL DEPTH = 20.00m.
ELEV. = 13.580
COORDINATES : 498839.436E
1617496.560N




## BH-05

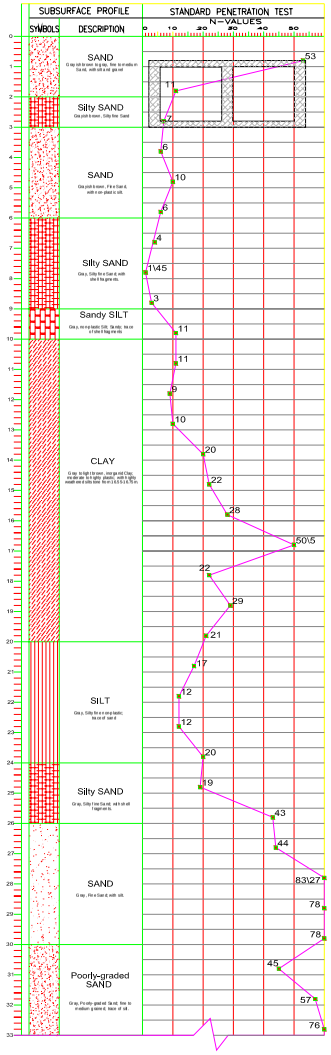
FINAL DEPTH = 20.00m.
ELEV. = 14.610
COORDINATES : 499555.750E
1616920.004N



# SOIL PROFILE OF ZOBEL ROXAS AND FARADAY DM

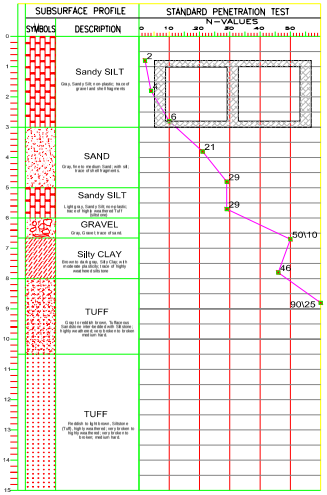
## BH-06

FINAL DEPTH = 36.10m.
ELEV. = 13.095
COORDINATES : 500274.792E
1611043.374N



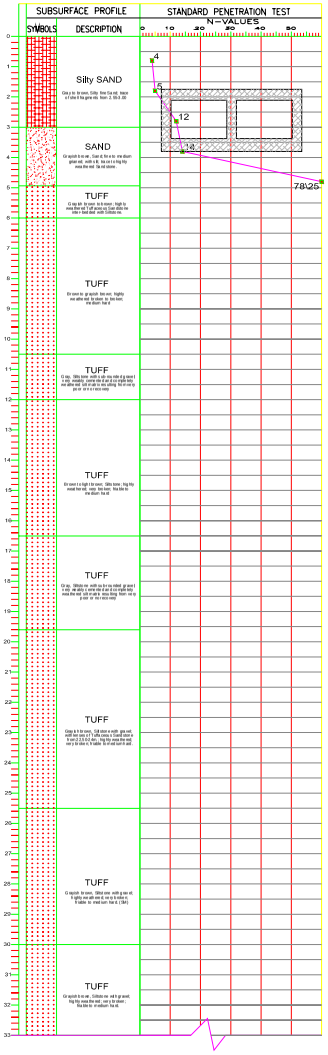

## BH-07

FINAL DEPTH = 15.00m.
ELEV. = 13.08
COORDINATES : 500554.831E
1611315.094N




## BH-08

FINAL DEPTH = 34.90m.
ELEV. = 13.70
COORDINATES : 500830.068E
1609776.260N



## M.3 CONSTRUCTION MANAGEMENT

### M.3.1 BASIC CONDITIONS OF CONSTRUCTION PLAN AND METHOD

The following are the basic conditions/assumptions of construction plan and method applied for the priority projects. It can be referred to all projects proposed in the Master Plan.

- Detailed design is to be conducted ahead of construction works.
- Construction works are to be carried out by selected contractors through international and/or local competitive bidding with prequalification procedure.
- Annual working days of 260 for construction works are assumed.
- Priority projects are divided into some package works considering nature of project works.
- Bidding including prequalification is to be completed within 1 year immediately after finishing detailed design.
- Informal settlers in the object channels are to be removed ahead of construction works.
- Resettlement is to be carried out basically by an implementation body in collaboration with the respective LGUs.
- Proposed interceptor is to be constructed in the underground by open excavation method including controlling traffic flow in the construction period.
- Cleaning of laterals is to be conducted through daily maintenance activities by the respective agencies of MMDA and LGUs separately from the above contracting system.
- The project cost finance is to be shared between national government and LGUs under the condition that main works for drainage facilities and pumping stations be made by the national government, and resettlement, by LGUs under the direction of implementing body.
- Water supply pipes across under the additional Blumentritt Interceptor at Juan Luna Street and additional Faraday DM at South Superhighway are replaced with partial modification prior to construction works.
- Special attention should be paid to traffic control during construction works especially in work sites of construction of additional box culverts of Blumentritt interceptor, Zobel Roxas drainage main and Faraday drainage main.
- Dumping site is proposed at KAMANAVA area for the priority projects as described below.

  The dumping site designated in the ongoing KAMANAVA Project is available. The dumping area is approximately 5 hectares with a capacity to accommodate a waste volume of around 150,000 $m^3$. The dumping site is located 15 to 20 km from the project area in the core area.

### M.3.2 CONSTRUCTION SCHEDULE FOR THE PRIORITY PROJECTS

For implementation of the priority projects in the core area of Metropolitan Manila, the fund arrangements including loan procedure and establishment of implementation organization of PMO are firstly needed. Subsequently, a selection of consultant is to be made for conducting detailed design for preparation of tender document and then, contractors are to be selected for carrying out construction works through local and/or international competitive biddings.

Considering such preparatory works, the construction time schedule is proposed as shown in *Figure M.3.*1. The preparatory works are to be started in early 2005 immediately after finishing the feasibility study. The total construction period is proposed at 5 years from 2006 to 2010.

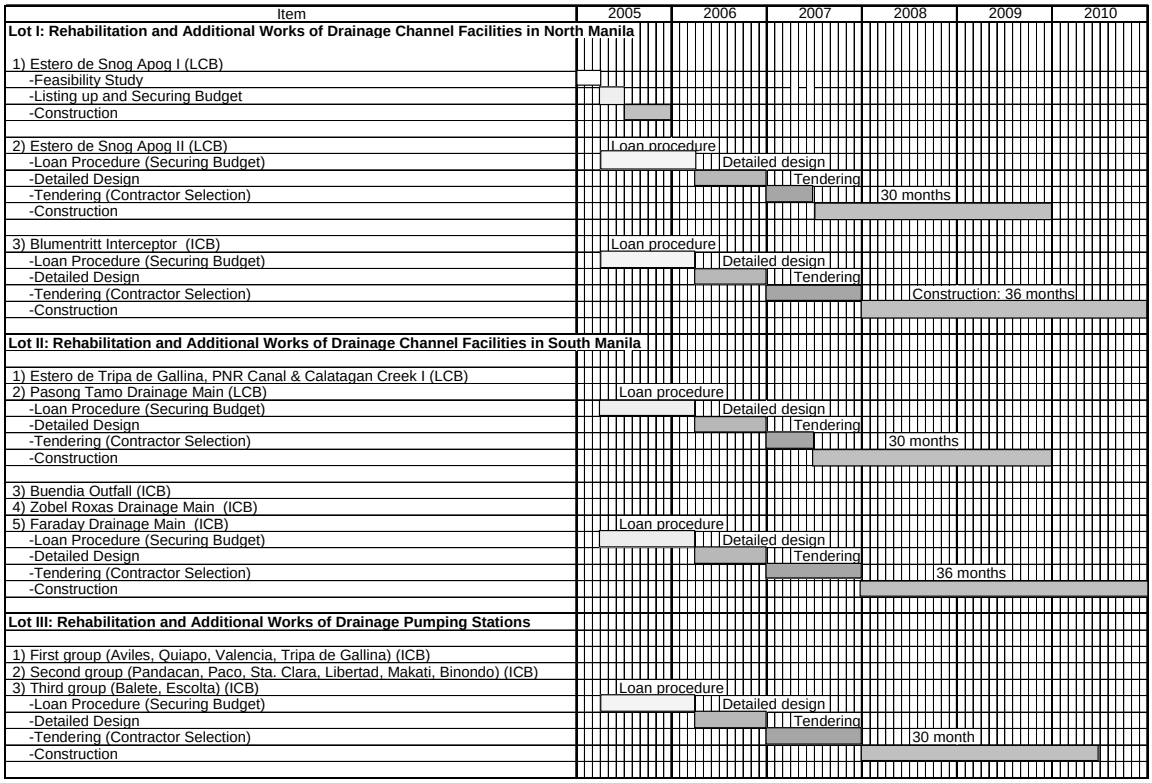



**Figure M.3.1 Construction Schedule for Priority Projects**

The rehabilitation works of the open channel, especially the dredging of Estero de Sunog Apog, is of simple and conventional works, and no relocation of formal and informal settlers is required in carrying out the dredging works. In order to mobilize the project smoothly while awaiting fund arrangement including loan procedure, it is proposed to start the works in early 2005 immediately after finishing the feasibility study through a selection of local contractor or by means of force account system by MMDA. The drawings prepared by the feasibility study are available and enough for carrying out the dredging works.

### M.3.3 CONSTRUCTION MANAGEMENT

After the detailed design, selection of contractors is to start through international or local competitive bidding with prequalification. Major items to be considered are as follows.

#### (1) Loan Procedure and Procurement

Most of the projects may be executed by applying the finance of the various loan agencies such as JBIC, ADB and World Bank. The guidelines by these finance agencies are to inform borrowers and prospective suppliers and contractors of the general principles and procedures and apply to procurement under loans from such agencies.

Any additional arrangements agreed upon between the finance agencies and the borrower regarding the use of the proceeds of the loan may be set out in each case in the Loan Agreement. The relationship between the borrower and the supplier of goods or works is governed by the bidding documents issued by the borrower and the contract concluded between the borrower and the supplier, which shall have been prepared in accordance with these guidelines and the Loan Agreement.

Although the ultimate responsibility for the procurement of goods and works required for the project rests with the borrower, the borrower has the obligation to ensure that the proceeds of its loans are used with due considerations of economy and efficiency. In this connection, four basic principles underlie procurement under finance agency loans:

- To help achieve economy and efficiency in procurement, the agency requires its borrower to obtain goods and works through international bidding unless, in special circumstances, another more appropriate procedure has been agreed upon between the agency and the borrower.
- As an international cooperative institution, the agency provides to all its member countries an opportunity to supply the goods and works which are financed by the agency.
- Transparency is essential in the procurement process to achieve economy and efficiency and to combat fraud and corruption.

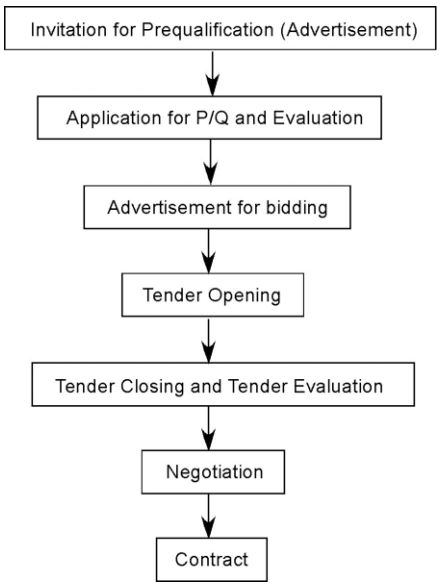
#### (2) Types of Procurement

There are various types of procurement method as described below and international and local competitive methods are to apply in the implementation of the priority projects.

- International competitive bidding
- Local competitive bidding
- International shopping
- Direct purchase/negotiation or single tender
- Limited tendering or repeat order
- Force account system, etc.

### (3) Procurement Flow

Flow of procurement is as follows.




### (4) Schedule and Quality Control of Construction Works

The planning is necessary both prior to and during the actual construction. Such planning is necessary in order to construct the project within allotted cost and on time. Items which need to be adequately planned include normally:

- The identification of specific activities of work required and interrelationships between those items (precedence relationship).
- The proper sequencing of the specific activities of work so as to complete the project in optimum amount of time.
- The time for delivery of material and installed equipment.
- The types, quantities, and duration of construction plant and equipment.
- The classification and numbers of workers needed and the periods of time they will be needed.
- The amount and timing of financial assistance that is needed.

Most construction projects are divided into specific activities of work, each with a specific objective and length of time to accomplish. Project network analysis involves the identification of specific activities, their durations, and their interrelationships. There are two types of networks in general use: 1) the activity-on-arrow (AOA) type, commonly called arrow diagramming and 2) the activity on-node (AON) type, commonly called precedence diagramming. Each of these types, both generally termed critical path method (CPM), uses the same information in a slightly different form. At specified intervals, usually weekly or monthly reports should be submitted by the project superintendent to the headquarters of finance agency showing the actual progress on each activity during the appropriate time interval or through the effective date of the report. If the progress on one or more activities or on the entire project is behind schedule, such information should be known early enough to take corrective steps.

For scheduling total workload, individual project is essential. The simplest and most common device for this purpose is the bar chart, a graphic representation of workforce (presented by bars) plotted against time. This simple method is good enough for the implementation of priority projects in the core area of Metropolitan Manila. The declogging or dredging is the main and time-consuming activity. Progress is recommended to be monitored in number of trucks counted in number*day which is easy to monitor. Since the working hour is limited to night time, and additional input of equipment is not easy without incurring huge extra costs, corrective steps to recover the delay is very difficult once the delay would have occurred. Proper and Prior execution of resettlement activities is essential, since on-going project is behind schedule due to delay of securing working area for a contractor. If progress is not achieved due to small production, then re-scheduling is the only reasonable way of correction, since recovery is difficult.

One main construction activity is declogging or dredging (clearing) of the canal. These activities are defined as operation-maintenance activity rather than construction activity. Therefore, specification or definition of declogging is very important. For instance, declogging should be specified as “water level of the box culvert should be kept 30 cm or less and clearing shall be executed to the satisfaction of the Engineer”. In this case, quality control depends on the Engineer’s judgment in accordance with the specification.

## M.4 OPERATION AND MAINTENANCE

### M.4.1 GENERAL

The drainage system in the core area consists of innumerable drainage channels and facilities, namely esteros/outfalls, drainage mains, laterals, road gutters, drainage pumping stations, floodgates, flood wall, etc.

The authorities of MMDA and LGUs are responsible for operation and maintenance of these drainage facilities. This guideline is prepared for the related authorities' engineers to understand O & M works to be able to conduct work smoothly, based on the Study result and some Japanese references. This part is composed of administrative structure, inventory and record for management, and O & M of waterways and pumping stations.

#### (1) Necessity of Operation and Maintenance

Why is operation and maintenance of the drainage facilities of esteros, drainage mains, etc., and drainage pumping stations necessary? The following provide some answers.

- The mission of drainage system is the protection of life and assets of local residents from floods.
- It is required that the drainage system maintain high reliability to achieve its mission.
- Primarily, drainage structures have high reliability in itself and are easy to manage. Secondarily, inspection and maintenance shall be on routine basis to adopt a proactive stance on accident prevention and to keep the facility functioning. In addition, the technical capacity of O & M staff for operation and control shall be sustained. These three functions are mutually involved and higher reliability shall be maintained as shown in *Figure M.4.1*.

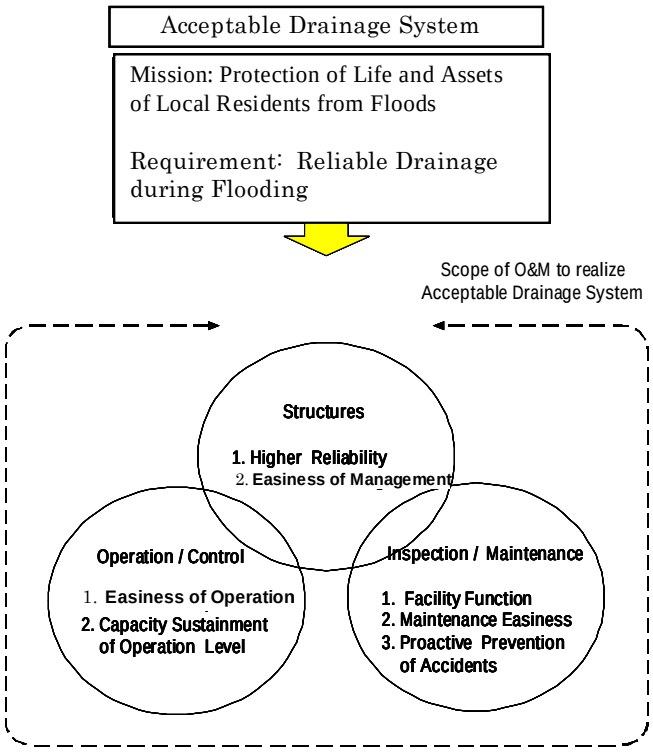



**Figure M.4.1 O & M at A Pumping Station**

### (2) Scope of Operation and Maintenance

Operation and maintenance duties should include various works related to drainage, budgeting, asset management, guidance for drainage connections, monitoring and guidance on stormwater drainage, operation and maintenance of drainage facilities and pumping stations, inventory management, recording, environmental conservation, emergency measures, public relations activities, etc.

### (3) Operation and Maintenance Organization

The following are the main items in this category.

- An organization with sufficient manpower for execution of operation and maintenance duties should be established,
- Use of manpower should be adequately and rationally arranged according to capacity and qualification,
- Authority among the jobs should be clearly defined to establish a responsibility system,
- A system to cope with emergencies should be established, and
- Feasibility of consigning work may be studied if it is considered advantageous in terms of economy and efficiency.

For the effective operation and maintenance activities, the following reorganization of the flood control management services in MMDA is proposed as shown in *Figure M.4.2*.

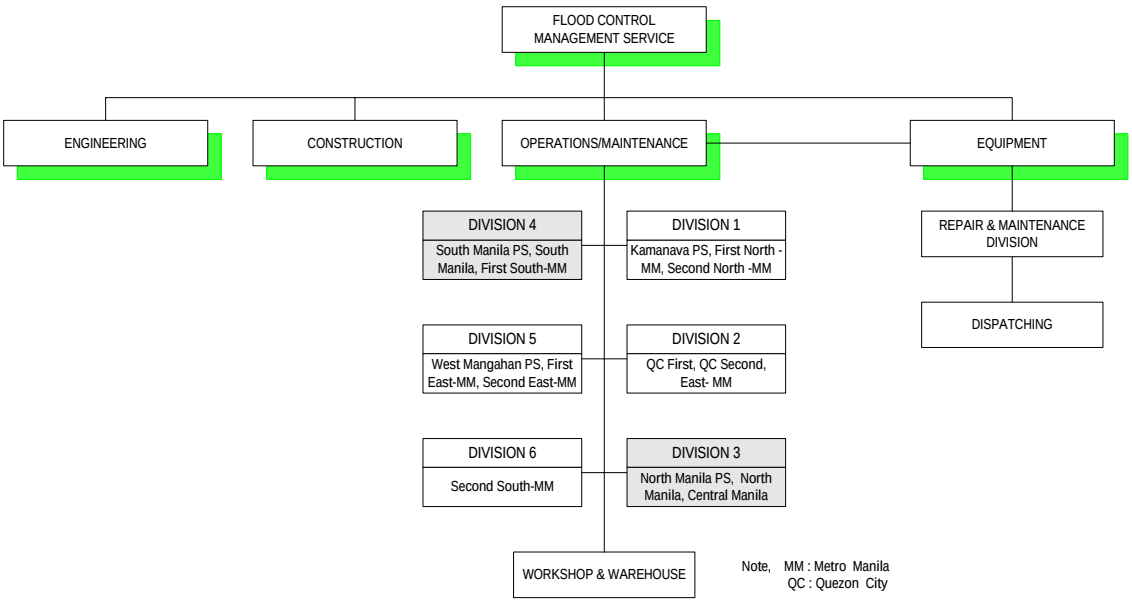



**Figure M.4.2 O & M Organization of FCMS of MMDA**

Manpower current condition and future requirement of the divisions under DWO and pumping stations under PSFO are listed in *Table M.4.1*and *Table M.4.2* from the study result.

**Table M.4.1 Manpower Condition of Districts under DWO**

| Flood Control Operation | Existing | | Requirement | |
|---|---|---|---|---|
| Districts | Operator / Tech. | Laborer | Operator / Tech. | Laborer |
| North Manila | 29 | 31 | 32 | 34 |
| Central Manila | 30 | 34 | 33 | 37 |
| South Manila | 23 | 49 | 26 | 52 |
| First South Metro Manila | 17 | 25 | 18 | 26 |
| Second South Metro Manila | 18 | 31 | 19 | 33 |
| First Quezon City | 10 | 21 | 12 | 23 |
| Second Quezon City | 25 | 29 | 28 | 32 |
| First North Metro Manila | 20 | 38 | 22 | 42 |
| Second North Metro Manila | 29 | 34 | 32 | 38 |
| First East Metro Manila | 18 | 37 | 20 | 39 |
| Second East Metro Manila | 28 | 39 | 30 | 41 |
| Grand Total | 247 | 368 | 272 | 397 |

**Table M.4.2 Manpower Condition of Pumping Stations under PSFO**

| Pumping Stations | Existing | | Requirement | |
|---|---|---|---|---|
| Structure | Operator / Tech. | Laborer | Operator / Tech. | Laborer |
| Major Pumping Stations | | | | |
| Pandacan | 5 | 5 | 5 | 5 |
| Aviles | 9 | 8 | 9 | 9 |
| Quiapo | 9 | 8 | 9 | 9 |
| Valencia | 8 | 8 | 9 | 9 |
| Tripa de Gallina | 15 | 15 | 16 | 16 |
| Sta. Clara | 5 | 4 | 5 | 5 |
| Paco | 9 | 7 | 9 | 9 |
| Libertad | 14 | 11 | 12 | 12 |
| Makati | 5 | 5 | 5 | 5 |
| Binondo | 8 | 9 | 9 | 9 |
| Balete | 7 | 5 | 5 | 5 |
| Escolta | 5 | 7 | 5 | 5 |
| Vitas | 10 | 10 | 12 | 12 |
| Balut | 5 | 2 | 5 | 5 |
| San Andres | 12 | 7 | 12 | 12 |
| Sub-Total | 126 | 111 | 127 | 127 |
| Small Pumping Stations (7) | | | | |
| Sub-Total | 20 | 7 | 32 | 10 |
| Independent Floodgate (1) | | | | |
| Sub-Tptal | 3 | 3 | 5 | |
| Grand Total | 149 | 121 | 164 | 137 |

### (4) Financial Resources for Operation and Maintenance

It is essentially important to secure sufficient budget for daily operation and maintenance activities. The following will be considered.

- The budget should be secured based on the estimation from each operation body in charge of O & M duties and should be allocated without delay.
- From the viewpoint of understanding that the waterways is a common property of the local people, such measures to establish a cooperative organization with LGUs and NPOs shall be considered. Also by attempting public participation, the study and research on labor saving and cost saving measures shall be promoted.

For the budget of O & M under the flood control management service, the Regular Flood Control Maintenance Fund and Quick Response Fund (QRF) as Calamity Fund are available in an emergency case.

This QRF is an urgent financial burden to DPWH. Urgent garbage collection at the pumping stations after serious flooding was occasionally covered by QRF in the past.

*Figure M.4.3* shows the budget preparation steps in MMDA

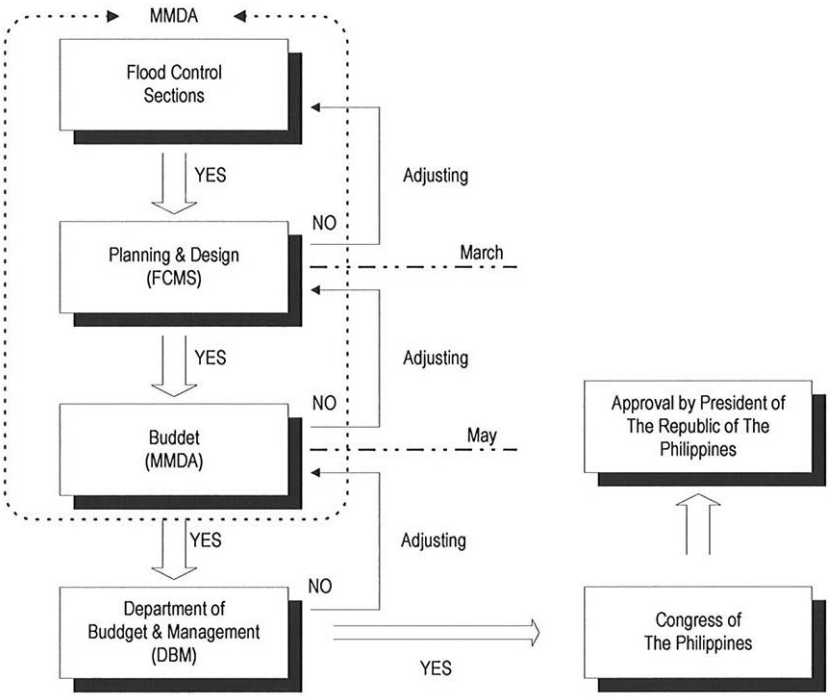



**Figure M.4.3 Budget Preparation Steps of MMDA**

### (5) Training of Operation and Maintenance Personnel

Training should be in diligence to support operation and maintenance activities. The greatest obstacle to personnel training is a distinct job classification system that creates substantial gaps in terms of treatment and duties. It causes failure of conveyance of technologies to other personnel and the retention ratio of staff that has mastered more technologies tends to drop. It is therefore essential to ensure conveyance of technologies equally to all staffs concerned.

### (6) Procurements and Storage of Material and Equipment

The procurement method should be established to adequately secure sufficient budget for the material and equipment, with efforts to develop storage places and inventory control.

Procurement takes time mainly because necessary material and equipment for the pumping station are expensive and custom made without any sales shops in the area. It is therefore essential to consider the use of general-purpose materials and to firstly prepare a list of suppliers and procurement procedures.

Also an important matter is to keep enough budgets with a prior established order, especially for the imported products of spare parts and consumables.

## M.4.2 DRAINAGE SYSTEM INVENTORY AND RECORDS

### (1) Development of Inventory

In order to conduct operation and maintenance activities smoothly and properly, it is important to grasp current condition of objective facilities. For this aspect, the following inventory survey should be made.

- To conduct proper operation and maintenance, the inventory showing current conditions of the drainage system shall be prepared.
- Also, to realize high-level information management with the development of labor saving measures, the structuring of various database system and GIS shall be developed, and then upgrade and communication of information shall be achieved.

### (2) Storages and Updating of Inventories

Main points in this item are as follows, and further information and inventory results obtained newly should be kept or updated in the database developed by the Study and transferred to the counterpart agencies.

- Storage of the stock inventory should be strictly maintained and spares should be provided.
- In case of changes of facilities dimension, the inventories should be corrected immediately and without fail.

### (3) Preparation and Management of Records

It is recommended to prepare and manage the following records so that they can be referred to any time.

- Maintenance and inspection records
- Operation records
- Activity records of dredging, desilting, and declogging (*Table M.4.3*)
- Accident and complaints records

**Table M.4.3 Activity Record Form of Waterway Maintenance in DWO**

Source: DWO, MMDA

| FLOOD CONTROL MANAGEMENT SERVICE | | | |
|---|---|---|---|
| WATERWAY MAINTENACE ACCOMPLISHMENT REPORT | | | |
| DIST. | LOCATION | YEAR 2003 | |
| | | PROGRAMMED LENGTH | ACCOMPLISHED |
| NMFCOD | DREDGING OF OPEN WATERWAYS | | |
| | 1. Estero de Sampaloc (S.H. Loyola -Gov. Forbes)(Gov. Forbes to Est. Aviles) | | |
| | 2. Estero de Calubcob ( Washington-P. Margal to Economia drainage main) | | |
| | 3. Maligaya Creek (R.Papa-Rizal Ave. Extension) | | |
| | 4. Estero de Kabulusan (Antipolo open canal to Kabulusan outfall) | | |
| | 5. Antipolo open canal North & South ( Rizal Ave. to estero de Kabulusan) | | |
| | 6. Estero de Tutuban | | |
| | 7. Estero de Sunog Apog | | |
| | TOTAL LENGTH | | |
| | DESILTING OF DRAINAGE MAINS | | |
| | 1. South Antipolo D.M. ( Maria Clara - Open Canal ) | | |
| | 2. Kabulusan D.M. ( G. Perfecto) (Estero de Kabulusan to Estero dela Reina) | | |
| | 3. Solis Tecson D.M. ( Lico to Estero de Sunog Apog) | | |
| | 4. Kabulusan Sub. Main (Juan Luna to Estero dela Reina) | | |
| | 5.Pacheco Drainage Main ( Zamora to Manila Bay) | | |
| | 6. Zurbaran Drainage Main ( A. Mendoza to Estero de San Lazaro) | | |
| | 7. Lakandula Outfall ( Morga to Manila Bay) | | |
| | TOTAL LENGTH | | |
| | DECLOGGING OF DRAINAGE LATERALS | | |
| | 1. Juan Luna ( Pasig River to City Limit) | | |
| | 2. Rodrigues (Vitas Bridge to H.Lopez) | | |
| | 3. T. Earnshaw ( H. Lopez to Tecson) | | |
| | 4. Solis ( Lico to Estero de Sunog Apog) | | |
| | 5. San Fernado ( J. Luna to Madrid) | | |
| | 6. Dasmarinas (J. Luna to Rosario) | | |
| | 7. Tecson ( J. Luna to Earnshaw) | | |
| | 8. Abad Santos ( C.M. Recto to Rizal Avenue) | | |
| | 9. Moriones ( Dagupan to R 10) | | |
| | 10. N. Antipolo ( J.A. Santos to Solis) | | |
| | 11.Tayuman ( Gov. Forbes to J. Luna ) | | |
| | TOTAL LENGTH | | |

### (4) Utilization of Database Developed by the Study

DATABASE developed during the Study contains a lot of inventory data for the drainage system in the core area, which can give basic information on the drainage system.

The structure of the DATABASE is shown in *Annex M.1*. It is recommended that the storage and updating of inventories and storage of management record utilize the prepared structure of the DATABASE.

## M.4.3 OPERATIONS AND MAINTENANCE OF DRAINAGE STRUCTURES (WATERWAYS)

Drainage and Waterways Operation (DWO), MMDA and City Engineers of LGUs are responsible for operation and maintenance of esteros/outfalls, drainage mains and laterals along local roads in the respective administrative areas.

Any abnormality in the waterways causes accidents directly affecting city activities and civil life, such as inundation of sanitary wastewater and road collapse.

Objectives of operation and maintenance of the waterways are as follows:

- Securing of flow capacity
- Prevention of accident caused by damage to facilities
- Extension of practical service life
- Prevention of damage to the facilities due to other construction works

### (1) Operation and Maintenance Flow of Waterways

Operation and maintenance of waterways involves adequate implementation of maintenance inspections, renewal, and repair along a flow series illustrated in *Figure M.4.4*.

### (2) Maintenance and Inspection

The following are the points to be considered.

- Inspection of waterways (esteros, drainage mains, and laterals) should be made periodically because scouring, sedimentation and trees growing in the waterways shall give a serious effect on flow capacity and drainage facilities.
- Inspection should be made for cross and illegal connections as well as such physical matters as siltation, dumped waste materials and damage of drainage structures.
- Inspection result should be recorded.
- Insufficient discharge capacity should be grasped with attention paid to hydrological survey result and the drainage plans.

### (3) Cleaning and Desilting

- Sediment should be removed as indicated by inspection and surveys.
- In particular, sediment in principal esteros/outfalls, drainage mains should be removed before the rainy season.

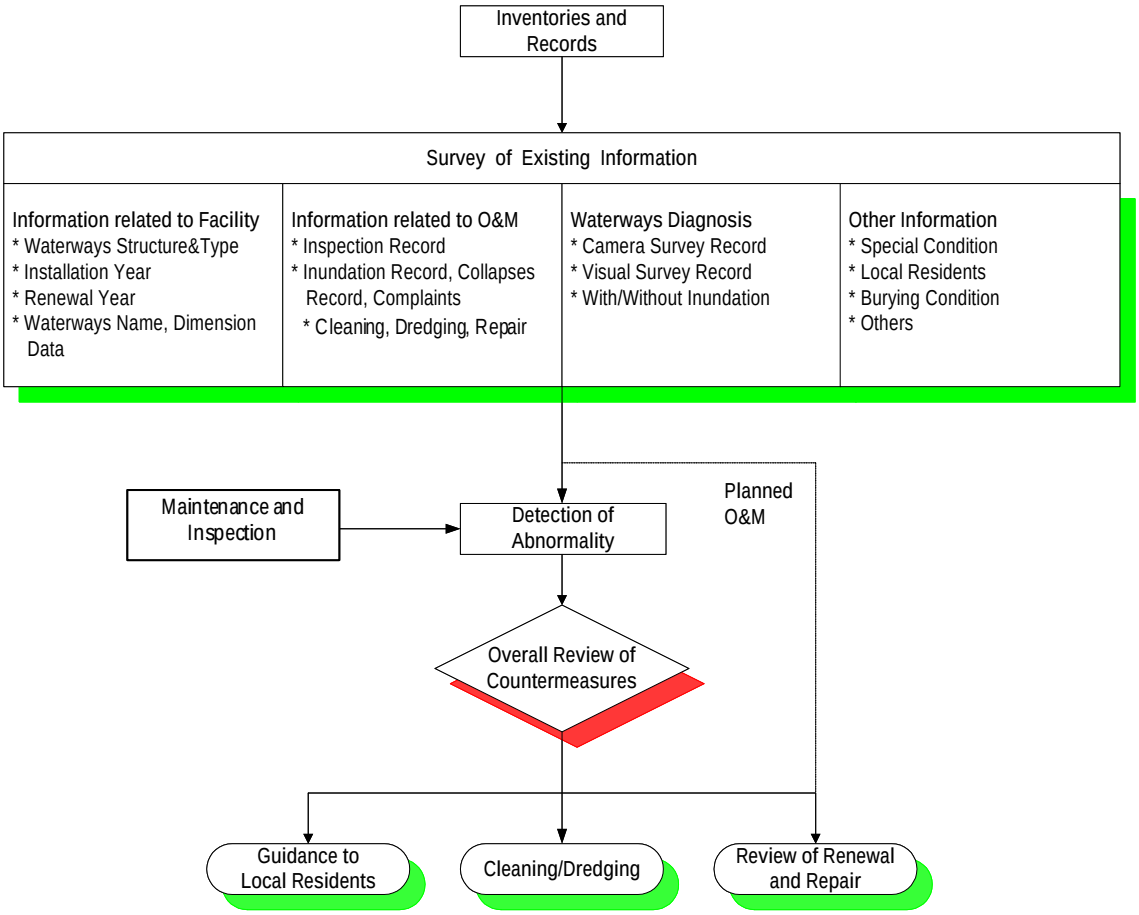



**Figure M.4.4 O & M Flow for Waterways**

Cleaning with water-jetting cleaner requires due attention for severely decayed conduits with insufficient durability. Cleaning may damage these conduits. In case cleaning by use of a machine is difficult, the manual cleaning by workers will be made aided by a truck crane or other equipment.

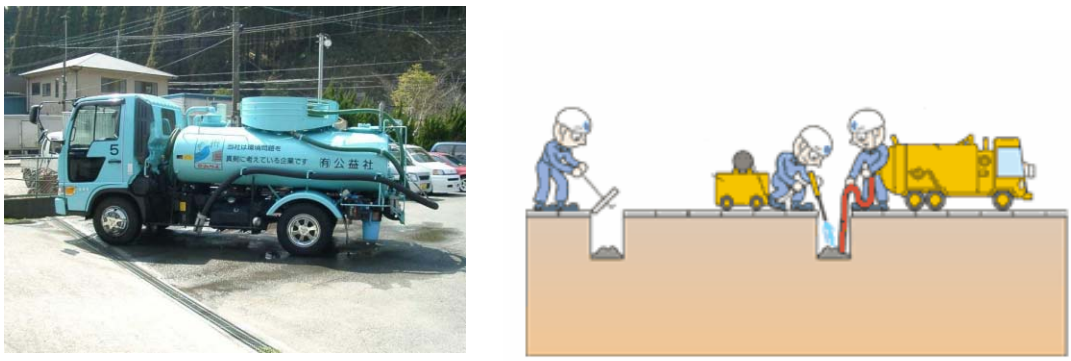


**Figure M.4.5 Cleaning and Desilting Methods by Vacuum Car and Water Jetting**

### (4) Renewal and Repair of Waterways

- Implementation plans for renewal and repair should be established on the basis of inspection, survey, and study.
- The plan should be established taking into account active preventive measures from the viewpoint of life cycle.
- Renewal and repair should be implemented according to the plan.

### (5) Protection and Prevention

- Positive protection/prevention steps should be taken to prevent damage to drainage structures by other construction works in the neighborhood.

### (6) Road Drainage Connection

- The importance of adequate control of road drainage connections should be fully understood by related authorities, consultants and contractors.
- Completion and regular inspections of road drainage connections should be made to prevent cross and illegal connections.

## M.4.4 OPERATIONS AND MAINTENANCE OF THE PUMPING STATIONS

Drainage Pumping Station and Floodgates Operation (PSFO) has been operating four major flood control facilities in Metropolitan Manila: 15 major pumping stations, 8 small pumping stations and 20 relief pumping stations, since 2002, when the control of them was transferred from DPWH.

The basic O & M of pumping stations is “not to stop the function”. O & M should be performed on the basis of a thorough understanding of the characteristics of pump types.

### (1) Flow of Pumping Station O & M

The following are the items to be considered in operation and maintenance works for pumping stations.

- Pumping station O & M consists of adequate implementation of operation control, maintenance and inspection, renewal and repair, etc., along a sequential flow.
- Methods of maintenance shall be decided according to the kind of equipment and its purpose. For a drainage pump system, the following basic policy shall be required since it is used for emergency cases and in stopped condition, and maintenance grade is much different between dry season and rainy season.

(i) In rainy season, reliability of the respective equipment and system shall be established by frequent inspections and repairs to prevent accidental trouble since the drainage pump system must always be ready for start-up and must operate in good condition for long period once started.

(ii) In dry season, function of equipment and system shall be maintained by periodic inspections, and operations failure will mainly occur for lack of oil and water lubrication since deterioration of function due to corrosion, sticking etc. is expected during extended shutdown.

(iii) Just before the rainy season, inspection/repair of deteriorated parts and cleaning/adjustment inside the equipment shall be carried out to recover function of drainage pump system after having been unused for extended periods in dry season.

(iv) Overhaul shall be periodically carried out to replace fast wearing parts and to inspect/repair important components.

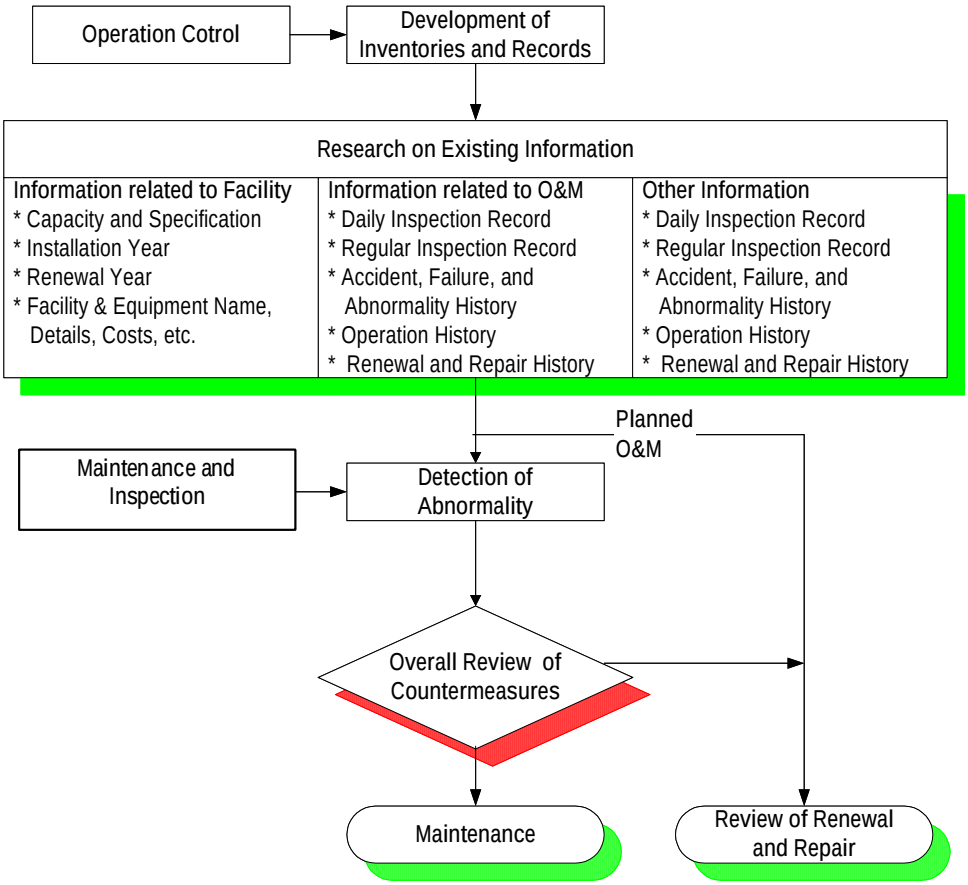



**Figure M.4.6 Flow of Pumping Station O & M Work**


Pandacan


Aviles


Quiapo


Valencia


Tripa de Gallina


Sta. Clara


Paco


Libertad


Makati


Binondo


Balete


Escolta


Vitas


Valut

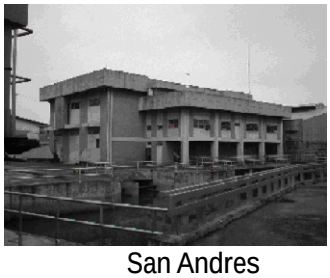

San Andres

**Figure M.4.7 Major Pumping Stations in the Study Area**

### (2) General Matters

The following are general matters for operation and maintenance works for pumping stations.

- Operation manuals and specifications are indispensable for operation control and maintenance of pumps. It is necessary, among other things, to locate these documents for adequate arrangement and filing.
- To prevent wrong operation of equipment, operation manuals should be prepared and ready for reference at any time.
- A counteraction system should be developed for abnormalities and emergencies. The manual for dealing with abnormalities and emergencies should be prepared for the following items, with training provided:
- To ensure efficient operation control of the pumping station and to enable smooth detection of any abnormality, it is indispensable to record operation conditions on a daily and monthly basis.
- It is important to ensure oil supply without fail by promoting recognition of its importance as a basic and elementary step in operation and maintenance of machinery.
- The following preventive measures against corrosion should be considered. For selections of the appropriate measures, local conditions including labor costs, technical capacity, etc., must be considered to minimize O & M costs.
  - Use of corrosion resistant materials
  - Prevention of corrosive materials from being produced and retained
  - Corrosive painting
- Deterioration of operation efficiency is markedly reflected in electric power and fuel consumption, which should be recorded to help increase efficiency.
- To prevent public access to pumping stations and unforeseen accidents, it is essential to fence the area and to lock the gate door to prevent easy admittance.

### (3) Maintenance of Pumps Equipment and Appurtenant Facilities

The following planned maintenance is needed to operate pumping stations smoothly.

- Maintenance work shall be carried out according to the annual plan based on the above classifications prepared by the maintenance leader.
- Main pumps and auxiliary equipment shall be inspected/overhauled basically according to the schedule shown in *Figure M.4.8.*
- Where spare pumps are provided, they should be operated alternately to ensure that each pump is operated at least once a week.
- Regular inspections should be conducted.

| Item | Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Periodical Maintenance | Maintenance Operation (Dry season) | Twice a week | | | | | | | | | | | |
| | Annual Inspection | Once a year | | | | | | | | | | | |
| Operation Maintenance | | | | | | | Every Operation | | | | | | |

**Figure M.4.8 Inspection Schedule for O & M**

Maintenance and overhaul for the following equipment shall be performed according to the maintenance schedule shown in *Annex M.2.*

1 Main Drainage Pump
2 Reduction Gear
3 Discharge Valve
4 Auto Screens
5 Horizontal Belt Conveyor
6 Inclined Belt Conveyor
7 Hopper
8 Floodgate/Gate Leaf
9 Floodgate/Guide Frame
10 Floodgate/Hoisting Equipment
11 Cooling & Sealing Water Pump
12 Vacuum Pump
13 Gear Pump
14 Ventilation Fan
15 Brushless A. C. Generator
16 Overhead Traveling Crane
17 Electrical Equipment

### (4) Renewal and Repair

In renewal and repair of pump equipment, the following will be considered.

- On the basis of the result of inspection and investigation, a renewal and repair implementation plan should be developed.
- To develop the plan, the economic efficiency based on the life cycle viewpoint and countermeasures against obsolete technology should be taken into account.
- Renewal and repair should be implemented according to the well-considered renewal and repair plan.

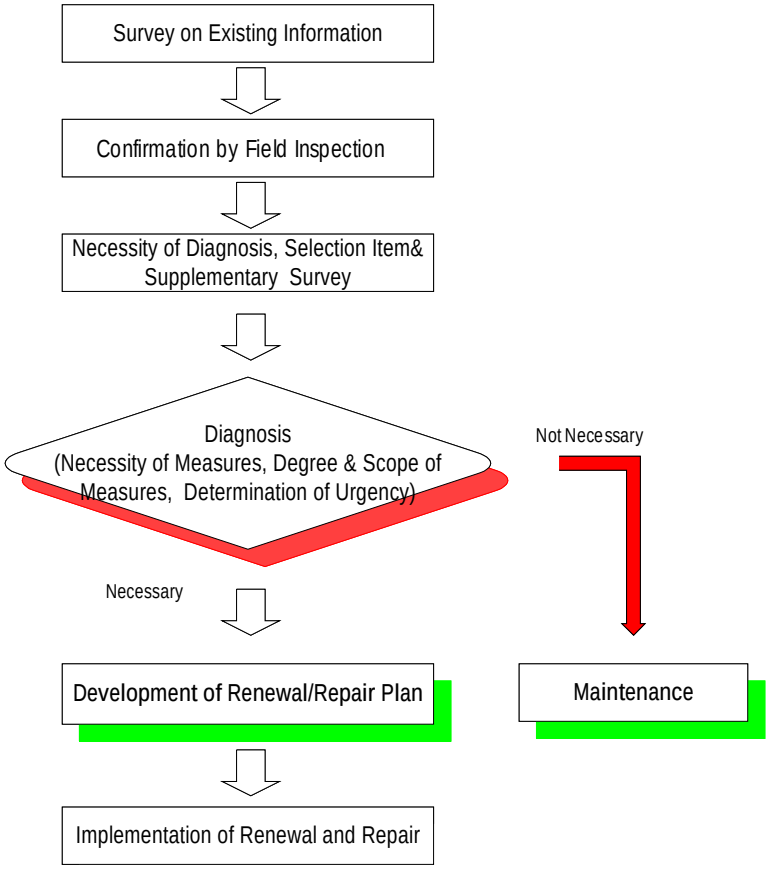



**Figure M.4.9 Pumping Station Renewal and Repair Flow**

Since core sampling of wall concrete and machine assembly/disassembly for the inspection work are costly, it is firstly necessary to collect the existing information based on daily visual and sensory inspection results. Particularly, for locations where field confirmation is necessary (*Table M.4.4*), facility deterioration and treatment conditions should be checked visually to obtain information on the facility for diagnosis.

**Table M.4.4 Check Items for Field Confirmation**

| Type | Essential points | Check items |
|---|---|---|
| Civil construction facilities | Reinforced concrete structures, finish | Cracking<br>Surface deterioration (flaking, rust contamination, embitterment)<br>Water leakage |
| | Auxiliary facilities, fixtures | Faulty installation<br>Surface deterioration (flaking, rust contamination, embitterment) |
| | Water-proof, corrosion proof | Water leakage and damage<br>Repair condition |
| | Loading capacity | Differential settlement, vibration |
| | Deterioration of Treatment, functions | Water stagnation, scum generation, bubbling, odor |
| Mechanical and electric equipment | Deterioration condition | Wear, loss, deformation, clogging, (water, oil, gas) leakage, noise,<br>and vibration<br>Local heating, faulty cooling<br>Corrosion, rusting, deterioration, dewing, oxidation, fouling |
| | Functional deterioration | Understanding of the operability, safety, maintainability, automation, remote control, and operation efficiency, and confirmation of equipment failure |

Based on the survey on existing information and field confirmation, the existing condition of each facility and equipment should be judged by going through a list of items shown in *Table M.4.5*, to check whether there is abnormality. And then the facility and equipment to be diagnosed should be identified.

Judgment should be made on whether field confirmation and existing information are sufficient for diagnosis, for determining the necessity of supplementary investigation.

**Table M.4.5 Checks Items for Abnormality or No-abnormality Judgment**

| Location | Check items |
|---|---|
| Structure | Cracking, surface deterioration (rust contamination, flaking, embitterment), water leakage, deflection, differential settlement, repair history |
| Auxiliary equipment | Faulty installation, rusting, corrosion, surface deterioration, repair history |
| Corrosion prevention | Damage, water leakage, repair history |
| Finish | Cracking, surface deterioration, flaking, bulging, floating |
| Water proof | Damage, water leakage, repair history |
| Fixtures, metals | Faulty installation, rusting, corrosion, surface deterioration, repair history |
| Treatment functions | Overload, leakage, odor, bubbles, inability to discharge |
| Mechanical equipment (automatic screening equipment, belt conveyor, gate, pump diesel engine, blower, etc.) | With/without repair and fault histories; with/without performance deterioration; adequacy of operation, and others (operation stop, looseness, abnormal sound, offensive odor, slackness, deformation, fissure, discoloration, fouling, vibration, noise, water leakage, oil leakage, gas leakage, wear, damage, corrosion, rusting) |
| Electrical equipment (extra-high, voltage breaker, generator, battery panel, central monitoring panel, etc.) | |

### (5) Countermeasures against Faults

In case of fault of pump equipment and appurtenant facilities, the following will be considered.

- Efforts should be made to ensure prompt and appropriate countermeasures referring to experienced fault list and fault causes in the past.
- The pumping station staff should be independently able to recover/restart operations after an accident.

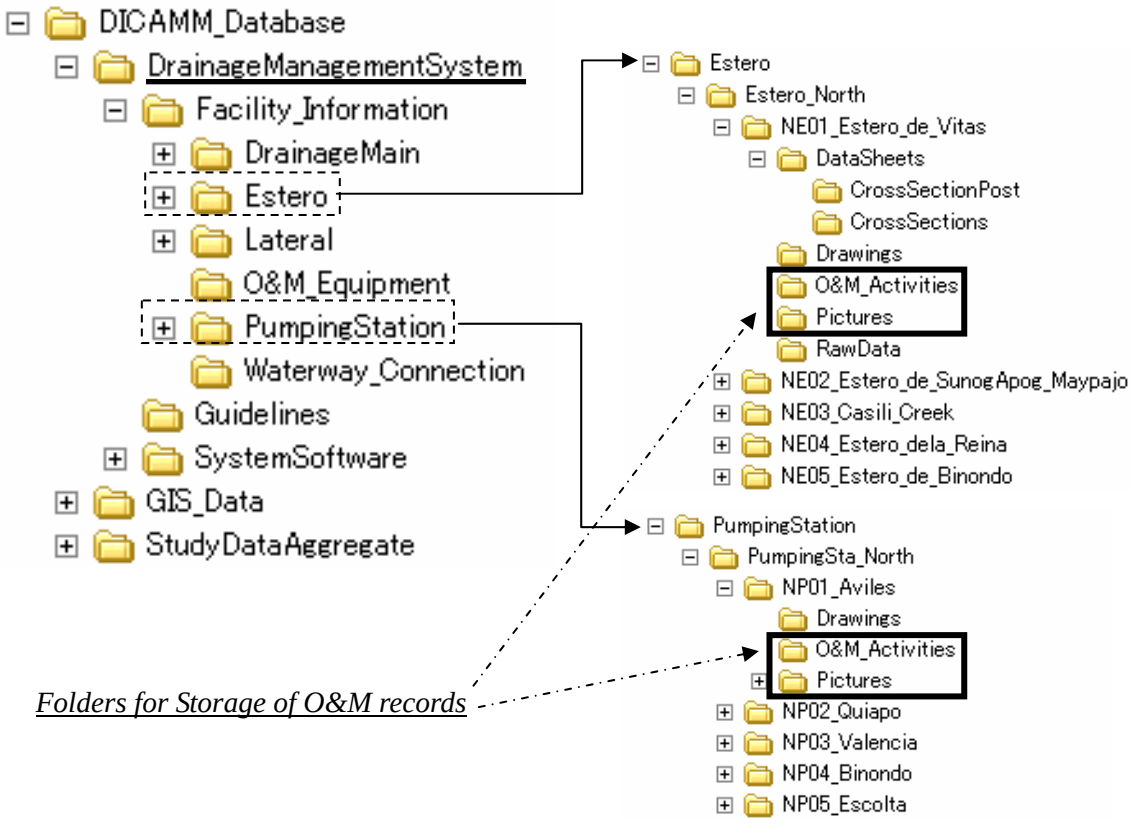
# *ANNEX M.1*

# *DATABASE STRUCTURES*

## ANNEX M.1: DATABASE STRUCTURES

Records of daily, monthly and yearly O&M activities should be kept. Folders for storage of O&M records are prepared in "DrainageManagementSystem" folder of the database as shown in the following Figure.

Various kinds of records of O&M should be made and kept as described in "O&M part of guidelines." At this moment, detailed database structure for folders of "O&M Activities" are undefined. Eacn agencies/users can design own and useful sturucture for keeping data. However, contents and structures should be discussed among all the concerned agencies periodically and should be modified so as to be easy-to-use and efficient.




**Sample of Folders for O&M Records**

# *ANNEX M.2*

## *MAINTENANCE AND OVERHAUL SCHEDULE OF PUMPING STATION EQUIPMENT*

## ANNEX M.2: MAINTENANCE AND OVERHAUL SCHEDULE OF PUMPING STATION EQUIPMENT

Equipment: 1. Main Drainage Pump

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1 | Discharge pressure | Take reading | 1/D | | |
| 2 | Vibration | By touch<br>By measuring | 1/D<br>1/Y | | |
| 3 | Noise | Visual check | 1/D | | |
| 4 | Suction and discharge Water levels | Scale | 1/D | | |
| 5 | Oil leakage | Check oil tank level | 1/D | | Only for vertical Shaft pump |
| 6 | Water leakage from Gland packing | Visual check | 1/D | | Only for horizontal Shaft pump |
| 7 | Temperature of Bearing and lubricant | Take reading | 1/D | | |
| 8 | Maintenance operation | Check item 1 to 7 | 2/W | | |
| 9 | Refasten lock bolts on Fixed parts | Check looseness | 1/6M | | |
| 10 | Inspection of rotary elements | Check centering | 1/Y | | |
| 11. | Protective devices such as Temperature switch, level Switch etc. | Confirm actuation | 1/Y | | |
| 12. | Overhaul | | 1/3Y | | Check mainly wear Corrosion and coating. |

Equipment: 2. Reduction Gear

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Vibration | By touch<br>By measuring device | 1/D<br>1/Y | | |
| 2. | Noise | Visual check | 1/D | | |
| 3 | Bearing temperature | Check for rapid Temperature rise | 1/D | | |
| 4 | Lubricating oil temperature | Check for rapid Temperature rise | 1/D | | |
| 5 | Lubricating oil pressure | Check for rapid Pressure rise | 1/D | | |
| 6 | Maintenance operation | Check items 1 to 5 | 2/W | | |
| 7 | Lubricating oil filter | Clean | 1/M | | |
| 8 | Lubricating oil | Inspection and replenish<br>Renew | 1/M<br>1/Y | | |
| 9 | Refasten lock bolts on fixed components | Check looseness | 1/6M | | |
| 10. | Protective device such as Pressure switch, temperature, switch etc. | Confirm actuation | 1/Y | | |
| 11. | Oil cooler | Disassemble and Clean | 1/Y | | |
| 12. | Gear teeth | Check for abnormal Wear through Hand hole | 1/Y | | |
| 13. | Overhaul | | 1/5Y | | To be overhauled as required. |

Equipment: 3. Discharge Valve

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Outside appearance | Visual check | 1/D | | |
| 2. | Maintenance operation | Visual, By touch | 1/6M | No vibration And noise | |
| 3. | Stem (Dust, Foreign material, Lubrication) | Visual | 1/6M | | Apply grease |
| 4. | Actuator | Replenish grease | 1/Y | | |
| 5. | Limit switch, Torque switch | Check function By actual operation | 1/Y | | |
| 6. | Overhaul as required | Inspection of actuator. Change of grease Disassembly of valve Body. | 1/3-5/Y | | |

Equipment: 4. Auto Screens

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Deformation of rake | Visual check | 1/D | | |
| 2. | Deformation of rake chain | do | 1/D | | |
| 3. | Current | Measuring instrument | 1/Y | | |
| 4. | Vibration and noise | Visual check Hearing check | 1/D | | |
| 5. | Lubricant for transmission, Drive chain and bearing | Visual check | 1/D | | |
| 6. | Leakage from transmission And hydro coupling | do | 1/D | | |
| 7. | Proximity switch for cleanliness | No metallic dust on Contacts | 1/M | | |
| 8. | Refasten bolts and nuts, (especially driving and rotating parts) | Check looseness | 1/6M | | |
| 9. | Inspection of flexible coupling | Check centering | 1/Y | Not more than 5/100 mm at flexible coupling | |
| 10. | Overhaul | According to Overhaul Manual | 1/3 – 5Y | | |

Equipment: 5. Horizontal Belt Conveyor

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Belt position | Visual check | 1/D | | |
| 2. | Damage to belt Conveyor | Do | 1/D | | |
| 3. | Current | Measuring instrument | 1/Y | | |
| 4. | Vibration and noise | Visual check Hearing check | 1/D | | |
| 5. | Lubricant for transmission, Drive chain and bearing | Visual check | 1/D | | |
| 6. | Oil leakage from Transmission | Do | 1/D | | |
| 7. | Refasten bolts and nuts, (especially driving and rotating parts) | Check looseness | 1/6M | | |
| 8. | Overhaul | According to Overhaul Manual | 1/3 – 5Y | | |

Equipment: 6. Inclined Belt Conveyor

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Belt position | Visual check | 1/D | | |
| 2. | Damage to belt | do | 1/D | | |
| 3. | Current | Measuring instrument | 1/Y | | |
| 4. | Vibration and noise | Visual check<br>Hearing check | 1/D | | |
| 5. | Lubricant for Bearing | Visual check | 1/D | | |
| 6. | Oil leakage from motor Pulley | do | 1/D | | |
| 7. | Refasten bolts and nuts,(especially driving and rotating parts) | Check looseness | 1/6M | | |
| 8. | Overhaul | According to Overhaul Manual | 1/3 – 5Y | | |

Equipment: 7. Hopper

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Deformation of gate | Visual check | 1/D | | |
| 2. | Gate opening and Closing position | do | 1/D | | |
| 3. | Current | Measuring instrument | 1/Y | | |
| 4. | Vibration and noise | Visual check<br>Hearing check | 1/D | | |
| 5. | Lubricant for Bearing | Visual check | 1/D | | |
| 6. | Oil leakage from power Cylinder | do | 1/D | | |
| 7. | Refasten bolts and nuts,(especially rotating parts) | Check looseness | 1/6M | | |
| 8. | Overhaul | According to Overhaul Manual | 1/3 – 5Y | | |

Equipment: 8. Floodgate/Gate Leaf

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Condition<br>(Entire Gate Leaf) | Visual | 1/M | No driftwood,<br>Dirt, or mud | |
| 2. | Entire Gate Leaf<br>(Vibration, noise) | Visual and hearing | 1/D | No vibration and no abnormal noise<br>Are observed | |
| 3. | Entire Gate Leaf<br>(Unbalanced lifting) | Visual and instrument | 1/M | Proper<br>Open and close Less than 20 mm | |
| 4. | Bolts and nuts<br>(Tightness, Falling) | Visual and test hammer | 1/Y | No looseness<br>And no falling | |
| 5. | Welded Portion<br>(Cracks) | Visual | 1/Y | No cracks | |
| 6. | Painting (Rust) | Visual | 1/Y | No rust | |
| 7. | Main roller, main roller shaft (Damage wear) | Visual | 1/6M | | |

Equipment: 9. Floodgate/Guide Frame

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Condition<br>(Entire Guide Frame) | Visual | 1/M | No driftwood,<br>Dirt, or mud | |
| 2. | Entire Guide Frame<br>(Damage, Deformation, Wear) | Visual | 1/6M | No damage, no wear and Proper operation | |
| 3. | Watertight Plate<br>(Damage) | Visual | 1/Y | No damage | |
| 4. | Bolts and nuts<br>(Tightness, Falling) | Visual and test hammer | 1/Y | No looseness | |
| 5. | Welded Portion<br>(Cracks) | Visual | 1/Y | No cracks | |
| 6. | Painting<br>(Rust) | Visual | 1/Y | No rust | |

Equipment: 10. Floodgate/Hoisting Equipment

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Condition (Entire Hoisting Equipment) | Visual | 1/M | No dirt or<br>Foreign<br>material | |
| 2. | Cycle speed reducer motor (Current, voltage, temperature, noise and vibration)<br><br>(Insulation Resistance) | Ammete<br><br>Normal<br>Voltmeter<br><br>Visual, By touch<br>Insulation resistance tester | 1/D<br><br>1/Y | Rated current<br>Or less<br><br>Rated voltage<br>+ 10%<br>Normal<br>1MΩ or more | |
| 3. | Changeover equipment (Operation, Q'ty, temperature noise and vibration | Test run<br><br>Oil gauge<br>Visual, By touch | 1/D | Smooth<br>Changeover<br><br>Marked oil<br>Level or more<br>Normal | |
| 4. | Worm Gear Box (Q'ty, temperature, noise and vibration) | Oil Gauge<br><br>Visual, By touch | 1/6M<br><br>1/D | Marked oil<br>Level or more<br><br>Normal | |
| 5. | Free Gear (Gear tooth broken, damage noise, vibration and lubrication | Visual, By hearing | 1/6M | No damage,<br>Nothing broken<br><br>Normal<br>Sufficient<br>For extending<br>Over teeth | |
| 6. | Motor Cylinder<br>(Operation, noise and vibration)<br><br>(Insulation resistance) | Visual, By touch<br><br>Insulation resistance<br>Tester | 1/D<br><br>1/Y | | |
| 7. | Travel Indicator<br>(Appearance operation) | Visual | 1/6M | | |
| 8. | Stop Equipment<br>(Operation) | Visual | 1/6M | | |

| | | | | | |
|---|---|---|---|---|---|
| 9. | Coupling, Shaft (Damage, deformation, bolt damage, looseness, rubber, wear) | Visual | 1/M | | |
| 10. | Sheave, Shaft (Appearance, Cleaning Damage, Wear) | Visual | 1/M | | |
| 11. | Ball Bearing (Appearance, Damaged, Operation, Grease) | Visual | 1/D | | |
| 12. | Wire Rope (Dust, Foreign material, lubrication) | Visual | 1/D | No foreign material on rope. Sticky on surface. | |
| | (Wear)<br>(Element wire cut)<br>(Deformation, rust) | By vernier calipers<br>Visual<br>Visual | 1/Y | 7% of nominal dia. Or less. 10% of total element wire or less. No kinks, rust or breaks | |
| 13. | Rope End (Loose lock nut, Rope length) | With spanner, visual<br>Visual | 1/M | No looseness<br>No unbalance between both ropes at lower limit | |
| 14 | Limit switch (Manual/Electrical change over switch) (Open, close limit switch) | Operation | 1/M | Confirm firm actuation | |
| | (Emergency limit switch)<br>(Motor cylinder switch) | Operation | 1/M | Confirm Actuation by Hand.<br>Confirm firm actuation | |
| 15. | Manual operation (Appearance)<br>(Operation) | Visual<br>Operation | 1/M<br>1/Y | No foreign Material<br>Normal Operation by wheel | |
| 16. | Bolts, Nuts (Looseness, Falling) | Visual, Test hammer | 1/M | No looseness,<br>No falling | |
| 17. | Painting (Rust) | Visual | 1/Y | No rust | |

Equipment: 11. Cooling & Sealing Water Pump

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Discharge pressure | | 1/D | | |
| 2. | Current, voltage, frequency | | 1/D | | |
| 3. | Vibration and noise | Visual check | 1/D | | |
| 4. | Piping system leakage | do | 1/D | | |
| 5. | Stuffing box leakage | do | 1/D | | |
| 6. | Refasten lock bolts on Fixed components | Check looseness | 1/6M | | |
| 7. | Inspection of rotary elements | Check centering | 1/Y | Not more than 5/500 mm | |
| 8. | Overhaul | According to overhaul Manual | 1/3 – 5Y | | |

Equipment: 12. Vacuum Pump

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Vacuum pressure | | 1/D | | |
| 2. | Current, voltage, frequency | | 1/D | | |
| 3. | Vibration and noise | Visual check | 1/D | | |
| 4. | Piping system leakage | do | 1/D | | |
| 5. | Stuffing box leakage | do | 1/D | | |
| 6. | Refasten lock bolts on fixed components | Check looseness | 1/6M | | |
| 7. | Inspection of rotary elements | Check centering | 1/Y | Not more than 5/ 100 mm | |
| 8. | Overhaul | According to overhaul Manual | 1/3 – 5Y | | |

Equipment: 13. Gear Pump

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Discharge pressure | | 1/D | | |
| 2. | Current, voltage, frequency | | 1/D | | |
| 3. | Vibration and noise | Visual check | 1/D | | |
| 4. | Piping system leakage | do | 1/D | | |
| 5. | Stuffing box leakage | do | 1/D | | |
| 6. | Refasten lock bolts on fixed components | Check looseness | 1/6M | | |
| 7. | Inspection of rotary elements | Check centering | 1/Y | Not more than 5/500 mm | |
| 8. | Overhaul | According to overhaul Manual | 1/3 – 5Y | | |

Equipment: 14. Ventilating Fan

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Current, voltage, frequency | | 1/D | | |
| 2. | Vibration and noise | Visual check | 1/D | | |
| 3. | Refasten lock bolts on fixed | Check looseness | 1/6M | | |
| 4. | Inspection of rotary elements | Check centering Adjust V-bel tightening | 1/Y | | |
| 5. | Overhaul | According to overhaul Manual | 1/3 – 5Y | | |

Equipment: 15. Brushless A. C. Generator

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Lubrication | Check oil level amount and color | 1/D | | |
| 2. | Oil Ring | Check smoothness of rotation | 1/D | | |
| 3. | Bearing noise | Check for abnormal noise | 1/D | | |
| 4. | Temperature rises | Check for rapid temperature rise | 1/D | | |
| 5. | Abnormal noise and smell | Stop operation and check when noise or smell is considered abnormal | 1/D | | |
| 6. | Vibrations | Check for abnormal vibration of bearings, etc. | 1/D | | |
| 7. | Electrical inspection | Record voltages, currents, | 1/D | | |

| | | | | | |
|---|---|---|---|---|---|
| | | frequencies, and power (KW) | | | |
| 8. | Electrical Circuit grounding | Check with grounding lamp | 1/D | | |
| 9 | Insulation resistance measurement | Measure for stator And rotor | 1/M | More than 1MΩ | |
| 10 | Inspection of tightened components | Retighten. Be especially Careful of terminals. | 1/M | | |
| 11. | Lubricating oil change and addition | When lubricating oil is too dirty, replace. Add grease at set Periods. | 1/6M | | |
| 12. | Generator cleaning inside | Clean with air and remove accumulated oil with perchloroethylene etc. | 1/6M | | |
| 13. | Wiring inspection | Check insulation and Check for damage | 1/6M | | |
| 14. | Electrical connection | Check for loose Electrical connections And inspects for cracked, Frayed or oil soaked Insulation. Tighten or Replace as necessary. | 1/6M | | |
| 15. | Starter panel | Check all wires and cables for frayed or damaged insulation. Check all connections for tightness. Remove cover and remove dirt and dust by low pressure moisture-free compressed air or with a clean cloth. | 1/6M | | |

Equipment: 16. Overhead Traveling Crane

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Noise and vibration | Visual, by touch | 1/D | Normal | |
| 2. | Insulation resistance | Megger tester | 1/Y | 1M or more | |
| 3. | Lubrication | Visual | 1/Y | | |
| 4. | Limit switch | Check function by actual operation | 1/Y | | |
| 5. | Wear of wire rope | Visual | 1/Y | 7% of original size | |
| 6. | Overhaul as required | According to Overhaul Manual | 1/3 – 5Y | | |

Equipment: 17. Electrical Equipment

| Item | Check Item | Method | Interval | Criteria | Remarks |
|---|---|---|---|---|---|
| 1. | Panel door security | Visual check | 1/D | | |
| 2. | Indicating lamp | Lamp test. | 1/D | | |
| 3. | Incoming power voltage | Visual check | 1/D | | |
| 4. | Abnormal noise, Vibration and smell | Visual check. | 1/D | | |
| 5. | Rust or corrosion on panel | Visual check | 1/6M | | |
| 6. | Electrical parts | Remove dirt And dust | 1/6M | | |
| 7. | Refasten lock bolts on Fixed parts | Check looseness | 1/6M | | |
| 8. | Insulation resistance Of panel, wire and motor | By 500V megger | 1/Y | Not less than 5 M Ω | |
| 9. | Each part | Check function | 1/Y | | |
| 10. | Protective relay | Check operation And set point | 1/Y | | |

# N. WORKSHOP/SEMINAR

In the course of the Study, the following workshops, seminars and technology transfer meetings were held.

Details of content, result and participants list of each workshop and seminar are attached in this chapter.

***Public Participation Workshop***

Main Target Group: Concerned Government and Non-Government Organizations

| No. | Date | Time | Venue | Number of Participants | Contents |
|---|---|---|---|---|---|
| 1 | March 10, 2004 | 9:00 - 17:30 | Philippine Trade Training Center | 66 | - To understand and appreciate the Study<br>- To identify the concerns, problems/issues on drainage |
| 2 | May 21, 2004 | 8:00 - 17:00 | Philippine Trade Training Center | 65 | - To discuss the present state of the structural, non-structural and supporting measures for drainage improvement<br>- To propose the structural, non-structural, and supporting measures |
| 3 | July 22, 2004 | 8:00 - 17:00 | Philippine Trade Training Center | 57 | - To analyze the major factors that influence the successful implementation of the project using S.W.O.T. analysis |
| 4 | October 1, 2004 | 8:00 - 17:00 | Traders Hotel, Manila | 72 | - To develop and prepare the LGU Operation/Maintenance guidelines for priority projects |
| 5 | January 19, 2005 | 8:00 - 17:00 | Traders Hotel, Manila | 49 | - To classify the O&M as activities for pre-construction, construction and operation<br>- To identify the responsible agency and its specific role during each stage<br>- To prepare the guidelines for the monitoring of the O&M |
| 6 | March 2, 2005 | 8:00 - 17:00 | Traders Hotel, Manila | 106 | - To elicit reactions and comments about the final result of the Study<br>- To discuss how the proposed project from the Study could be incorporated into the LGU's Development Plan. |

***Barangay Cluster Workshop***

Main Target Group: Barangays Affected by the Project

| No. | Date | Time | Venue | Number of Participants | Contents |
|---|---|---|---|---|---|
| 1 | July 23, 2004 | 8:00 - 17:00 | Bayview Park Hotel, Manila | 43 | - To analyze the major factors that influence the successful implementation of the project using S.W.O.T. analysis |
| 2 | October 22, 2004 | 8:00 - 17:00 | Traders Hotel, Manila | 166 | - To develop and prepare the Barangay Operation/Maintenance guidelines for priority projects |
| 3 | January 20, 2005 | 8:00 - 17:00 | Traders Hotel, Manila | 109 | - To classify the O&M as activities for pre-construction, construction and operation<br>- To identify the responsible agency and its specific role during each stage<br>- To prepare the guidelines for the monitoring of the O&M |

***Technical Seminar***

Main Target Group: Concerned Government and Non-Government Organizations

| No. | Date | Time | Venue | Number of Participants | Contents |
|---|---|---|---|---|---|
| 1 | May 19, 2004 | 8:00 - 17:00 | Bayview Park Hotel, Manila | 53 | - Study Approach /Methodology and Finding and Observation<br>・ Drainage System Assessment<br>・ Hydrological/Hydraulic Analysis<br>・ Drainage Planning<br>・ Solid Waste Management |
| 2 | January 18, 2005 | 8:00 - 17:00 | Traders Hotel, Manila | 47 | - Drainage and Solid Waste Management in Japan<br>- Result and Output of the Study<br>・ Database<br>・ Existing Condition of Drainage System<br>・ Drainage Improvement Plan |

***Technology Transfer Meeting***

Main Target Group: Counterpart Team

| No. | Date | Time | Title | Presenter |
|---|---|---|---|---|
| 1 | March 5, 2004 | 15:00 - 17:00 | Basic Study Framework | Mr. TANAKA |
| 2 | March 12, 2004 | 15:00 - 17:00 | Study Framework for a Participatory Approach | Dr. Roquia<br>Ms. YAMADA |
| 3 | March 19, 2004 | 15:00 - 17:00 | Framework of Drainage Planning | Mr. NOBE |
| 4 | March 26, 2004 | 15:00 - 17:00 | Framework of Hydrological and Hydraulic Modeling<br>Garbage Survey in Manila | Mr. Sabbir<br>Mr. ISHII |
| 5 | April 2, 2004 | 15:00 - 17:00 | Database Development | Mr. MORITA |
| 6 | June 4, 2004 | 15:00 - 17:00 | Countermeasures in Master Plan Study | Mr. KAMEYAMA |
| 7 | June 18, 2004 | 15:00 - 17:00 | Overall Status and Progress of Activities<br>Hydraulics Preliminary Drainage Plans<br>Overall Status & Progress of Activities<br>Status of Experimental Research<br>Status of Resettlement Study<br>Hydrological Analysis<br>Database Management<br>Solid Management | Mr. NOBE<br>Mr. KITAMURA<br>Mr. Akinori SATO<br>Dr. Roquia<br>Ms. YAMADA<br>Mr. Atillano<br>Ms. Parubrub<br>Mr. Manoos |
| 8 | July 9, 2004 | 15:00 - 17:00 | Construction Planning/Cost Estimation<br>Drainage Facility Design | Mr. SAIGA<br>Mr. NAGATA |

| No. | Date | Time | Title | Presenter |
|---|---|---|---|---|
| 9 | July 16, 2004 | 15:00 - 17:00 | Hydrological & Hydraulic Modeling | Mr. Sabbir |
| 10 | Oct. 8, 2004 | 15:00 - 17:00 | Explanation of Interim Report | Mt. TANAKA |
| 11 | Nov. 12, 2004 | 15:00 - 17:00 | O & M Guidelines<br>Database for the Study<br>Results of Brgy. Workshop | Mr. KAMEYAMA<br>Mr. MORITA<br>Dr. Roquia |
| 12 | Nov. 19, 2004 | 15:00 - 17:00 | O & M Guidelines<br>Database for the Study | Mr. NOBE<br>Mr. MORITA |
| 13 | Nov. 26, 2004 | 15:00 - 17:00 | Resettlement of Action Plan for Priority Project/Present Situation of Resettlement | Ms. YAMADA |
| 14 | Dec. 10, 2004 | 15:00 - 17:00 | Economic Benefits | Mr. Shingo SATO |

# Public Participation Workshop-1

Date: 9:00- 17:30 March 10, 2004
Place: Philippine Trade Training Center

# WORKSHOP FOR THE ENHANCEMENT OF PUBLIC PARTICIPATION IN THE DRAINAGE IMPROVEMENT OF METRO MANILA

The workshop was held March 10, 2004 at the Philippine Trade Training Center Building, DTI 2/F Room. Invited participants attended these from the five cities (Manila, Pasay, Caloocan, Makati, Quezon) and one municipality (Taguig) of the core area. Of the 66 invited participants from the Local Government Units, Government Agencies and Non-government Agencies, only 37 or 64.9% of invited LGU participants attended, followed by 3 (5%) NGOs, and 2 (3%) from the Government Agencies. This shows that 50 or 84% of the total invited participants attended. The JICA Study Team and the DPWH counterparts were present to facilitate the workshop.

The first part of the workshop started with Ms. Aquilina T. Decilos giving the opening invocations followed by Ms. Jennie V. Almeda leading the National Anthem. Mr. Jesus O. Averilla introduced the participants with Engr. Mario G. Navarro, Project Manager II for the Major Flood Control Project Cluster I giving the welcome remarks. Dr. Felixberto Roquia, Jr., JICA consultant for Social presented and explained the objectives of the workshop. He then continued to introduce Mr. Hajime Tanaka, the JICA Project Team Leader. Mr. Tanaka presented and discussed the project using the power point presentation. Dr. Roquia then followed with an explanation of the workshop mechanics, which ended the morning session.

The afternoon session started with a warm-up exercise to prepare the participants for the workshop proper. The workshop started with the participants grouping themselves by cities. Each of the city groupings was assigned DPWH counterparts to facilitate each group in their discussion of the concerns, problems/issues, and recommendations. The participants coming from the academe and NGOs chose the group they wanted to join. The communication situation used the nominal group round table as the members dealt with the specific concerns of the drainage / esteros and flooding. The group members arranged themselves in a circular or semi-circular pattern. They shared information from their experience and database about the state of the drainage/esteros and flooding of their city. Group interaction was informal and members contributed as they saw fit, identifying the concerns, problems/issues, and recommendations. Results of the activity were written in color-coded meta-cards and stuck in a matrix form and presented/shared to the whole group in a plenary session.

Procedures:

**1. Workshop objectives**

- To understand and appreciate the project.
- To identify the concerns, problems/issues on drainage caused by clogged drainage and waterways (esteros), and
- To suggest recommendations to mitigate these problems.

**2. Project presentation**

**3. Workshop Mechanics**

- Discuss with the members the concerns of the city related to drainage and its consequential effects (people & institutions). Likewise, give your recommendations to mitigate the problems/issues.Write the problems/ issues you perceive related to the concerns on the Meta cards, and stick them on the column under the identified concern. Also do this too under the column for recommendations (mitigation measures).

- Review the work your group has done and rearrange the problems/issues and the recommendations according to priority.After doing this, finalize the work by rewriting it on brown paper or acetate for presentation.

- Identify the person who is going to present the result of the discussion in the plenary session.

- All sign the presentation

**4. Results of the workshop**

**QUEZON CITY**

| CONCERNS | PROBLEMS / ISSUES | RECOMMENDATION |
|---|---|---|
| 1. Cleaning and clearing of all waterways including lateral drainage.<br>2. Garbage along waterways<br>3. Involvement in the community<br>4. Value Inculcation<br>5. Support of community leaders<br>6. Waste management and informal settlers<br>7. Flood prone areas<br>8. Education of stakeholders<br>9. Choice of priorities in addressing the problem<br>10. Proper engineering analysis & studies<br>11. Funding<br>12. Information dissemination<br>13. Strictly enforcement of rules & laws | 1. Waterways utilized as dumping areas of waste.<br>2. Heavily silted waterways<br>3. Very weak enforcement of environmental laws<br>4. Poor disposal of garbage (Collection & dumping) to clear the waterways and streets.<br>5. Unawareness / ignorance of the community<br>6. Funding<br>7. Perennial flood problem on both low & elevated areas of the city<br>8. Dumping garbage along waterways<br>9. Malpractice of waste disposal<br>10. Lack of awareness / information of the project.<br>11. Lack of concern with regards to proper waste disposal. | 1. Unified approach in the application of solution<br>2. Political will<br>3. True work activity meaning dedication<br>4. Information and education campaign<br>5. Public participation of awareness<br>6. Educate people on proper waste disposal<br>7. Information dissemination training<br>8. Community mobilization<br>9. Networking<br>10. Incentives/ Rewards<br>11. Funds<br>12. Regular collection of garbage<br>13. Refer to comprehensive study on Flood Control & Drainage Improvement. |

## PASAY CITY

| CONCERNS | PROBLEMS/ ISSUES | RECOMMENDATION |
|---|---|---|
| 1. Drainage (Lateral / Esteros)<br>2. MMDA<br>3. GARBAGE | 1. Informal settlers occupying esteros & waterways, easement, making shanties under bridges<br>2. Insufficient size of drainage system (pipes)<br>3. Underground utilities<br>4. Lack of community awareness<br>5. Lack of consistency in the operation maintenance activities in cleaning the drainage system within Pasay City<br>6. Less initiative in terms of drainage sanitation<br>7. Lack of strict implementation in the operation maintenance activities of esteros, waterways, etc.<br>8. Unscrupulous dumping of garbage<br>9. Lack of discipline & concerns of the people in the community<br>10. Politicians concerned focus on drainage system | 1. Implementation of rules preventing the inhabitation of sites beside known waterways and drainage sites.<br>2. Monitoring of drainage sites to prevent inhabitation by squatters<br>3. Complete declogging<br>4. Proper coordination among concerned bodies and companies<br>5. Clear dissemination using appropriate channel of influence within the community<br>6. Prioritization of drainage concern<br>7. Educate the people through seminars, which concern waste management. |

## MAKATI CITY

| CONCERNS | PROBLEMS/ ISSUES | RECOMMENDATION |
|---|---|---|
| 1. Drainage laterals<br>2. Drainage (Main / DPWH)<br>3. Waterways (Creek/ Esteros)<br>4. Reservoirs / Pumping Stations<br>5. Funding<br>6. Sustainability of iniatives<br>7. Public Awareness | 1. Garbage<br>2. No sewage treatment Plant or Septic Tank<br>3. Clogged Drainage<br>4. Inadequate Drainage Volume capacity<br>5. Clogged silted / dilapidated / revetment walls<br>6. With informal settlers on legal easement<br>7. Limited budget for desilting & dredging<br>8. Pumping stations out modeled / inadequate capacity<br>9. May not be a priority project<br>10. Local initiatives not | 1. Strict implementation of RA 9003 / segregation monitoring compliance<br>2. Creation on group<br>3. Public Awareness<br>4. Implementation of building code through sanitation<br>5. Funding<br>6. Rehabilitation<br>7. Periodic Maintenance<br>8. Dredging / desilting declogging<br>9. Relocation of informal settlers<br>10. Rehabilitation / Repair of revetment walls<br>11. Replacement of pumping stations<br>12. Allot specific funds both |

| | | |
|---|---|---|
| | integrated metrowide<br>11. Need for IEC for Public participation | from nat'l & local<br>13. MMDA should proceed with meeting with different LGUs & concern agencies. |

**TAGUIG**

| CONCERNS | PROBLEMS/ ISSUES | RECOMMENDATION |
|---|---|---|
| 1. Drainage / Esteros<br><br>2. Funds<br><br>3. Social / Environmental | 1. Illegal disposal of garbage<br>2. Illegal structures squatters<br>3. Lack of information campaign on solid waste management<br>4. Irregular collection of garbage<br>5. Political motivation<br>6. Lack of funds allocation<br>7. Open burning of garbage | 1. Information dissemination<br>2. Remove palakasan system & relocation livelihood<br>3. Continuous information campaign on solid waste management<br>4. Segregation / synchronize solid waste collection<br>5. Support from national & local government<br>6. Awareness on clean air act law. |

**MANILA**

| CONCERNS | PROBLEMS/ ISSUES | RECOMMENDATION |
|---|---|---|
| 1. Esteros<br>2. Drainage<br>3. Environment<br>4. Socio-Economic<br>5. Flood Prone Areas<br>6. Environment | 1. Heavily silted riverbanks and easement not fully develop and protected<br>2. Estero property line not properly delineated<br>3. Missing Esteros<br>4. Uncontrolled individual outfalls along river / estero banks<br>5. Informal settlers<br>6. Dumping site for garbage<br>7. Political intervention<br>8. Insufficient drainage design capacity<br>9. Clogged Drainage<br>10. Low ground elevation / Flood basin areas<br>11. Inadequate / insufficient drainage desilting equipment | 1. Dredging / desilting<br>2. Revetment construction along estero banks<br>3. Established the property lines for esteros<br>4. Legal procedure against encroachment<br>5. Rehabilitation of riverbanks & install control valve<br>6. Relocation site budget<br>7. Organized community based "Bantay Estero"<br>8. Re-evaluate drainage design capacity<br>9. Regular maintenance (declogging)<br>10. Purchase modern desilting equipment<br>11. Redesign of manholes & catch basin covers |

**CALOOCAN**

| CONCERNS | PROBLEMS /ISSUES | RECOMMENDATION |
|---|---|---|
| 1. Water Ways (Esteros)<br>2. Flood prone Areas | 1. Absence or lack of local drainage master plan for long term development<br>2. dumping of massive volume of solod wastes in the natural drainage system<br>3. Obstruction of illegal structures<br>4. Influx of informal squatters along esteros<br>5. Operation & maintenance activities<br>6. Unstable condition of riverbanks<br>7. Missing waterways due to long past filling done<br>8. Uncoordinated digging clearing of debris on construction activities not pursued.<br>9. Economic activities are diversely affected during heavy flooding | 1. Formulation of long term drainage sewerage network<br>2. Strict implementation of PD 825 & other city ordinance<br>3. Impose required easement on areas waterways, rivers<br>4. Acquire additional equipment fro drainage maintenance & hire additional personnel<br>5. Proper coordination with national & local agencies. |

## 5. QUESTIONS, COMMENTS & ANSWERS

1. Question: Why are Malabon and Navotas included in the study?
   Answer: As per agreement only the core area of Manila is included in the study.
2. The study should always show the social concern in the work scope.
3. The project should go beyond politics.
4. The hope that the project will push through despite the political changes that will occur after election.

**THE STUDY ON DRAINAGE IN THE CORE AREA OF METROPOLITAN MANILA**

**1ST WORKSHOP**

**March 10, 2004 (9:00 - 5:30 pm)**

**Philippine Trade Training Center**

| No. | ORGANIZATION | NAME | POSITION | CONTACT NO. |
|---|---|---|---|---|
| 1 | Quezon City | Carol Patulinghog | Social Welfare | 927-1588 |
| 2 | Quezon City | Edgardo G. Yap | Head HRO IV | 929-1529 |
| 3 | Quezon City | Aristotle J. Bague | CPDO | 922-4554 |
| 4 | Quezon City | P/Supt. Valentino E. Santacer | CPD | 924-3112 |
| 5 | Quezon City | Edgardo B. Chico | | 924-3816 |
| 6 | Caloocan | Angie Basconcillo | GGADH II | 322-4722 |
| 7 | Caloocan | Daniel C. Mayoni | C, Supply Cheocam, PNP | 362-4654 |
| 8 | Caloocan | Vivian Capili | LG Department Head | 324-4960 |
| 9 | Caloocan | Manuel Ignacio | Dept Head ESS | |
| 10 | Caloocan | Nick Policarpio | ESS | |
| 11 | Caloocan | Renato De Guzman | Engineering III | 288-8811 loc 2245 |
| 12 | Caloocan | Arch. Roy Cordero | City Architect | |
| 13 | Caloocan | Arch. Jonathan Himala | DPO IV | 288-8811 |
| 14 | Caloocan | Arnelord De Guzman | DPO III | 288-8811 |
| 15 | Caloocan | Brigida Noche | Budget Officer | 324-5020 |
| 16 | Makati | Geraldine Santos | Consultant | 0919-448-2697 |
| 17 | Makati | Marianne Bernalez | Planning | 899-9057 |
| 18 | Makati | Edgardo Gundran | | |
| 19 | Makati | Vicente Umengan | | |
| 20 | Makati | Neil Angelo Honorica | | |
| 21 | Taguig | Edmund Notorio | Operation Officer | 640-3004 |
| 22 | Taguig | Jamil Dadung | Monitoring Officer | 640-3004 |
| 23 | Manila | Engr. Ellorey Viernes | Engr. IV - Staff / CEO | 527-4924 |
| 24 | Manila | Jojo Calupaz | DPS Manila - PSA/ Asst. Stat | 527-9636 |
| 25 | Manila | Engr. Reg Pe Benito | Engr. I - CEO | 564-0159 |
| 26 | Manila | Jose A. Bautista | PDO III | 527-4931 |
| 27 | Manila | Juan Dela Cruz | PSA - OIC Dist III | 527-0304 |
| 28 | Pasay | Patricia Almoneda | Engineer I | 831-2446 |
| 29 | Pasay | Maria Cristina M. Tingsiong | Urban Poor Affairs Officer | 551-6124 |
| 30 | Pasay | Engr. Edwin Javaluyas | City Engineer | 831-5925 |
| 31 | Pasay | Lynn Michelle Napuli | Ecology Adventure Club | |
| 32 | Pasay | Bernadette Dongsal | Ecology Adventure Club | |
| 33 | Pasay | April Rose Perez | Ecology Adventure Club | |
| 34 | Pasay | Gregorio Daing | SWO I | 527-5042 |
| 35 | Pasay | Carlito Reta | Zoning Officer | 834-0433 |
| 36 | Pasay | Oscar Bajammdre | Academe | 0916-713-5391 |
| 37 | Pasay | Dirk Escalada | Academe | |
| 38 | UPICOB INC | Bernard Garcia | Institute Director | 288-7009 |
| 39 | UPICOB INC | Alfred Ballasteros | Community Trainor | 562-9864 |
| 40 | UPICOB INC | Silverio Canteros | Community Trainor | 288-7009 |
| 41 | JICA Study Team | Hajime TANAKA | Team Leader | |
| 42 | JICA Study Team | Takayuki NOBE | Deputy Team Leader | |
| 43 | JICA Study Team | Tsutomu KAMEYAMA | OM Specialist | |
| 44 | JICA Study Team | Ryosaku NAGATA | Structure Engineer | |

| No. | ORGANIZATION | NAME | POSITION | CONTACT NO. |
|---|---|---|---|---|
| 45 | JICA Study Team | Tadanori KITAMURA | Drainage Planning II | |
| 46 | JICA Study Team | Kenji MORITA | Database Specialist | |
| 47 | JICA Study Team | Shingo SATO | Economics/ Financials | |
| 48 | JICA Study Team | Sabbir Hassan | Hydroligical & Hydraulic Modelling | |
| 49 | JICA Study Team | Dr. Felixberto Roquia | Social | |
| 50 | JICA Study Team | Mary Grace D. Milanio | Project Secretary | |
| 51 | DPWH Counterpart | Leonila De Ocampo | Engineer IV | |
| 52 | DPWH Counterpart | Mar Tolentino, Jr. | Engineering III | |
| 53 | DPWH Counterpart | Estelita Leonado | Economist II | |
| 54 | DPWH Counterpart | Silverio Auxtero | Operation Maintenance | |
| 55 | DPWH Counterpart | Elmo Atillano | Engineer III | |
| 56 | DPWH Counterpart | Aquillino Decilos | Engineer III | |
| 57 | DPWH Counterpart | Jesus Averilla | SEMS | |
| 58 | DPWH Counterpart | Jennie Almeda | Drafsman 1 | |
| 59 | DPWH Counterpart | Manuel Leano | Engineer IV | |
| 60 | DPWH Counterpart | Lito Manoos | Public Participation 2 | |
| 61 | DPWH Counterpart | Napoleon Famadico | Counterpart Team Leader | |
| 62 | DPWH Counterpart | Diana Parubrub | Database | |
| 63 | DPWH - PMO | Prudenciana Ocampo | Engineering IV | |
| 64 | DPWH - PMO | Lydia Aguilar | Engineering II | |
| 65 | DPWH - PMO | Al Parras | Enginering Asst. | |
| 66 | DPWH - PMO | Norman Gamboa | Engineering Aide | |

# Public Participation Workshop-2

Date: 8:00 - 17:00 May 21, 2004
Place: Philippine Trade Training Center

# THE 2ND WORKSHOP FOR THE ENCHANCEMENT OF PUBLIC PARTICIPATION IN THE DRAINAGE IMPROVEMENT OF THE CORE AREA OF METROPOLITAN MANILA

The workshop was the 2nd of the series of project workshops intended for the enhancement of the stakeholder's participation in drainage improvement.

The 1st part of the workshop started with the singing of the National Anthem lead by Engr. Leonila Mercado followed by an invocation done by Mr. Jess Averilla. Eng. Mario Navarro, representing Director Patrick Gatan, gave the opening remark; Engr. Rebecca Garsuta introducing the participants of the workshop then followed this. This was attended by a total of sixty-four (64) participants representing Pasay City, Makati City, Manila City, Quezon City, Caloocan City and the Municipality of Taguig. Also in attendance were the DPWH NCR, MMDA, DENR, PAGASA, and TALIMA PHILS. (NGO), ACADEME (PWU), and the BUSINESS SECTOR.

The main part of the workshop started with Engr. Napoleon Famadico, the DPWH Team Leader local counterpart, presenting the present condition of the study area. Mr. Hajime Tanaka, JICA Team Leader, then presented the Study's findings, observations and identified possible solutions. An introduction and orientation on " What is public participation? **"** was given by Mr. Jess Averilla. Dr. Felixberto H.Roquia, Jr. Team Public Participation Expert then followed with a discussion on the workshop activities objectives and the expected outputs.

The workshop Objectives were as follows:

1. Discuss by group the present state of the structural, non-structural, and supporting measures for the drainage improvement of their area.
2. Propose and recommend structural, non-structural, and supporting measures to be incorporated in the preparation of the Master Plan and Feasibility Study for the drainage improvement project.
3. Present in a plenary session the proposed recommendations for structural, non-structural, and supporting measures.

The groupings were done by dividing the groups according to the cities within the study area. This was North Core Area, group A and B, made-up of Caloocan City, Quezon City and North Manila. The South Area was made-up of South Manila, Pasay City and the Municipality of Taguig, group as C and D. Results of the session were as follows:

## NORTH MANILA, QUEZON AND CALOOCAN (GROUP A)

| STRUCTURAL MEASURES | NON – STRUCTURAL MEASURES | SUPPORTING MEASURES |
|---|---|---|
| 1. Cleaning of various lateral canals by dredging. | 1. Resettlement program for informal settlers according to RA 7279 EO. 152 | 1. Request additional budget from congress. |
| 2. Construction of dikes of embankments<br>- On all esteros<br>- Casili creek<br>- Maligaya creek | 2. Rapid census of informal settlers in identified affected areas. | 2. Priority projects of senators and congressman through CDF. |
| 3. Replacement of heavily silted pipes. | 3. MOA between LGU's and DPWH regarding maintenance of waterways. | 3. Forming of barangay monitoring |
| 4. Enclosed identified inundation areas (case to case basis) install retarding ponds and suction pumps.<br>- España / Vicente Cruz<br>- Forbes / Dimasalang<br>- R. Magsaysay Blvd. | 4.Community organizing and tapping Bry. Officials for proper waste disposal. | 4. Information, education and communication and community workshops. |
| 5. Construction of new drainage line if necessary. | 5. Provide mini-garbage trucks that can enter narrow streets. | 5. Information, education and communication on SWM |
| 6. Build see through fence at both side of the water ways. | 6. Implement a regular garbage collection in the area near waterways. | 6. Information, education and communication on estero SWM. |
| 7. Provide access roads. | 7. Institutionalize enforcement of water laws/rules / regulations<br>- thru creation of a waterway police bureau. | 7. Information, education and communication on laws water, rules and regulations |
| 8.Repair / rehabilitation pumping station. | 8. Clearing of waterway, easements of informal settlers. | 8. Organize community cleaning & monitoring group |
| 9. Provide access road for river banks for equipment early to pass | 9. RESETTLEMENT OF AFFECTED people Resettlement Package & alternatives: e.g. Balik Probinsya, Monetary Assist. Etc. | 9. Information, education and communication on resettlement and alternatives |
| | 10. Education on the merits of an efficient garbage disposal program. | . Information campaign thru magazine and comics |

## NORTH MANILA, CALOOCAN & QUEZON CITY (GROUP B)

| STRUCTURAL | NON – STRUCTURES | SUPPORTING MEASURES |
|---|---|---|
| 1.Rehabilatation of pumping station in Manila. | 1. Educate people in waste disposal management through barangay centers in people's language. | 1. Creation of LGU task force at barangay level for O&M. |
| 2. Construction of open/ covered lined canals in Caloocan. | 2. Strict enforcement of RA 9003 (Ecological Solid Waste Management by LGUs.) | 2. Adopt "Estero Natin Alagaan Natin Program". (Care for estero) |
| 3. Dredging of lateral and peripheral canals in Dagat-dagatan , Caloocan. | 3. Identification of relocation area for informal settlers. | 3.Tax incentives for industries for cleaning the river.<br>4. Information, education and communication on resettlement & alternatives |
| 4. Construction of dikes and installation of tidal gates. | 4. Periodic inter- agency consultation, LGUs and community. | 6. Regular allocation for O&M at Barangay level from IRA. |
| 5. Construction/ replacement of existing sewer and sewage disposal treatment plant facilities. | 5. Uplift and enhance moral values and discipline thru WS/ seminars. | 7. Funding from CDF of congressman concerned. |
| 6. Regular Maintenance of all drainage facilities. | 6. Strict implementation of DPWH DO #4 (Preventing encroachment on esteros). | 8. Involved NGO's on "Estero Watch" through networking. |
| 7. Improvement and provisions of modern equipment / machineries for the pumping station and drudging equipments. | 7. Implement "polluters pay" principle for industries. | 9. Institutionalize recognition awards incentives for well managed esteros. |
| 8. Construction of catch basin or water impounding area as possible. | 8. Development and industrialization of countryside to minimize exodus of people to the Metropolis. | 10. Tax incentives for industries transferring to the country-side |
| 9. Construct barricades to protect esteros from illegal activities. | 9. Amendments of Lina's law specifically on the provision on illegal settlers. | |
| 10. Esteros to be develop as box culvent to avert disappearance rivers (if possible) | 10. Systematic tagging and census of relocatees. | |

## MAKATI, PASAY, TAGUIG, MANILA (GROUP C)

| STRUCTURAL | NON – STRUCTURAL | SUPPORTING MEASURES |
|---|---|---|
| 1. MMDA<br>- Maintain capacities of drainage channels, tributaries, esteros<br>- Redesign the drainage system to meet the present volume of water waste.<br>- REHABILITATION DRAINAGE SYSTEM<br>- Repair existing pumps/ Increase Capacity. | 1. Provides relocation affected informal settlers. | 1. Implement EO 152 |
| 2. INDUSTRIAL TREATMENT PLANT | 2. Implementation on proper disposal of industrial waste. | 2. Coordinate with DENR |
| 3. LGUs maintenance of drainage mains and laterals, creeks | 3. Establish waste exchange system. | 3. Implementation of LGU Mandate/ Provide Funding |
| | 4. Support small-scale waste regulating industries. | 4. Enforcement of RA 9003- Solid Waste Management Act Under Clean Water Act. |
| | 5. EMD-DENR to strictly monitor compliance to effluent standards. | 5. Active involvement of officers in the local and barangay level. |
| | 6. Waste management. | 6. Workshop in SWM |
| | 7. PNP task force specifically for Monitoring Esteros, Demolition of. | |
| | 8. HUDCC implement EO 153<br>(Task Force on Anti Squatting) | |

## MAKATI, PASAY, TAGUIG, MANILA (GROUP D)

| STRUCTURAL MEASURES | NON – STRUCTURAL SUPPORTING MEASURES | SUPPORTING MEASURES |
|---|---|---|
| 1. Improvement and provision of modern equipment/machineries for the pumping station and dredging equipment | 1. Active involvement of officers in the local and barangay level in the maintenance of the drainage and esteros. | 1. Funds for maintenance of structural measures |
| 2. Construction of catch basin or water impounding area (if possible). | 2. Barangay provides area for the catch basin.<br>3.LGU mandate/provide funding to implement environmental laws. | 2.EMB-DENR to strictly monitor compliance to effluent standards.<br>3. Preparation of IEE/EIA |
| 3. Construct barricades to protect esteros from illegal activities | 4.Amendment of Lina's law specifically on the provision of illegal settlers | 3. Educate the people through seminars on environment management (implementation per barangay) |
| 4. Esteros to be develop as box culvert to avert disappearing rivers (if feasible | 5.Laws to Implement R.A.7279 (acceptable relocation sites through public consultation)<br>6. Systematic tagging and census of relocates | 4.Develop strategies to prevent habitation of informal settlers (squatters)<br>5. Prepare resettlement plan |
| | 7. Enforcement of R.A. 9003 – Solid Waste Management Act and Clean Water Act | 6.Proper dissemination of information regarding waste management<br>7. Barangay monitor dumping at esteros, roads, etc<br>8. Prepare Information, Education, Communication Materials on SWM |
| | 8. Coordinate with DENR, Bu. Of Lands, re: titling of esteros (reclaimed) | . |
| | | |
| | 11. Development and industrialization of countryside to minimize exodus of people to the metropolis. | |

**THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA**
**2nd WORKSHOP**
**"ENHANCEMENT OF PUBLIC PARTICIPATION IN THE DRAINAGE IMPROVEMENT OF METROPOLITAN MANILA"**
**MAY 21, 2004, FRIDAY, 8:00 A.M.- 5:00 P.M.**

## ATTENDANCE

| NO. | NAME | ORGANIZATION | POSITION | CONTACT NUMBER |
|---|---|---|---|---|
| 1 | Leonida S. Santos | PAGASA | Weather Specialist II | 926-50-60 |
| 2 | Jennie V. Almeda | DPWH | Draftsman I | 304-3098 |
| 3 | Mario G. Navarro | DPWH | Project Manager | |
| 4 | Leonila R. Mercado | DPWH | Engineer IV | 304-37-52 |
| 5 | Patricia C. Almoneda | CEO, Pasay City Hall | Engineer I | 831-59-25 |
| 6 | Ellorey A. Viernes | CEO, Manila | Engineer IV | 527-49-24 |
| 7 | Lito B. Manoos | DPWH | Engineer III | 304-380-15 |
| 8 | Lydia C. Aguilar | DPWH | Engineer II | 304-38-15 |
| 9 | Ignacia M. Ramos | EIAPO, DPWH | Supug Envt'l. Mngt. Specialist | 304-32-87 |
| 10 | Silverio D. Auxtero | DPD, Planning Service | Draftsman | 304-38-41 |
| 11 | Mar G. Tolentino, Jr. | DPD, Planning Service | Engineer III | 304-3842 |
| 12 | Lailani Bassig | HUDCC | P.O. III | 811-41-72 |
| 13 | Daisy Dellosa | DPWH | Legal Officer III | 0919-6510463 |
| 14 | Divina Camarao | DENR- EMB-NCR | | 781-04-83 |
| 15 | Leonardo A. Briones | DENR- EMB-NCR | | 781-04-83 |
| 16 | Myrna M. Rodriguez | DPWH- NCR | | 304-36-87 |
| 17 | Barby Paragas | DPWH-Manila | Engineer I | 527-49-24 |
| 18 | Ernesto Lacsa, Jr. | Cal. City Engineer Officer | Engineer I | 304-36-87 |
| 19 | Regie Castro | Cal. City Engineer Officer | Architect I | |
| 20 | Elmer Sanchez | Cal. City Engineer Officer | Engineering Aid I | |
| 21 | Vernon Espiritu | MMDA | OIC-MMZAO-MMDA | 882-41-51 to 71 loc. 279 |
| 22 | Pelita V. Galvez | DPWH-NCR | Engineer I | 304-36-86 to 87 |
| 23 | Adam L. Quiambao | Manila City Hall, CEO | Engineer I | 339-11-34 |
| 24 | Jojo Calupaz | Manila DPS | Assistant STAT | 527-96-36 |
| 25 | Renato De Guzman | Cal. City Engineer Officer | Engineer III | 9185434447 |
| 26 | Estelita M. Leonado | DPWH-NCR | Economist II | 304-33-50 |
| 27 | Tarcela A. Trisle | PAGASA | Weather Observer I | 920-50-60 |
| 28 | Napoleon S. Famadico | DPWH | Engineer IV | 304-38-41 |
| 29 | Joel C. Barroga | CEO, Caloocan | Engineer III | 0919-6408432 |
| 30 | Oscar Bajamonde | Academic | | 0919-7135391 |

**THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA**
**2nd WORKSHOP**
**"ENHANCEMENT OF PUBLIC PARTICIPATION IN THE DRAINAGE IMPROVEMENT OF METROPOLITAN MANILA"**
**MAY 21, 2004, FRIDAY, 8:00 A.M.- 5:00 P.M.**

## ATTENDANCE

| NO. | NAME | ORGANIZATION | POSITION | CONTACT NUMBER |
|---|---|---|---|---|
| 31 | Henry Tengsico | Talima Philippines | Auditor | 0920-6045922 |
| 32 | Norman N. Gamboa | DPWH-PMO-MFCP | Engineer-Assistant | 304-38-15 |
| 33 | Juan V. Dela Cruz | DPS-Manila | OIC-Dist. III/PSA | 527-03-04 |
| 34 | Aquilina T. Decilos | DPWH | Engineer III | 304-38-41 |
| 35 | Rebecca T. Garsuta | DPWH | Engineer V | 304-31-55 |
| 36 | Elizabeth C. Franco | DPWH | Engineer III | 304-31-28 |
| 37 | Azuceno Usero | DPWH | Engineer III | 34-30-50 |
| 38 | Norman D. Austria | CEO-Makati | PEA I | 870-12-29 |
| 39 | Francisco M. Limeta | DPWH | Engineer III | 304-38-48 |
| 40 | Gerardo A. Yden | DPWH-NCR | Engineer II | 304-38-49 |
| 41 | B.A. Ramolete | Municipality of Taguig | Bldg. Inspector I | 642-12-64 |
| 42 | Misangcad S. Pundaodaya | Municipality of Taguig | Bldg. Inspector I | 642-12-65 |
| 43 | Umolweda G. Limpasan | Municipality of Taguig | Bldg. Inspector I | 642-12-66 |
| 44 | Lito Ordañez | Municipality of Taguig | Bldg. Inspector I | 642-12-67 |
| 45 | Jonathan Cruz | Municipality of Taguig | Bldg. Inspector I | 642-12-68 |
| 46 | Demetrio C. Pilar | Municipality of Taguig | Engineer I | 542-40-15 |
| 47 | Tadanori Kitamura | JICA Study Team | Drainage Planning | |
| 48 | Vecente O. Umengan | Makati-LGU | PDO | 870-12-02 |
| 49 | Eduardo R. Hilotin | CEO-Makati | PDA 1 | 870-12-29 |
| 50 | Leonardo P. Sanches | DPWH -PMO | Engr. III | 304-38-15 |
| 51 | Estrelita M. Leonado | DPWH | Econonist II | 304-33-45 |
| 52 | Bernadette R. Dongsal | Academe ( PWU) | | 0919-299020 |
| 53 | Arthur Dela Cruz | Businessman | | 0922-3054369 |
| 54 | Andres P. Quiambao | Talima Philippines | President | 995-70-17 |
| 55 | Russell F.N. Moleta | MMDA | Architect III | 882-41-52 loc. 279 |
| 56 | Mario Lagbas | DPWH -NCR | Engineer II | 0920-2647538 |
| 57 | Belinda I. Fajardo | EIAPO, DPWH | Chief Ems | 304-32-87 |
| 58 | Jesus O. Averilla | JICA - DPWH | SEMS | |
| 59 | Glend T. Dela Cruz | PCUP | AC | 0916-5176269 |
| 60 | Peter Val V. Mendoza | PCUP | Commisioner | 410-46-91 |
| 61 | Tsutomu Kameyama | JICA | | 0918-5499801 |
| 62 | Nagata Ryosaku | JICA | | |
| 63 | Takatuki Nobe | JICA | Deputy Team Leader | |
| 64 | Felixberto Hansen Roquia, Jr | JICA | Public Participation | |
| 65 | Hajime Tanaka | JICA | Team Leader | |

# Public Participation Workshop-3

Date: 8:00- 17:00 July 22, 2004
Place: Philippine Trade Training Center

# THE 3rd WORKSHOP FOR THE ENCHANCEMENT OF PUBLIC PARTICIPATION IN THE DRAINAGE IMPROVEMENT OF THE CORE AREA OF METROPOLITAN MANILA

The workshop was the 3rd of the series of project workshops intended for the enhancement of the stakeholders' participation in drainage improvement. It was done at the Philippine Trade Training Center last July 22, 2004, from 8 to 5 p.m.

The 1st part of the workshop started with the singing of the National Anthem lead by Engr. Leonila Mercado followed by an invocation done by Mr. Jess Averilla. Eng. Mario Navarro, representing Director Patrick Gatan, gave the opening remark; Mr. Jess Averilla introduced the participants of the workshop. This was attended by a total of fifty-six (56) participants representing Pasay City, Makati City, Manila City, Quezon City, Caloocan City and the Municipality of Taguig. Also in attendance were the DPWH, MMDA, DENR, PAGASA, and TALIMA PHILS. (NGO), ACADEME (PWU), and the BUSINESS SECTOR.

The main part of the workshop started with Engr. Napoleon Famadico, the DPWH Team Leader local counterpart, presenting the " Status of the Master Plan". Mr. Hajime Tanaka, JICA Team Leader, then outlined the Master Plan emphasizing that the finalization of the "Master Plan" will be done this August incorporating the output of Public Participation Workshops. This was followed by Engr. Lito Manoos sharing with the participants the pilot experimental study (BEM-ESTERO) presently being conducted in three Barangays within the core study area. Mr. Jess Averilla then presented the rationale and objectives of the 3rd workshop as follows;

> **Rationale**: Base on the studies for the Master Plan for "Drainage Improvement in the Core Area Of Metropolitan Manila", public participation is crucial for the successful implementation of the project. Considering the project as technically sound, economically feasible and socially acceptable it becomes imperative for the affected cities to critically analyze the major factors that affect the sustainability of the proposed projects in the context of the affected people's life-ways.
>
> **Objective:** To analyze the major factors (Solid Waste Management, Pollution, Beautification & greening, and Information, Education and Communication) that influence the successful implementation of the project using the (S.W.O.T) STRENGTH, WEAKNESS, OPPORTUNITIES AND THREATS analysis.

Dr. Felixberto H.Roquia, Jr. JICA Team Public Participation Expert then followed with a discussion on the workshop methodology and the expected outputs which are to be incorporated into the "Master Plan".

**RESULTS OF S.W.O.T ANALYSIS:**

# CALOOCAN GROUP

## BEAUTIFICATION & GREENING

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1) Lower pollution level<br>2) Job generation<br>3) Increases awareness of people regarding environment<br>4) Environmental regeneration | 1) Additional expenses on the part of the government<br>2) Limited space for clean and green program |
| **STRENGTHS (LAKAS)**<br><br>1) Clean, orderly environment<br><br>2) Enhance the personality of the people in the community | **PROPOSED SOLUTIONS:**<br><br>1) Elevate the program to one of the top priorities of the LGU and infuse funds to sustain the program<br>2) Involve a large number of residence to make them aware of the program and increase their social responsibility to further sustain the program | **GROUP MANILA**<br>**MEMBERS:**<br><br>1) ROLANDO EDURIA - CEO<br>2) JOEL BARROGA - CEO<br>3) RENE DE GUZMAN - CEO<br>4) JONATHAN HIMALA - City Planning<br>5) ARNEL DE GUZMAN - City Planning<br>6) VIC BASCOS - DPWH-NCR<br>7) CARLITO TALENJALE - DSWD-NCR |
| **WEAKNESSES (KAHINAAN)**<br>1) One of the least priorities<br>2) Lack of initiative from the people | | |

## POLLUTION CONTROL

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1) Enactment of solid waste management act and clean air act that should Establish a solid waste management board and secure ordinances On emission control<br>2) Operation of existing sewage treatment plan by MWSI and proposed Septage treatment plant (pilot project) 200 m2 capacity<br>3) Continuous cleaning operation of MWSI of existing/old septic tanks | 1) Increasing generation rate of solid waste & septic due to increase of population and informal settlers<br>2) Growing number of motor vehicles passing and Growing on major thoroughfares |
| **STRENGTHS (LAKAS)** | **PROPOSED SOLUTIONS:** | **GROUP MANILA** |
| 1) Medium term plan to solve environmental pollution<br>a) Anti-smoke belching campaign drive<br>b) Information center on environmental pollution<br>c) Integration of environmental science<br>d) Benchmarking<br>2) Comprehensive Land Use Plan-<br>a) Enforcement Performance Standards that should Control emissions<br>b) Implement easements on all waterways | 1) Strong Institutional and Financial Support for the implementation Of the Medium Term Plan through advocacy and Investment Planning<br>2) Ordinance on the establishment of a strong CENRO that should Implement all Environmental Management Programs / Projects and Performances Standards for industries / establishments<br>3) Ordinances on local enforcement of specific provisions stipulated On the Solid Waste Management Act and Clean Air Act e.g. Creation Of SWM Board and regulations on open burning / incineration<br>4) Investment on a comprehensive pollution monitoring system that Should restablish benchmarks / pollution database<br>5) Promote pedestrian priority and Travel demand measures on all Local urban development projects<br>6) Local counterpart support for maintenance and operation of STP's And septage collection and treatment e.g. replication of pilot septage Treatment<br>7) Establish Urban Migration Center to control influx of informal settlers | **MEMBERS:**<br>1) ROLANDO EDURIA - CEO<br>2) JOEL BARROGA - CEO<br>3) RENE DE GUZMAN - CEO<br>4) JONATHAN HIMALA - City Planning<br>5) ARNEL DE GUZMAN - City Planning<br>6) VIC BASCOS - DPWH-NCR<br>7) CARLITO TALENJALE - DSWD-NCR<br>8) LEONARDO SANCHEZ- DPWH-MFCP-PMO |
| **WEAKNESSES (KAHINAAN** | | |
| 1) Absence of working cenro that should Formulate and enforce local environmental Management plan<br>2) No Benchmark information on all type of pollution<br>- Air, water, soil, and noise | | |

## INFORMATION, EDUCATION & COMMUNICATION

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1) Increase awareness on environment among people in the community<br>2) Moral enhancement | 1) Can be use as vehicle for political interest<br>2) Can be an open opportunity to take advantage<br>To solicit funding |
| **STRENGTHS (LAKAS)**<br>1) Regular conduction of seminars, symposiums<br>And other public awareness program<br>2) Cooperation of NGO's and parallel Organization | **PROPOSED SOLUTIONS:**<br><br>1) Training potential resource person<br>2) Discourage political polarization among organization<br>3) Accountability with respect to organizations' finances and funding | **GROUP MANILA**<br><br>**MEMBERS:**<br>1) ROLANDO EDURIA - CEO<br>2) JOEL BARROGA - CEO<br>3) RENE DE GUZMAN - CEO<br>4) JONATHAN HIMALA - City Planning<br>5) ARNEL DE GUZMAN - City Planning<br>6) VIC BASCOS - DPWH-NCR<br>7) CARLITO TALENJALE - DSWD-NCR<br>8) LEONARDO SANCHEZ- DPWH-MFCP-PMO |
| **WEAKNESSES (KAHINAAN)**<br><br>1) Funding<br>2) Lack of trainors and resource person<br>3) Non-awareness on the effect of the Indiscriminate disposal of waste | | |

## SOLID WASTE MANAGEMENT

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1) Job generation<br>a) As truck helpers<br>b) Garbage segregation | 1) Unemployment caused by the lack of environment Awareness<br>2) Health risk<br>a) Dengue<br>b) Respiratory disease<br>c) Liptosphyrosis (from rat urine)<br>d) Cholera |
| **STRENGTHS (LAKAS)**<br><br>1) Existing solid waste management program<br>(Primary collecting approach<br>2) MRF (Material Recovery Facility)<br>3) People's participation/ involvement<br>4) People's organization/ NGO, HOA | **PROPOSED SOLUTIONS:**<br><br>1) Strict implementation of existing laws and ordinances on solid waste Management<br>2) Continued information and education on solid waste segregation scheme<br>3) Regular monitoring of solid waste program implementation<br>4) Weekly assessment and evaluation of program implementation<br>5) Adequate/sustainable program funds | **GROUP MANILA**<br>**MEMBERS:**<br>1) ROLANDO EDURIA - CEO<br>2) JOEL BARROGA - CEO<br>3) RENE DE GUZMAN - CEO<br>4) JONATHAN HIMALA - City Planning<br>5) ARNEL DE GUZMAN - City Planning<br>6) VIC BASCOS - DPWH-NCR<br>7) CARLITO TALENJALE - DSWD-NCR<br>8) LEONARDO SANCHEZ- DPWH-MFCP-PMO |
| **WEAKNESSES (KAHINAAN)**<br><br>1) Poor implementation of program<br>2) Insufficiency of funds<br>3) No transfer | | |

# PASAY –MAKATI GROUP

## INFORMATION, EDUCATION AND COMMUNICATION

| ENVIRONMENT (KAPALIGIRAN)<br>INTERNAL<br>(LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1. Better community involvement and participation<br>2. Social acceptability<br>3. Public awareness/Social awareness<br>4. Social preparedness with regards to calamities, Flooding and the likes. | 1. Additional waste.<br>2. Oppositions |
| **STRENGTHS (LAKAS)**<br>1. Multi-purpose hall<br>2. Day Care Centers<br>3. Barangay Assembly<br>4. Capacity Building seminars<br>5. Leaflets, posters, ads, media<br>6. Budget allocation | **PROPOSED SOLUTION**<br>1. Focus on issues that could not provide benefits to the people to boost their interest to be informed Well, to be educated and be well communicated.<br>2. Promote regular dialogues within the barangay levels. | |
| **WEAKNESSES (KAHINAAN)**<br>1. Lack of interest and concern<br>2. Ningas-kugon<br>3. Self-interest<br>4. Mañana habit<br>5. Mis-information, agitation propaganda<br>6. Gossiping | | |

## POLLUTION

| ENVIRONMENT (KAPALIGIRAN)<br><br>INTERNAL<br>(LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1. Business opportunities - ex. Mineral, bottled water, Drinking/water station, dust masks, etc.<br>2. Employment opportunities | 1. Agencies concerned lack the trust of Improving services to the public.<br>2. Spread of diseases.<br>3. Contaminated water.<br>4. Over-population<br><br>5. Toxic waste disposal.<br>6. Financial burden<br>7. Ecological degradation |
| **STRENGTHS (LAKAS)**<br>1. Existing laws and ordinances<br>2. Health and sanitation programs<br>3. Family planning<br>4. Budget allocation<br>5. Adherence to national standard on pollution | **PROPOSED SOLUTION**<br>1. Strict implementation of existing laws and ordinances.<br>2. Provide preventive measures such as:<br>a. Water treatment plant<br>b. Locally owned sewerage treatment plant | |
| **WEAKNESSES (KAHINAAN)**<br>1. Lack of implementation of laws and ordinances<br>2. Lack of manpower<br>3. Lack of budget<br>4. Ecological concern | | |

## BEAUTIFICATION AND GREENING

| ENVIRONMENT (KAPALIGIRAN)<br>INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1. Tourist attraction<br>2. Clean air<br>3. Better surroundings<br>4. Business opportunities | 1. No relocation site for informal settler<br>2. Destruction of facilities and vegetation<br>3. Abuse of authority in implementing laws<br>And ordinances |
| **STRENGTHS (LAKAS)**<br>1. Greening ordinances.<br>2. Budget allocation<br>3. Water easement law | **PROPOSED SOLUTION**<br>1. Relocation of informal settlers<br>2. Provide vegetation<br>3. Promenade<br>4. Community mortgage program<br>5. Livelihood program<br>6. Regular maintenance of promenade | |
| **WEAKNESSES (KAHINAAN)**<br>1. No enough space to plants, etc.<br>2. Not in my own backyard syndrome | | |

## SOLID WASTE MANAGEMENT

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1. Income generation<br>2. Cleanliness and beautification<br>3. Tourist attraction<br>4.Model community<br>5.Health and sanitation<br>6. Higher land value<br>7. Reducing the risk of air pollution<br>8. Business opportunities for investors | |

| STRENGTHS (LAKAS) | PROPOSED SOLUTION |
|---|---|
| 1. Laws and ordinances | 1. Strong political will |
| 2. Existing People's Organization | 2. People's will |
| 3. Community leadership | 3. Creation of SWM-BEM |
| 4. NGO | 4. Review and amend of existing laws and ordinances as necessary. |
| 5. LGU | |
| 6. Academe | |
| 7. Cooperation and unity | |
| 8. Vigilance | |
| 9. Waste segregation scheme | |
| 10. Budget allocation | |

| WEAKNESSES | LGU-MAKATI (fr: Engr's Office) | LGU-PASAY | TALIMA Phils, Inc. | DPWH ESSO |
|---|---|---|---|---|
| 1. Lack of implementation of laws and ordinances | | 1. Eng'r. Patricia Almoneda | 1. Caridad S. Nocum | 1. Bel Fajardo |
| 2. Insufficient funding | 1. Vic Umengan | 2. Cristy Tingsiong | 2. Dulce Gamboa | |
| 3. Lack of discipline, unity and awareness | 2. Norman Austria | | 3. Henry Tengcico | |
| 4. Politicking | | | | |
| 5. People's stubborness and laziness | | | | |
| 6. Misuse of funds | | | | |

# MANILA GROUP

**INFORMATION, EDUCATIOTION & COMMUNICATION GROUP-MANILA**

| **ENVIRONMENT** / **INTERNAL** | **OPPORTUNITIES (PAGKAKATAON)** | **THREATS (BANTA)** |
|---|---|---|
| | 1) Chance to learn alternative livelihood<br>2) Possible solution to traffic problem<br>3) Possible solution to healthy environment<br>4) Prevention/Alternative ways for flood prevention thru People's initiative. | 1) Degradation of the environment<br>2) Degradation of the communities' health due to Pollution & proliferation of germs & viruses<br>3) Greater inundation |
| **STRENGTHS (LAKAS)**<br>1) Enriched the knowledge of the community & Enhance their symbiotic relationship with nature. | **PROPOSED SOLUTIONS:**<br>1) Enact strict laws /ordinances.<br>2). Create community cooperative & alternative livelihood Opportunities along waterways (estero) to enhance people's Participation.<br>3) Utilize the full force of the media & educational institution (School curriculum on environment) | **GROUP MANILA**<br>**TEAM LEADER:** ELLOREY VIERNES<br>**MEMBERS:**<br>1. JUAN V. DELA CRUZ<br>2. JOJO CALUPAZ<br>3. RUSSELL MOLETA<br>4. LYNDEN H. PUNZALAN<br>5. BARBY PARAGAS<br>6. MARIA DAYONI V. REGENIO<br>7. FRANCISCO M. LIMETA, JR.<br>8. DAN SIMEON<br>9. GERARDO A. YDEN<br>10. ENGR. LUALHATI |
| **WEAKNESSES (KAHINAAN)**<br>1) Lack of time, concern, interest & willingness To learn due to weak economy.<br>2) Funding<br>3) Lack of political will | | |

**BEAUTIFICATION & GREENING**

| **ENVIRONMENT (KAPALIGIRAN)**<br><br>**INTERNAL (LOOB)** | **OPPORTUNITIES (PAGKAKATAON)** | **THREATS (BANTA)** |
|---|---|---|
| | 1) Livelihood/peace and order<br>2) Tourist attraction<br>3) Business and job opportunities<br>4) Healthy community | 1) Vandalism<br>2) Theft and damage of public properties<br>Eyesore due to unhealthy surroundings<br>3) Spread of epidemic |
| **STRENGTHS (LAKAS)**<br><br>1) Healthy community and environment<br><br>2) Minimize pollution | **PROPOSED SOLUTIONS:**<br><br>1) Public awareness thru INFORMATION, EDUCATION & COMMUNICATION<br>2) Strengthen enforcement of laws<br>3) Incentive reward for cleanest community<br><br>4) Allocation of funds for the maintenance of beautification Project.<br>5) Promote clean and green project<br>6) Regular maintenance of beautification project | **GROUP MANILA**<br>**TEAM LEADER:** ELLOREY VIERNES<br>**MEMBERS:**<br>1. JUAN V. DELA CRUZ<br>2. JOJO CALUPAZ<br>3. RUSSELL MOLETA<br>4. LYNDEN H. PUNZALAN<br>5. BARBY PARAGAS<br>6. MARIA DAYONI V. REGENIO<br>7. FRANCISCO M. LIMETA, JR.<br>8. DAN SIMEON<br>9. GERARDO A. YDEN<br>10. ENGR. LUALHATI |
| **WEAKNESSES (KAHINAAN)**<br><br>1) Lack of time<br>2) Poor implementation of laws and programs<br><br>3) Laziness<br>4) Only at the start attitude<br>5) Lack of political will (Barangay officials<br>6) Insufficient funds | | |

**POLLUTION CONTROL**

| **ENVIRONMENT (KAPALIGIRAN)**<br><br>**INTERNAL (LOOB)** | **OPPORTUNITIES (PAGKAKATAON)**<br><br>1) Healthy environment with potable water & clean Air | **THREATS (BANTA)**<br><br>1) Health problems<br>I.e. Lung Related Diseases, Gastroenteritis<br><br>2) Financial constraints<br><br>3) Lack of political will to implement laws/ Ordinances |
|---|---|---|
| **STRENGTHS (LAKAS)**<br>STRENGTHS<br><br>1) Healthy community<br><br>2) CONDUCIVE TO ECONOMIC ACTIVITIES<br><br>**WEAKNESSES (KAHINAAN)**<br><br>1) Funding<br>2) Ignorance of the law/ ordinances<br><br>3) Informal settlers<br>4) Illegal water connections<br>5) Improper water line connection<br>6) Lack of political will | **SOLUTIONS:**<br><br>1) Strict implementation of the CLEAN AIR ACT<br>2) Information dissemination by BARANGAYS, LGU's & CONCERNED AGENCIES<br>3) Community involvement<br>4) Relocation of informal settlers<br>5) Regular maintenance of drainage/ septic tank<br>6) Regular fumigation<br>7) Strict implementation of laws/ordinances by The NATIONAL POLLUTION CONTROL COMMISSION | **GROUP MANILA**<br>**TEAM LEADER:** ELLOREY VIERNES<br>**MEMBERS:**<br>1. JUAN V. DELA CRUZ<br>2. JOJO CALUPAZ<br>3. RUSSELL MOLETA<br>4. LYNDEN H. PUNZALAN<br>5. BARBY PARAGAS<br>6. MARIA DAYONI V. REGENIO<br>7. FRANCISCO M. LIMETA, JR.<br>8. DAN SIMEON<br>9. GERARDO A. YDEN<br>10. ENGR. LUALHATI |

**SOLID WASTE MANAGEMENT**

| ENVIRONMENT (KAPALIGIRAN)<br><br>INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1) Livelihood/ Employment thru waste segregation<br>2) Waste reduction<br>3) Clean healthy environment<br>4) Prevent flooding<br>5) Less pollution<br>6) Prolong the life of disposal sites | 1. Spread of communicable disease<br>2. Social acceptability<br>3. Pollution |
| **STRENGTHS (LAKAS)**<br>1) Strict implementation of all laws pertaining Solid waste<br>2) Political will to sustain SOLID WASTE MANAGEMENT PROGRAM<br>3) Creation of Task Force<br>EX: anti-littering Task Force<br>4) Organized and well coordinated collection Scheme<br><br>**WEAKNESSES (KAHINAAN)**<br>1) Lack of motivation<br>2) Lack of willingness<br>3) Lack of awareness<br>4) Only at the start attitude<br>5) Lack of funds<br>6). Not in my backyard syndrome | **SOLUTIONS:**<br>1) Information, Education and Communication Strategy<br>2) Permanent disposal site<br>3) Full implementation of RA 9003<br>4) Sustainable programs/ Project about SOLID WASTE<br>5) Establish MRF every 50 Meters along waterways (Estero)<br>6) Promote incentives to encourage recycling waste<br>Recycling waste. | **GROUP MANILA**<br>**TEAM LEADER:** ELLOREY VIERNES<br>**MEMBERS:**<br>1. JUAN V. DELA CRUZ<br>2. JOJO CALUPAZ<br>3. RUSSELL MOLETA<br>4. LYNDEN H. PUNZALAN<br>5. BARBY PARAGAS<br>6. MARIA DAYONI V. REGENIO<br>7. FRANCISCO M. LIMETA, JR.<br>8. DAN SIMEON<br>9. GERARDO A. YDEN<br>10. ENGR. LUALHATI |

# TAGUIG GROUP

## INFORMATION, EDUCATION AND COMMUNICATION

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | Construction of Training Center at Bogy. Level<br>Creation of Information and Education Committee | Non implementation due to lack of funding |
| **STRENGTHS (LAKAS)**<br>Mun. Ordinance 113 (Unified approach on Solid waste management) | **PROPOSED SOLUTION**<br>1. Conduct barangay assembly, week and monthly training/seminars of residence at barangay level.<br>2. Establishment of billboards/signage for Mun. Ord. No. 113<br>3. Continues public information dissemination thru handouts, leaflets (English-Tagalog version) | |
| **WEAKNESSES (KAHINAAN)**<br>1. Non-awareness of Mun. Ordinance No. 113<br>2. Lack of cooperation of barangay leader<br>3. Lack of trainer<br>4. Lack of information and dissemination | 4. Inter-personal communication<br>5. House to house information campaign<br>6. Allocation of funds thru sanguniang resolution | |

## POLLUTION CONTROL

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | To develop a good and manageable Metro-Manila Flood Control System<br>To create a good business trading<br>To promote a healthy environment<br>To develop a cheap source of potable water | Non implementation due to lack of funding |
| **STRENGTHS (LAKAS)**<br>1. R.A. 9003 (Clean Air Act)<br>2. Mun. Ord. No. 113 (Unified approach on Solid Waste Management)<br>3. P.O. 825 (Anti-Dumping Law) | **PROPOSED SOLUTION**<br>1. Strict implementation of ordinances (National/Local)<br>2. Inter-agency coordination<br>3. Public participation | |
| **WEAKNESSES (KAHINAAN)**<br>1. Weak implementation of the National/Local/ Municipal Ordinances<br>2. Lack of Inter-agency coordination | | |

## BEAUTIFICATION AND GREENING

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1. Upgrading of creeks and estero<br>2. Implement adequate easement for maintenance of creeks /estero<br>3. To implement tree planting activities and vegetation Protection<br>4. Job opportunity<br>5. Provide/construct low cost housing for relocatee | 1. Presence of illegal settlers along creeks/ Estero<br>2. Lack of relocation site/funding<br>3. Opposition from the receiving sites |
| **STRENGTHS (LAKAS)**<br>1. Local land use and zoning ordinances<br>2. Executive order creating local clean and Green office | **PROPOSED SOLUTION**<br>1. Proper implementation of land use and zoning<br>2. Allocation of funds thru SB solution<br>3. Coordination with NHA, HUDCC and concern agencies. | |
| **WEAKNESSES (KAHINAAN)**<br>1. Non-cooperation of barangay official<br>2. Lack of concern by residence<br>3. Human Rights Law | | |

## SOLID WASTER MANAGEMENT

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1. Income generation thru waste segregation<br>2. Job opportunities | 1. Trends politically<br>2. Weak implementation<br>3. Opposition from non-concerned citizen<br>4. Lack of political will in barangay level |

| STRENGTHS (LAKAS) | PROPOSED SOLUTION |
|---|---|
| 1. Mun. Ord. No. 113 (Unified approach on Solid management | 1. Allocation of funds thru National/Local and other financial institution<br>2. Orientation/seminar/communication planning<br>3. Information campaign<br>4. Construction of trash trap<br>5. Strict implementation of fines and penalties to violators |
| **WEAKNESSES**<br>1. Lack of facilities<br>2. Financial<br>3. Discipline<br>4. Non-cooperation<br>5. Coordination/Inter-agency<br>6. Diversion of funds<br>7. Lack of political will (barangay level) | TAGUIG GROUP:<br>1. Boyet Pilar<br>2. Udang Limpasan<br>3. Edmund Notorio<br>4. Lito Ordoñez<br>5. Jexter Cruz<br>6. Bernie Ramolete<br>7. Jamil Dadung<br>8. Mike Pundaodaya<br>9. Myrna Rodriguez |

**THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA**
**3RD WORKSHOP**
**July 22, 2004 (8:00 - 17:00)**
**Philippine Trade Training Center, 2/F DTI Bldg., Corner Roxas Boulevard, Pasay City**

| NO. | NAME | POSITION | ORGANIZATION | CONTACT NO. |
|---|---|---|---|---|
| 1 | Hajime TANAKA | Team Leader | JICA Study Team | 304-3842 |
| 2 | Takayuki NOBE | Deputy Team Leader | JICA Study Team | 304-3842 |
| 3 | Tadanori KITAMURA | Drainage Planning / Hydraulics | JICA Study Team | 304-3842 |
| 4 | M.M. Sabbir Hassan | Hydrological & Hydraulic Modeling | JICA Study Team | 304-3842 |
| 5 | Shingo SATO | Economics / Finance | JICA Study Team | 304-3842 |
| 6 | Dr. Felixberto Roquia | Public Participation | JICA Study Team | 304-3842 |
| 7 | Grace D. Milanio | Project Secretary | JICA Study Team | 304-3842 |
| 8 | Rosgel Gamala | Asst. Secretary | JICA Study Team | 304-3842 |
| 9 | Mike Marcelo | Admin Assistant | JICA Study Team | 304-3842 |
| 10 | Victor G. Bascos | Engineer VI | DPWH - NCR | 304-3687 |
| 11 | Ma. Dayonai V. Regenio | Engineer I | DPWH - NCR | 304-3687 |
| 12 | Leonardo Sanchez | Engineer III | DPWH - NCR | 304-3878 |
| 13 | Lina Decilos | Engineer III | DPWH - NCR | 304-3482 |
| 14 | Lito Manoos | Engineer III | DPWH - NCR | 304-3815 |
| 15 | Mario Tolentino, Jr. | Engineer III | DPWH - NCR | 304-3482 |
| 16 | Silverio D. Auxterio | Draftsman | DPWH - NCR | 304-3482 |
| 17 | Mario Navarro | Project Manager | DPWH - NCR | 304-3815 |
| 18 | Manuel Leano | Engineer IV | DPWH - NCR | 304-3482 |
| 19 | Gerardo A. Yden | Engineer II | DPWH - NCR | 304-3849 |
| 20 | Myrna Rodriguez | Engineer II | DPWH - NCR | 304-3842 |
| 21 | Francisco M. Limetan | Engineer III | DPWH - NCR | 504-3849 |
| 22 | Estelita Leonado | Economist | DPWH - NCR | 304-3350 |
| 23 | Leonila R. Mercado | Engineer IV | DPWH - NCR | 304-3752 |
| 24 | Belinda I. Fajardo | Chief, EMS | DPWH - ESSO | 304-3287 |
| 25 | Barby Paragas | Engineer 1 | CEO -Manila | 527-4924 |
| 26 | Ellorey Viernes | Engineer IV | CEO -Manila | 527-4924 |
| 27 | Danilo R. Simeon | Project Officer III | CPDO - Manila | 527-4931 |
| 28 | Lynden H. Punzalan | Engineer III | CEO - Manila | 564-0159 |
| 29 | Juan V. dela Cruz | OIC-Dist III - DPS | DPS - Manila | 527-0304 |
| 30 | Jojo Calupaz | Assistant Statistics | DPS - Manila | 527-9636 |
| 31 | Renato de Guzman | Engineer III | CEO- Caloocan | 288-8811 |
| 32 | Archt. Jonathan T. Himala | Planning Officer IV | LDPO - Caloocan City | 324-5258 |
| 33 | Joel C. Barroga | Engineer III | CEO- Caloocan | 330-4891 |
| 34 | Rolando Eduria | | CEO - Caloocan City | 0917-396-4808 |
| 35 | Arnelord de Guzman | DPO III | Caloocan | 324-5258 |
| 36 | Norman B. Austria | PEA I | LGU - Makati | 870-1229 |
| 37 | Vicente D. Umegan | PDO I | LGU - Makati | 870-1202 |
| 38 | Edgardo B. Casio | Planning Officer | Quezon City | 324-3811 |
| 39 | Romano C. Rios | Planning Officer | Quezon City | 924-3816 |
| 40 | Patricia Almoneda | Engineer I | Pasay City | 833-3214 |
| 41 | Ma. Cristina Tingsiong | Clerk II | Pasay City | 551-6124 |
| 42 | Demetrio L. Pilar | Inspector | Taguig | 642-1264 |
| 43 | Bernardo A. Ramolete | Bldg. Inspector | Taguig | 642-1264 |
| 44 | Umolhuda Limpasan | Bldg. Inspector | Taguig | 642-1264 |
| 45 | Jamil M. Dadung | SWMO Monitoring | Taguig | 642-1264 |
| 46 | Edmund Notorio | SWMO Head | Taguig | 642-1264 |
| 47 | Misangcad Pundaodaya | Estimator / Staff | Taguig | 642-1264 |
| 48 | Jonathan Jexter S. Cruz | Estimator / Staff | Taguig | 642-1264 |
| 49 | Manuelito Ordonez | Estimator / Staff | Taguig | 642-1264 |
| 50 | Isabelo Kingking | Estimator / Staff | Taguig | 642-1264 |
| 51 | Henry Tengsico | | Talima, Philippines | 251-5003 |
| 52 | Dulce Gamboa | Talima | Talima, Philippines | |
| 53 | Caring Nocum | Talima | Talima, Philippines | |
| 54 | Lourdes K. Roncesvalles | NEDA | NEDA | 631-3724 |
| 55 | Carlito S. Talenjale | ADO Officer | DSWD - NCR | 734-4116 |
| 56 | Russel F. Moleta | Architect III | MMDA | 882-4151 loc 279 |
| 57 | Nestor Lualhati | PMO- A | MWSS | 929-6988 |

# Public Participation Workshop-4

Date: 8:00- 17:00 October 1, 2004
Place: Traders Hotel, Manila

**THE 4th WORKSHOP FOR THE ENCHANCEMENT OF PUBLIC PARTICIPATION IN THE DRAINAGE IMPROVEMENT OF THE CORE AREA OF METROPOLITAN MANILA**

The workshop was the 4th of the series of project workshops intended for the enhancement of the public participation in drainage improvement. It was done at the Ballroom A, 2nd floor Trader's Hotel, Manila, October 1, 2004 from 8 to 5 p.m.

The first part of the workshop started with the singing of the National Anthem lead by Engr. Leonila Mercado followed by an invocation done by Engr.Myrna Rodriguez. Eng. Mario Navarro, representing Director Patrick Gatan, gave the opening remark emphasizing the crucial role of Public Participation in the sustainability of the project, Engr. Mary Ann T. Bautista then followed with the introduction of the participants. This was attended by a total of sixty-five (72) participants representing Pasay City, Makati City, Manila City, Quezon City, Caloocan City and the Municipality of Taguig. Also in attendance were the DPWH, MMDA, DENR, PIA, PNP, MBCEP and TALIMA PHILS.(NGO), ACADEME (PWU), and the BUSINESS SECTOR.

The main part of the workshop started with Mr. Takayuki Nobe, Deputy Team Leader presenting the Master Plan and the Priority Projects reiterating the importance of public participation in the implementation of the project. Mr. Jesus Averilla, counterpart Assistant Team Leader gave the Overview on the BEM-ESTERO Pilot Experimental Study followed by the counterpart coordinators Engr. Lito Manoos presenting the progress report for Barangay 46, Pasay City, and Engr. Leonardo Sanchez for Barangay 195, Manila City and Engr Manuel Leano for Barangay Palanan, Makati City. Dr. Felixebrto H. Roquia, Jr., JICA Study Team Public participation expert, followed with a presentation of the Social Impact Assessment of the identified priority areas of the study, highlighting the social, economic and health impacts and mitigations.

The afternoon session started with Dr. Felixberto H. Roquia, Jr. discussing the Public Participation workshop aspect of the Project Operation/ Maintenance Rationale, concept and methodology. The participants grouped themselves accordingly and worked on the assigned task, the results of which they presented in a plenary session.

The workshop ended with Dr. Roquia wrapping-up the activities of the session. Mr. Hajime Tanaka, the JICA Study Team leader gave his closing remarks reiterating the vital role of the LGU and other government and non-government agencies in the operation and maintenance of the project. This was followed by the awarding of certificates of attendance by Mr. Tanaka and Mr. Nobe.

## I. Workshop Rationale:

The success of the DICAMM Project relies on the active participation of the Local Government and the barangay residents who are directly and indirectly affected by the project. The interaction of the MMDA/DPWH with the Local Government Units, Government & Non-government Agencies thus becomes imperative in the preparation of the LGU OPERATION/ MAINTENANCE Guidelines for priority projects identified in the Master Plan for effective implementation and sustainability.

## II. Workshop Objective:

To develop and prepare the LGU implementation Operation/Maintenance guidelines for the DICAMM priority projects.

## III. Results

LGU GUIDELINES FOR ***OPERATIONS AND MAINTENANCE*** OF PRIORITY PROJECT

**MANILA**

| **A. STRUCTURAL MEASURES** | **OPERATION** | **MAINTENANCE** |
|---|---|---|
| 1. Rehabilitation of Drainage Channels | ● Assist in Declogging<br>● City Provide disposal site for dredging<br>● Coordinate Repair of pavement for cement pipes<br>● Allocation of budget (local/national) | ● Regular maintenance of drainage channels by declogging/desiltting and dredging<br>● Put proper human resources with monthly incentives in form of cash and goods<br>● Regular monitoring on gov't property line, manhole and catch basin covers<br>● Continuous search of disposal sites<br>● Purchases of additional equipments and manpower |
| 2. Rehabilitation works of Drainage Pumping Station | ● Assigning of knowledgeable technical person who has technical know how on pumping operations<br>● Formulate training | ● Overhauling of pumps regularly during dry season<br>● Regular check up of electrical wiring |
| 3. Additional Works for North Manila | ● RCBC operations of Blumentritt and Espana<br>● Construction of additional drainage lines<br>● Retrieval of esteros | ● Additional pumps and budget<br>● Proper maintenance of drainage lines |
| 4. Additional Works for South Manila | ● Adequate design of RCBC and RCPC | ● Regular cleaning and monitoring<br>● Frequent coordination with barangay officials<br>● Proper and regular maintenance |

| B. Non-Structural and Supporting Structures | OPERATION | MAINTENANCE |
|---|---|---|
| 1. Relocation of Informal Settlers | ● Proper orientation regarding the existing law<br>● Discourage Professional squatting<br>● Provide housing relocation according to RA 7279<br>● Follow IROW guideline owners of land that have encroached | ● Brgy. Officials regularly check the residents for illegal setllers<br>● Illegal construction should be penalized<br>● Confiscate illegal construction Materials<br>● Demolition of illegal construction of buildings |
| 2. Community-based Solid Waste Management | ● Increase Awareness on the schedule of garbage collection<br>● Intensify of the 3R's(reduce, re-use, recycle)<br>● Establish Materials recovery facility<br>● Impose penalty on violators | ● Motivating the residents on the benefit they gain from following the 3R's among their household<br>● Brgy. Kagawad should conduct regular patrolling of garbage prone areas<br>● Follow environmental guidelines on garbage disposal<br>● Incentives in the form of cash allowance (awards and recognition) for proper management of garbage |
| 3. Information, Education and Communication | ● Continuous environmental campaign especially on the young population<br>● Organize activities such as Barangay Seminars & preparation of environmental posters<br>● Conduct values orientation/formation particularly on the environment<br>● Include environment education in the curriculum<br>● Proper orientation on the family in the brgy. Level | ● Regular meeting to disseminate information<br>● Conduct brgy. Consultation and seminar regarding moral values and environmental protection<br>● Prepare information materials to regularly inform the residents of the environmental problems, Issues & concerns of the Barangay |
| 4. Strengthening of O/M | ● Sustainable program and budget<br>● Conduct regular education, information, dissemination<br>● Enforce municipal/city ordinance regarding community-based management in terms of SWM<br>● Train Barangay residents to do citizen's arrest on violators of environmental laws | ● Frequent monitoring in the implementation of environmental programs<br>● Sustained cooperation and support with LGU's/NGO's |

LGU GUIDELINES FOR ***OPERATIONS AND MAINTENANCE*** OF PRIORITY PROJECT

**PASAY, MAKATI, TAGUIG**

| **A. STRUCTURAL MEASURES** | **OPERATION** | **MAINTENANCE** |
|---|---|---|
| 1. Rehabilitation of Drainage Channels | ● Dredging by LGU/MMDA<br>● Declogging by LGU and Brgy. Level<br>● Monitoring brgy. Level<br>● Disposal of dredged materials<br>● Environmental safety | ● Regular/periodic as assigned by the LGU |
| 2. Rehabilitation works of Drainage Pumping Station | ● Set-up of trash screen between boundaries of municipalities<br>● Protective fence set-up along creek sides<br>● Easement road set-up<br>● | ● Continuous monitoring of esteros and drainage systems within the brgy levels<br>● Identify disposal site on a long term basis<br>● Environmental management plan<br>● Periodical check up trash screen<br>● Continuous monitoring of the said structure |
| 3. Additional Works for South Manila | ● Declogging and dredging of tertiary drainage systems | ● Regular maintenance works such as painting, repair works including easement roads |

| **B. Non-Structural and Supporting Structures** | **OPERATION** | **MAINTENANCE** |
|---|---|---|
| 1. Relocation of Informal Settlers | ● Survey/tagging of identified informal settlers<br>● Implementation of RA 7279(commitment of the LGU for a resettlement site)<br>● Relocation of informal settlers | ● Monitoring of brgy. Levels, social development plan in the relocation area<br>● Resettlement action plan |
| 2. Community-based Solid Waste Management | ● Implementation of RA 9003 | ● Enforcement<br>● Monitoring |
| 3. Information, Education and Communication | ● Massive information drive such as dialogues, house to house campaign, leaflet distribution, ads, posters | ● Continuous monitoring for compliance |
| 4. Strengthening of O/M | ● Creation of drainage improvement office (DIMO) | ● Monitoring/coordination with different DIMO-LGU |

**THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA**

**4TH WORKSHOP**

**October 1, 2004 (Friday), 8:00 a.m. – 5:00 p.m.**

## PARTICIPANTS LIST

| NO. | NAME | POSITION | ORGANIZATION | CONTACT NO. |
|---|---|---|---|---|
| 1 | Arnelord De Guzman | DDO III | City Planning, Caloocan | 324-52-58 |
| 2 | Hernanie De Guzman | OIC | Solid Waste Mgmt, Caloocan | 323-5742 |
| 3 | Renato De Guzman | Engineer III | Engineering, Caloocan | |
| 4 | Nick Policarpio | ESS | Caloocan | 323-6742 |
| 5 | Arch. Roy Cordero | City Planning Officer | Caloocan | |
| 6 | Jonathan T. Himala | Planning Officer IV | Caloocan | |
| 7 | Allen Arvelo | Architect 1 | Caloocan | |
| 8 | Cecilla J. Cruz | PEO IV, Urban Poor | Caloocan | 324-4722 |
| 9 | Joselito Fausto | Clerk III, Urban Poor | Caloocan | 324-4722 |
| 10 | Darwin Espinosa | Clerk III, Urban Poor | Caloocan | 324-4722 |
| 11 | Manny Rios | Project Dev't Officer | Quezon City | 924-3816 |
| 12 | Gilbert Q. Del Rosario | Project Dev't Officer | Quezon City | 924-3816 |
| 13 | Psupt. Valentino E. Santacera | DPCR, CPPO, PNP | Quezon City | 436-8550 |
| 14 | Carlito Talenjale | Admin Officer | Quezon City | |
| 15 | Roel Arevalo | BEM | Makati City | 551-9007 |
| 16 | Luwegie Raymundo | SWMD - Staff | Makati City | 895-4991 |
| 17 | Marianne Bernaldez | SWMD - Staff | Makati City | 895-4991 |
| 18 | Reynaldo Ardan | Planning - Staff | Makati City | 890-9057 |
| 19 | Ildefonso De leon | IEC, SWMD | Makati City | 899-9057 |
| 20 | Norman D. Austria | PEA - 1 | Makati City | 890-1229 |
| 21 | Vicente O. Umengan | PDO | Makati City | 890-1202 |
| 22 | Bernardo A. Remolete | Bldg Inspector | Taguig | |
| 23 | Umolhuda g. Limpasan | Coordinator | Taguig | |
| 24 | Demetrio L. Pilar | Inspector | Taguig | |
| 25 | Patricia C. Almoneda | Engineer 1 | Pasay City | 833-3214 |
| 26 | Art Gaylican | Bgy. chairman | Pasay City | 524-1725 |
| 27 | Maria Cristina M. Tingsiong | Clerk II | Pasay City | 833-1174 |
| 28 | J.Romeo A. Cueto | Engineer III | Manila | 527-0914 |
| 29 | Lynden H. Punzalan | Engineer III | Manila | 564-0159 |
| 30 | Mary Ann T. Bautista | Engineer III | DPS-PS, DPWH | 304-3098 |
| 31 | Ma. Soledad Balisi | Economist III | DPS-PS, DPWH | 304-3098 |
| 32 | Dolores M. Hipolito | PM 1 | PMO - FCSEC | 628-1227 |
| 33 | Gil I. Iturralde | Engineer V | PMO - FCSEC | 628-1227 |

| NO. | NAME | POSITION | ORGANIZATION | CONTACT NO. |
|---|---|---|---|---|
| 34 | Mario Navarro | PM II | PMO – MFCP | |
| 35 | Belinda Fajardo | Chief, EMS | ESSO-A, PAGASA | 304-3287 |
| 36 | Eduardo V. Santos | Engineer III | DPWH - NCR | 304-3847 |
| 37 | Josel B. Dolivar | Engineer II | DPWH - NCR | 304-3847 |
| 38 | Rolli P. Encarnacion | Service Chief | PAGASA | 304-3287 |
| 39 | Ignacia M. Ramos | Engineer III | ESSO | 304-3287 |
| 40 | Andres Quiambao | President | Talima Philippines | 251-5003 |
| 41 | Henry Tengsico | Auditor | Talima Philippines | 251-5003 |
| 42 | Carlito S. Talenjale | ADA-OFF | Talima Philippines | 251-5003 |
| 43 | Hiroshi Tsuda | JICA Expert | PMO - FCSEC | 628-1227 |
| 44 | Nobuhisa Takeda | JICA | | |
| 45 | Takaaki Kusarabe | JICA (MLIT) | | |
| 46 | Atsushi Nakayama | JICA | | |
| 47 | Aquilina Decilos | Engineer III | DPWH, Counterpart | 304-3482 |
| 48 | Estelita M. Leonado | Economist | DPWH, Counterpart | 304-3350 |
| 49 | Diana J. Parubrub | Database | DPWH, Counterpart | 304-3098 |
| 50 | Myrna M. Rodriguez | Engineering Asst. A | DPWH, Counterpart | 304-3787 |
| 51 | Mar G. Tolentino, Jr. | Engineer IV | DPWH, Counterpart | |
| 52 | Jesus J. Averilla | SEMS | DPWH, Counterpart | |
| 53 | Leonardo Sanchez | Engineer | DPWH, Counterpart | |
| 54 | Manuel Leano | Engineer III | DPWH, Counterpart | |
| 55 | Leonila P. Mercado | Engineer IV | DPWH, Counterpart | |
| 56 | Lito B. Manoos | Engineer III | DPWH, Counterpart | |
| 57 | Engr. Napoleon Famadico | Engineer | DPWH, Counterpart Leader | |
| 58 | Mary Grace Agoncillo | Staff Dir HRMD | PIA | |
| 59 | Nelia Lina | I.O. II | PIA | |
| 60 | Erick G. Gulifardo | CAO II | DENR – MBEMP | |
| 61 | Jodie Ann Lizada | | PWU | |
| 62 | Donnalyn Naquita | | PWU | |
| 63 | Lynn Michelle Napuli | | PWU, Ecology Club | |
| 64 | April Rose Perez | | PWU, Ecology Club | |
| 65 | Nestor Luwalhati | PMO-A | | |
| 66 | Lerma Rosario | Div. Mgr. EPMO | MWSS | |
| 67 | Dr. Felixberto H. Roquia | Public Participation | JICA Study Team | |
| 68 | Hajime Tanaka | Team Leader | JICA Study Team | |
| 69 | Takayuki Nobe | Deputy Team Leader | JICA Study Team | |
| 70 | Tadanori Kitamura | Hydraulic | JICA Study Team | |
| 71 | Grace Milanio | Project Secretary | JICA Study Team | |
| 72 | Rosgel Gamala | Asst. Project Secretary | JICA Study Team | |

# Public Participation Workshop-5

Date: 8:00- 17:00 January 19, 2005
Place: Traders Hotel, Manila

# 5TH WORKSHOP FOR THE ENHANCEMENT OF PUBLIC PARTICIPATION STRENGTHENING OF CAPABILITIES FOR THE SUSTAINABLE OPERATIONS AND MAINTENANCE OF THE DICAMM PROJECT

The workshop was the 5th of the series of project workshops intended for the enhancement of the public participation in drainage improvement. It was done at the Ballroom A, 2nd floor Trader's Hotel, Manila, January 19,2005 from 8 to 5 p.m.

The first part of the workshop started with the singing of the National Anthem lead by Engr. Leonila Mercado followed by an invocation done by Engr.Myrna Rodriguez. Eng. Mario Navarro, gave the opening remark emphasizing the Operation and Maintenance as crucial in project implementation, Mr. Jess Averilla then followed with the introduction of the participants. This was attended by a total of forty-nine (49) participants representing Pasay City, Makati City, Manila City, Quezon City, Caloocan City and the Municipality of Taguig. Also in attendance were the DPWH, MMDA, DENR, PNP, and TALIMA PHILS.(NGO), ACADEME (PWU), and the BUSINESS SECTOR.

The main part of the workshop started with Mr. Takayuki Nobe, JICA Study Deputy Team Leader presenting the progress of the Feasibility Study on Priority Projects. In like manner Mr. Akinori Sato, JICA Study Deputy Team Leader for environment presented the results of the BEM-ESTERO Pilot Experimental Study and its positive effect on the pilot barangays of Barangay 46, Pasay City, Barangay 195, Manila City and Barangay Palanan, Makati City. The session was followed with the presentation of the rationale and objectives of the workshop presented by Mr. Jess Averillla, followed by Dr. Felixebrto H. Roquia, Jr., JICA Study Team Public participation expert, discussing the workshop methodology. The participants grouped themselves accordingly and worked on the assigned task, the results of which they presented in a plenary session.

The workshop ended with Dr. Roquia wrapping-up the activities of the session. Engr. Rebecca T.Garasuta, member TWG of the DICAMM, gave her closing remarks reiterating the vital role of the LGU and other government and non-government agencies in the sustainability of the project. This was followed by the awarding of certificates of attendance by Engr. Famadico, and Mr. Tanaka and Engr. Garsuta.

**Rationale:**

The 5th workshop for the enhancement of public participation shall focus on the STRENGHTENING OF CAPABILITIES FOR SUSTAINABLE O&M based on the results of the 4th workshop (Guidelines for Operations and Maintenance). This shall be considered in drawing of the specific roles of the LGU, GO, PO and NGO in the implementation of the DICAMM project per city from pre-construction, construction and operation. Likewise, guidelines for the monitoring of the O & M shall be prepared to assure its effective implementation.

**Objectives:**

1.To review the results of the 4th workshop and classify the O&M as activities for pre-construction, construction and operation.
2.To identify the responsible specific LGU, GO, NGO & PO in the implementation of the O & M during the pre-construction, construction and operation of the DICAMM project.
3.To prepare the guidelines for the monitoring of the O & M implementation of the DICAMM Project.

**Methodology:**

- Review the presentation of the JICA Study Team regarding the proposed O & M of the DICAMM project.
- Review the Operations and Maintenance guidelines prepared in the 4th workshop.
- Classify the guidelines according to the phase that it is applicable (pre-construction, construction, operation)
- Identify the specific agency that will be responsible for the particular O & M. (write on the matrix provided)
- Prepare the monitoring plan for each particular O & M. (write on the matrix provided)

**WORKSHOP RESULTS:**

***SOUTH MANILA (Pasay City, Makati City and Taguig City)***

**I. PRE-CONSTRUCTION**

| **A. Structural Measures** | **Responsible In-charge ( LGU, GO, NGO, PO )** | **Operation** | **Maintenance** | **Monitoring of Operation & Maintenance** |
|---|---|---|---|---|
| **1. Rehabilitation of Drainage Channels**<br>a. Main<br>b. Lateral | MMDA<br>LGUs/Brgy. | Declogging/Dredging/ Desilting | Periodic declogging/desilting | DIMO,PMO,MMDA, LGU,Brgy. & NGO |
| **2.Rehabilitation works of Drainage Pumping Station** | MMDA | Repair and Replacement of Parts | Annual equipment check-up, schedule & overhauling.<br>Set up trash fence, Protective fence & Easement maintenance Road. | DIMO-PMO,MMDA |
| **3. Additional Works for South Manila** | MMDA | Construction of main additional Box Culvert.<br>Demolition/Removal of existing illegal structures within required easement. | Periodic Declogging<br><br>Periodical check-up & continuous monitoring of illegal constructing of structure within the river mains & channel. | DIMO-PMO, MMDA |

| B. Non-Structural and Supporting Structures | Responsible Agency In-charge (LGU, GO, NGO, PO ) | Operation | Maintenance | Monitoring of Operation & Maintenance |
|---|---|---|---|---|
| **1.Relocation of Informal Settlers** | DPWH-NCR; LGUs; NHA | DICAMM Project Team to provide LGUs a masterlist of Informal Settlers encroaching the "esteros"<br>*Makati* – LIAC-IS to convene and discuss the following:<br>a. Conduct of Assembly for the affected areas,<br>b. Provide thirty (30) days notice to relocatees,<br>c. Conduct site visit of beneficiaries to relocation area<br>*d.* Coordinate with DPWH-NCR and accepting LGU re: basic needs of relocatees such as health, education, livelihood, utilities etc.<br><br>*Pasay* – Local Housing Board (LHB) meeting/dialogue with the informal settlers or Homeowner's Association establishments and organizations of BEM of affected barangays<br><br>*Taguig*- Notice to the affected informal settlers | Coordinate w/ BEM & DPWH-NCR for the construction of barriers to prevent encroaching of IS<br><br>Action Plan for relocation on O/M of waterways | 1. Consultation/Meeting w/ LIAC-IS and DPWH-NCR re: relocatees concerns:<br>a. Demolition<br>b. Safety measures<br>c. Food assistance<br>d. Transport services<br>2. Progress Report be provided to the Mayor for his information and comments<br><br>Regular meeting of BEMs Together with LGUs and DPWH-NCR |
| **2. Solid Waste Management** | Solid Waste Management Division SWMD (LGU) in coordination with DPWH-NCR and MMDA | Collection of garbage (LGU); hauling (MMDA) | MMDA will provide the special equipment for hauling of waterways sediments | Monitoring/compliance of RA 9003 |

| | | | | |
|---|---|---|---|---|
| **3. Information, Education and Communication** | LIAC-IS (Local Inter-Agency Committee) Informal Settlers:<br>a. Social Welfare Dept.<br>b. Engineering<br>c. Solid Waste Mgt. Div.<br>d. Police<br>e. Health<br>f. DILG<br>g. NHA<br>h. Housing<br>i. Barangay<br>j. NGOs<br>k. PCUP | Conduct General Assembly *"Ugnayan"* in the affected barangays w/in the scope of the DICAMM project and identify the respective agencies involved in the project such as Engineering, Social Welfare, (LGUs) | Continuous dialogue with concern stakeholders and lead agencies | Review of previous activities such as: Social Development Plan (SDP) |

## II. CONSTRUCTION

| **A. Structural Measures** | **Responsible In-charge (LGU, GO, NGO, PO )** | **Operation** | **Maintenance** | **Monitoring of Operation & Maintenance** |
|---|---|---|---|---|
| **1. Rehabilitation of Drainage Channels**<br>1. Main<br>2. Laterals | MMDA<br>LGUs | Declogging/ Hauling/Disposal | Continuous Monitoring of the project | DIMO,MMDA/LGUs<br>Barangay |
| **2. Rehabilitation works of Drainage Pumping Station** | MMDA | Set up of trash screen/protective Fence/Easement Maintenance Road | | DPWH/JICA/MMDA |
| **3. Additional Works for South** (drainage main declogging, additional box culvert, interceptor construction/ improvement) | MMDA | Construction of additional Box Culvert | Periodic Declogging/Desilting | MMDA, DIMO,PMO,LGU, Brgy |
| **B. Non- Structural and Supporting Structures** | **Responsible In-charge (LGU, GO, NGO, PO)** | **Operation** | **Maintenance** | **Monitoring of Operation & Maintenance** |
| **1. Relocation of Informal Settlers** | LGUs; barangay | - | LGUs – Barangay should create a Barangay monitoring team to monitor the area | |
| **2. Solid Waste Management** | SWMD (LGU); MMDA | Collection of garbage (LGU); hauling (MMDA) | MMDA will provide the special equipment for hauling of waterways sediments | Monitoring/compliance of RA 9003 |
| **3. Information, Education and Communication** | DPWH, LGU, MMDA | Multimedia information materials for the on-going construction activities | Information materials on traffic management as related to on-going construction | MMDA & City Traffic Management |

## III. OPERATIONS

| **A. Structural Measures** | **Responsible In-charge (LGU, GO, NGO, PO )** | **Operation** | **Maintenance** | **Monitoring of Operation & Maintenance** |
|---|---|---|---|---|
| **1. Rehabilitated Drainage Channels** | MMDA/LGUs | Continuous Operations of Dredging.<br>Provision of Protective Fence,<br>Trash Catchment Screen &<br>Easement/Maintenance Road. | Purchase of much needed equipment.<br><br>Hiring of additional Competent maintenance personnel | DIMO-PMO, MMDA, LGUs |
| **2. Rehabilitated Drainage Pumping Station** | MMDA | Continuous training of O & M staff/hire competent maintenance operators | Allocate adequate funds for maintenance purposes | National Government |
| **3. Additional Works for South Manila**<br>Construction of Box Culvert | MMDA/LGUs | Periodic Inspection of Maintenance Hole | - Provision of Barricade or Enclosure fence.<br>Provision of safety sign:<br>1. Traffic Construction safety | DIMO-PMO, MMDA, LGUs |
| **B. Non-Structural and Supporting Structures** | **Responsible Agency In-charge (LGU, GO, NGO, PO)** | **Operation** | **Maintenance** | **Monitoring of Operation & Maintenance** |
| **1. Relocated Informal Settlers** | - Coordination with DEPW NCR and MMDA to LGUs concerned | Enforcement of City Ordinance on informal Settlers | Assign City & Barangay officials to enforce the law | Regular monitoring by Barangay tanod of informal settlers |
| **2. Solid Waste Management** | SWMD (LGU);<br>MMDA | Assist in the collection of debris left during the dismantling activities; logistics | | Regular monitoring of Collection activity |
| **3. Information, Education and Communication** | LGU, PO | Information leaflets on the maintenance & sustenance of project operation | City Ordinance posted in strategic areas for project O & M | City Engineer, City Sanitation & Safety monitoring of strict complaince |

*NORTH MANILA (Quezon City, Caloocan City and Manila City)*

## I. PRE-CONSTRUCTION

| **A. Structural Measures** | **Responsible In-charge (LGU, GO, NGO, PO)** | **Operation** | **Maintenance** | **Monitoring of Operation & Maintenance** |
|---|---|---|---|---|
| Rehabilitation of Drainage ChannelS | MMDA,LGU, DPWH, Bgy. | Acceptance of Completed Project based on standards | Implementation of regular maintenance of completed projects | Monitoring by concerned agencies/ COA/ |
| Rehabilitation Works of Drainage Pumping Station | DPWH, MMDA | - do - | - do - | - do - |

## II. OPERATION

| **A. Structural Measures** | **Responsible/ In-Charge** | **Operation** | **Maintenance** | **Monitoring of Operation & Maintenance** |
|---|---|---|---|---|
| Additional Works for North Manila | DPWH, MMDA, LGU,s, NGO's, Bgys | Acceptance of Completed Project based on standards | Implementation of regular maintenance of completed projects | Monitoring by concerned agencies |
| Non-structural Relocation of Informal Settlers | LGU, NGO's Bgy. | Sustainance livelihood program | | Monitoring by PO's |
| Solid Waste Management<br><br>(IEC) | MMDA, LGU, Bgy's | Continuous Operation of BEM | • Awareness campaign drive (continuous)<br>• Full implemenation of R.A. 9003 & other related local ordinances | Activation SWM Board Bgy. Level |
| IEC (Information, Education, Communication) | All agencies concerned | Installation and distribution of IEC tools | Continuing IEC activities | Activation Health & Sanitation Committee at Bgy. Level |

**The Study on Drainage Improvement in the Core Area of Metropolitan Manila**

**5th PUBLIC PARTICIPATION WORKSHOP**

**January 19, 2005 (Wednesday), 8:00 a.m. – 5:00 p.m.**

**Ballroom A, Traders Hotel, Roxas Boulevard, Pasay City**

## PARTICIPANTS LIST

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| 2 | Mr. Takayuki NOBE | Deputy Team Leader, Drainage Planning 1 | JICA Study Team | |
| 3 | Mr. Akinori SATO | Deputy Team Leader/Solid Waste Management | JICA Study Team | |
| 4 | Mr. Tadanori KITAMURA | Hydraulics/Drainage Planning 2 | JICA Study Team | |
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| 49 | Ildefonso de Leon | SWMD | Makati | 899-9057 |

# Public Participation Workshop-6

Date: 8:00- 17:00 March 2, 2005
Place: Traders Hotel, Manila

**6TH WORKSHOP FOR THE ENHANCEMENT OF PUBLIC PARTICIPATION STRENGTHENING OF CAPABILITIES FOR THE SUSTAINABLE OPERATIONS AND MAINTENANCE OF THE DICAMM PROJECT**

**" FORUM-WORKSHOP FOR THE PARTICIPATION OF THE LGU AND CONCERN GOVERNMENT AND NON-GOVERNMENT AGENCIES IN THE INTEGRATION AND IMPLEMENTATION OF THE DICAMM PROJECT "**

The workshop was the 6th of the series of project workshops intended for the enhancement of the public participation in drainage improvement. It was done at the Ballroom A, 2nd floor Trader's Hotel, Manila, March 2, 2005 from 8 to 5 p.m.

The first part of the workshop started with the singing of the National Anthem lead by Engr. Leonila Mercado followed by an invocation done by Ms. Estelita Leonado. Eng. Mario Navarro, gave the opening remark highlighting the accomplishments of DICAMM study and the results of which is shared to the stakeholders for its consideration in their City Development Plan, these was followed with the introduction of the participants. This was attended by a total of one hundred twenty-nine participants representing Pasay City, Makati City, Manila City, Quezon City, Caloocan City and the Municipality of Taguig. Also in attendance were the DPWH, MMDA, DENR, PNP, and TALIMA PHILS.(NGO), ACADEME (PWU), and the BUSINESS SECTOR. Mr. Jess Averilla, Head for Social and Solid Waste Management gave a brief lecture on "Public Participation" and presented the Rationale and Objectives of the Workshop-Forum.

The main part of the workshop started with Engr. Napoleon Famadico, DPWH counterpart Team leader, presenting the status of the Project activities by outlining the major activities of the project. Presenting the draft final report: Mr. Takayuki Nobe, JICA Study Deputy Team Leader discussed the Priority Projects and the structural work that are to be done. Ms. Sonoe Yamada, JICA Study Team Social Issue/ Public Participation I expert presented the preliminary Resettlement Action Plan (RAP) report indicating the importance of the sending and receiving LGUs in the process. Mr. Akinori Sato, JICA Study Deputy Team Leader for Environment and Solid Waste discussed the results of the BEM-ESTERO Pilot Experimental Study and its positive effect on the pilot barangays based on the evaluation of Barangay 46, Pasay City, Barangay 195, Manila City and Barangay Palanan, Makati City. Likewise, he shared recommendations on the Community Solid Waste Management process and organizational set-up. The session was followed with an Open-forum moderated by Dr. Felixberto H. Roquia, Jr., JICA Study Team Public participation (see attach proceeding). The afternoon session started with a discussion of the workshop methodology followed by the participants grouping themselves according to City. The groups worked on the assigned task, the results of which they presented in a plenary session.

The workshop ended with Dr. Roquia wrapping-up the activities of the session. Engr. Rebecca T.Garasuta, member TWG of the DICAMM, gave her closing remarks reiterating the vital role of the LGU and other government and non-government agencies in the sustainability of the project. This was followed by the awarding of certificates of attendance by Engr. Famadico, and Mr. Tanaka and Engr. Rebecca Garsuta.

**II. Results of the Open Forum**

*Open Forum*

1) Ms. Barsinas – Liga, Makati

On rehabilitation of aged pumping station, how much will it cost to rehabilitate the pumping station?

Mr. Takayuki Nobe

Pump equipment in twelve (12) pumping stations will be repaired and/or replaced. The estimated cost for this is about 2 billion pesos. Compared to construction of new one, it is less costly, because only damage portion will be repaired and/or replaced. For old pumping stations (30 yrs.), electrical parts should be replaced, after detailed rehabilitation survey will be conducted.

2) Mr. Oscar Bayamonde- ACADEME – PWU

This looks like the project of JICA and DPWH. I think MMDA should be present all through out in this project since one of major function of MMDA is improving flood control.
What is the arrangement between the JICA and MMDA?

Mr. Takayuki Nobe

It is proposed to establish coordination committee for over-all matter. Under coordination with MMDA, NEDA, LGUs, DPWH, PCUP, HUDCC, DSWD and MWSS, 90% will be administered by MMDA since MMDA is handling the present Drainage System.
It is proposed that DPWH be the secretariat of PMO for structural, non-structural and supporting measures.

Mr. Oscar Bayamonde- ACADEME – PWU

- BEM concept still exists; question on sustenance and leadership.
- Fix people component problem.
- In 2007, change of management is expected.
- A need to do more study looking at people side.

Mr. Takayuki Nobe

As non-structural and supporting measures, Information, Education, Communication (IEC) campaign should be conducted. It is proposed in the study.

Mr. Akinori Sato

BEM-ESTERO group is proposed. I know that there have been existing groups like this before. However, there was no development. We give some ideas and opportunities for the people to develop the process with their initiative.

Dr. Felixberto Roquia

The uniqueness of the BEM as conceptualize by Mr. Akinori Sato evolved a kind of training for the barangay such as the **Transect Walk** in order to understand the resource based of their community situation, **Trend Setting** development of the barangay from the past to the present,

see how the barangay looked like 20 years ago to the present, **SWOT Analysis** problem tree and solution tree. The most important aspect of the strategy is that it is not only on the conceptual level but how it is applied in their everyday life.

3) Mr. Florencio Vergara – NCR

Do we have the means in handling out and implementing this kind of project? Aren't we afraid losing the significance of the study, data or details? Aren't we afraid about significance of the study on the shortening of time table?

Eng. Napoleon Famadico – DPWH

DPWH has submitted funds requirement fro coming 5 years. However, this project is not included. It will be required to adjust.

Eng. Rebecca T. Garsuta

One of the suggestions brought out is sharing of finances. LGUs should share on the cost for BEM activities.

4) Mr. Jun Diwa- EMB-DENR

Has the disposal site been identified for this project? Have the toxity levels and composition materials been analyzed?

Mr. Takayuki Nobe

Proposed dumping site for dredged materials is the site where KAMANAVA project uses as dumping site.

Mr. Akinori Sato

Analyzed heavy metal is lower than the standard based on the Philippine regulations. It is proposed that the dredged material will be monitored base on its frequency of increasing risk.

5) Mr. Jun Diwa –EMB – DENR

Did you conduct consultation with residents living near the disposal site?

Mr. Akinori Sato

KAMANAVA project including the dumping site has already got Environmental Compliance Certificate (ECC) when the project was proposed.

6) Mr. Edgar Soriano – Manila

In the Phase of Feasibility Study, did the Study Team try to find missing esteros, natural drainage system? Is there a plan to locate and regain missing esteros?

Mr. Tadanori Kitamura

We have been trying to find the missing esteros from the beginning of the study. However, we had a difficult time to find the missing esteros. Some might be left without being identified. All of the identified esteros are recorded in the database developed in the study.

It is recommended in the master plan to start to regain the identified esteros, because those are also missing if we will do nothing.

*COMMENTS / SUGGESSTIONS*

Eng. Napoleon Famadico

DPWH should make effort against the existing problems regarding implementation and assistance.

Mr. Ilao – Manila

The problem such as the throwing of garbage to esteros has been already discussed. Who will be the implementing agency? We need the authority of the Republic of the Philippines to dredge the esteros/ city of Manila.

The open forum ended with all participants concluding that all their concerns regarding the project based on the presentations were addressed.

## III. The Workshop

### RATIONALE:

The Local Government Units, government and non-government agencies are mandated to consider programs and projects that are vital for the well-being of their constituents they serve. The DICAMM Project which responds to the flooding problem of the core cities of Manila, has been done to improve the life-ways of those directly affected as well as assuring them for a better environment for their children. Thus the integration of the DICAMM PROJECT into the LGU development plans and its implementation becomes imperative.

### OBJECTIVES:

1. To update the participants of the status of the project.

2. To present the final draft of the DICAMM project.

3. To elicit reactions and comments from the participants.

4. To let the LGUs in coordination with the concern government and non-government agencies integrate the DICAMM project in the implementation of their Development Plan.

### METHODOLOGY:

1. The group shall be chaired by the City Development Officer, Co-chaired by the City Engineer and facilitated by a DPWH JICA Study counterpart.

2. Review the City Development Plan for Drainage Structural, Non-structural and Supporting Measures.

3. Discuss how the proposed DICAMM project could be incorporated into the city's Development Plan.

4. Prepare a matrix presentation on how the DICAMM project is incorporated into the Development Plan and the mechanism of implementation (who implements & how shall it be done).

5. Present the results in the plenary session.

**RESULTS:**

**MATRIX OF INCORPORATION AND IMPLEM ENTATION**

**QUEZON City**

| | **City Development Plan** | **DICAMM Project** | **Incorporated DICAMM Project into CDP** | **Implementing Body (LGU, GO, NGO & Barangay)** |
|---|---|---|---|---|
| **Structural (dredging & declogging)** | Dredging & Declogging of box culvert along M.Cuenco St. up to Blumentritt Interceptor | Dredging & Declogging of Box Culvert along M. Cuenco St. up to Blumentritt Interceptor | DICAMM Project will address a part of the Dredging & Declogging of box culvert along M.Cuenco St. up to Blumentritt Interceptor which is also part of the CDP | Quezon City Government<br><br>MMDA<br><br>Affected Barangays |
| **Non-structural (Flood plain Management. and run off)** | On –going rehabilitation of parks and playgrounds within Quezon City under the beautification program | Develop open spaces and playgrounds into catchments during rainy season | Assess the area within the identified Blumentritt interceptors to be considered as catchment areas | Quezon City Government<br>Barangays:<br>• Paang Bundok<br>• Sta. Teresita<br>• Salvacion<br>• San Isidro Labrador |
| **Supporting Measures (Improvement of Operation and Maintenance system: Solid Waste Mgt. & Resettlement of Informal Settlers)** | Implementation of R.A. 9003(2002) particularly the segregation of garbage at source & strict implementation of “NO SEGREGATION NO COLLECTION” scheme and establishment of MRF at barangays Paang Bundok, Sta. Teresita, Salvacion & San Isidro Labrador | Introduction of the Barangay Environment Management Plan through the organizing of the BEM-ESTERO<br><br>Implementation of R.A. 9003 particularly the segregation of garbage at source & strict implementation of “ NO SEGREGATION NO COLLECTION” scheme and establishment of MRF at barangays | Integrate the BEM-ESTERO into CDP | Quezon City Government<br>MMDA<br>Barangays:<br><br>• Sta. Teresita<br>• San Isidro Labrador<br>• Salvacion<br>• Paang Bundok |

**MANILA**

| | City Development Plan | DICAMM Project | Incorporated DICAMM Project into CDP | Implementing Body (LGU, GO, NGO & Barangay |
|---|---|---|---|---|
| **Structural** (dredging & declogging) | • Dredging of Pasig river<br>• Declogging of existing estero<br>• Declogging/improvement of secondary drainage canal<br>• Rehabilitation of 11 pumping stations | • Dredging of esteros/creeks<br>• Declogging of drainage main Improvement and rehabilitation of drainage pumping stations<br>• Drainage improvement, additional culvert box channels<br>• The Construction of stop log gate and rising of cover of maintenance hole | Declogging/improvement of secondary drainage canal | DEPW<br>MMDA, DPWH |
| **Non-structural** | • Enforcement of City ordinance in maintaining legal estero easement (3m both sides)<br>• Parks and open space development<br>• Upgrading/updating of City Zoning and Land Use Plan | | • Enforcement of City ordinance in maintaining legal estero easement (3m both sides)<br>• Parks and open space development<br>• Upgrading/updating of City Zoning and Land Use Plan | DEPW, DSW, Barangay unit<br>DEPW, PDO<br>CPDO/City council |
| **Supporting Measures** | • Resettlement of informal settlers<br>• Implementation of Solid Waste Management<br>• Maintenance and improvement of Solid Waste Disposal site (Pier 18)<br>• IEC drive Barangay level<br>• Upgrading of O and M System<br>• Linear Park Development (Pasig river) | • PAP (Resettlement Action Plan)<br>• Community based Solid Waste Management<br>• IEC against Solid Waste dumping<br>• Beautification | • Implementation of Solid Waste Management<br>• Maintenance and improvement of Solid Waste Disposal site (Pier 18)<br>• IEC drive Barangay level<br>• Upgrading of O and M System | LGU, DSW, DEPW, NHA, PCUP, Barangay unit, HUDCC<br>DPS<br>Barangay unit<br>LGU (DEPW)<br>CPDO, DEPW, PDO |

**MAKATI CITY**

| | | | | |
|---|---|---|---|---|
| **Structural** | Laterals dredging and<br>A. Declogging<br>1) Palanan<br>2) San Isidro<br>3) San Antonio<br>B. Yearly cleaning of Calatagan creek | 1) Declogging/ Additional boxCulvert of Zobel Roxas and Faraday<br>2) Declogging at Pasong Tamo<br>3) Dredging of Calatagan creek<br>4) Dredging of PNR creek and Tripa de Gallina | 1) Declogging of Zobel Roxas, Faraday, Pasong Tamo<br>2) Dredging of PNR creek | LGUs and Barangay NGO (Ayala Properties) |
| **Non-Structural** | a. Formulation of Environmental Management Plan (EMP)<br>b. Clean and green programs and beautification projects through rehabilitation and construction of parks<br>c. Comprehensive land use plan (CLUP) | a. Storm water retention facilities | | LGUs and barangays |
| **Supporting measures** | a. SWM- included in ten year SWM plan<br>b. Resettlement of informal settlers in environmental protection areas/ dangerous zones | BEM project will be incorporated in other barangays | a. Projects and plan of DICAMM has been included in the CDP of Makati<br>b. To prioritize DICAMM covered areas<br>- Palanan<br>- San Isidro<br>- San Antonio<br>- La Paz<br>- PDP | LGU<br>- Housing<br>- Liga ng mga<br>- Barangay<br>- Planning office<br>- DES solid wastes<br>- Engineering |

**PASAY CITY**

| | **City Development Plan** | **DICAMM Project** | **Incorporated DICAMM Project into CDP** | **Implementing Body (LGU, GO, NGO & Barangay** |
|---|---|---|---|---|
| **Structural (dredging & declogging)** | ▪ Dredging of Tripa de Gallina<br>▪ Declogging of Buendia Outfall | ▪ Dredging of Tripa de Gallina<br>▪ Declogging of Buendia Outfall | Affected brgys.-43,46,51,54&157 | DPWH in coordination with brgys. |
| **Non-structural (Flood plain Management. and run off)** | Encourage water impounding areas in buildings | Buildings, houses, schoolsb, hospitals and other establishments. | Information and Education Campaign | DPWH, LGU and Barangays |
| **Supporting Measures (Improvement of Operation and Maintenance system: Solid Waste Mgt. & Resettlement of Informal Settlers)** | Possible location of dumpsites and MRF Resettement of Informal Settlers along the creek. | Expansion of BEMs and Resettlement of Informal Settlers. | Conduct trainings and alternative livelihood programs and seminars | DPWH, NHA, PCUP in coordination with LGU. |

**The Study on Drainage Improvement in the Core Area of Metropolitan Manila**

**6th PUBLIC PARTICIPATION WORKSHOP**

**March 2, 2005 (Wednesday), 8:00 a.m. – 5:00 p.m.**

**2nd Floor, Traders Hotel, Roxas Boulevard, Pasay City**

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| 18 | Felixberto H. Roquia Jr. | JICa Study Team | Public Participation | |
| 19 | Florencio Vargas | PRO | NCR | |
| 20 | Mario G. Navarro | Proj. Manager II | DPWH-PMO-MFCP | 304-3815 |
| 21 | Maria Ortega | student | PWU | 09167138069 |
| 22 | Elsie D. Dimaandal | student | PWU | 09276045244 |
| 23 | Henry Tengsico | Member | TALIMA Phils | 09206045922 |
| 24 | Rebecca T. Garsuta | Engineer V | DPWH | 304-3140 |
| 25 | Mario B. Lagbas | Engineer II | NCR | 304-3849 |
| 26 | Francisco M. Limeta Jr. | Engr. III | NCR | 304-3849 |
| 27 | Oscar Bajamonde | academe | TALIMA Phils | |
| 28 | Andy Quiambao | President | TALIMA Phils | |
| 29 | Florencio G. Diwa Jr. | EMS II | EMB-NCR(DENR) | |
| 30 | Allan S. Ibasio | PDO I | EMB-NCR | |
| 31 | Paula Carandana | student | PWU | 09212006744 |

| No. | Name | Position | Organization | Contact # |
|---|---|---|---|---|
| 32 | Catherine Joy Malinao | student | PWU | 09215259739 |
| 33 | Krisel Dayao | student | PWU | 09155868855 |
| 34 | Jun Santos | EA- Technical Service | LGU Rodriguez | 947-1295 |
| 35 | Dominica P. Godinez | SMO 3 | DSWD-NCR | 734-8618 |
| 36 | Glenda T. dela Cruz | PMO III | PCUP | 410-4712 |
| 37 | Florentino B. Santos | Tech Com Adviser | Task Force Noah | 752-7925 |
| 38 | Wolfredo F. Galang | Engr. III | ESSO-DPWH | 304-3287 |
| 39 | Belinda I. Fajardo | Chief, EMS | ESSO | 304-3287 |
| 40 | Nonelon B. Flores | Engr. III | ESSO-DPWH | 304-3287 |
| 41 | Ignacia M. Ramos | Engr. III | ESSO-DPWH | 304-3287 |
| 42 | Daniel Valencia | Engr. I | LGU | 628-1999 loc 359 |
| 43 | Demetrio L. Pilar | Engr. I | LGU | 628-1999 loc 583 |
| 44 | PSupt. Valentino Santacera | C,DPCR | CPDO, PNP | 436-8550 |
| 45 | Fernando Felipe | H & HRO II | UPAO, Q.C. | 929-1524 |
| 46 | Roneo Remo | H & HRO II | UPAO, Q.C. | 929-1529 |
| 47 | Prof. Tito Balaysoche | Consultant | BOC, Q.C. | 924-1417 |
| 48 | Aris Bague | PDO I | City Planning/Dev't Office | 922-4554 |
| 49 | Nick Policarpio | OIC-Monitoring | LGU-Caloocan | 323-5742 |
| 50 | Carole G. Borleo | Secretary | Manila | 258-9308 |
| 51 | Conado C. Geronimo | Kagawad | Rodriguez, Manila | 233-6624 |
| 52 | Rosalina F. Fernando | | | 251-9925 |
| 53 | June Bamba | Legal Officer | Q.C. Legal | 922-3229 |
| 54 | Nemie Miranda Sr. | | Q.C. Liga | 922--3229 |
| 55 | Nemie Miranda Jr. | | Q.C. Liga | 922-3229 |
| 56 | Carol O. Patalinghog | Social Welfare Officer II | SSDD, Q.C. | 927-1588 |
| 57 | Col. Rito Ilao | Punong Brgy. | Bgy. 847-92-VI | |
| 58 | Myrna L. Bermundo | Kagawad | | 233-3204 |
| 59 | Alicia Icasiano | Kagawad | | 251-2369 |
| 60 | Gilfredo B. Caparon | Liason Officer | G.C. Sta. Teresita | 731-7539 |
| 61 | Jovie S. Tubianosa | Volunteer BSDO | Q.C. Sta Teresita | 731-7539 |
| 62 | Clark Kent P. Branda | Volunteer BSDO | Q.C. Sta. Teresita | 731-7539 |
| 63 | Delia S. Ibay | Punong Barangay | Brgy. 765-2-83 | 563-1643 |
| 64 | Leticia S. Yang | Brgy. Chairman | Brgy. 758-82-V | 303-0629 |
| 65 | Edgar A. Soriano | Engineer V | DEPW-Manila | 527-4971 |
| 66 | Erlinda S. Ramos | Brgy. Chairman | Brgy. 180-z 16 | 256-6154 |
| 67 | Wilfreda S. Castillo | Kagawad | Brgy. 182-Z 16 | 233-6711 |

| No. | Name | Position | Organization | Contact # |
|---|---|---|---|---|
| 68 | Rosalie R. Alfaro | Kagawad | Brgy. 182 | 252-8179 |
| 69 | Fortunato M. Borre | Kagawad | Brgy. 182 | 252-8179 |
| 70 | Susana M. Cruz | CDO III | OCD-NCR | 911-3038/ 09266323644 |
| 71 | Patricia C. Almoneda | Engr. I | CEO Pasay City | 831-2446 |
| 72 | Achilles L. Robisa | Planning Officer I | CPDO-Pasay City | 834-0433 |
| 73 | Benjamin Evangelista | Kagawad | Brgy 46 | 524-1725 |
| 74 | Art. C. Gaylican | Chairman | Brgy. 46-Zone 6 | 524-1725 |
| 75 | Maria Cristina M. Tingsiong | Clerk II | UPAO-Pasay | 833-1174 |
| 76 | Edgardo J. Samedra | Chairman | Brgy. 65-Zone 8 | 845-4440 |
| 77 | Delia Camacho | OIC | Pasay | 831-8871 |
| 78 | Essexzabdiel dele Pax | HHRO Assitant | Housing Board | 833-1174 |
| 79 | Martha L. dela Paz | Chief HHRO | Housing Board | 833-1174 |
| 80 | Isabelita B. Nalaunan | Draftsman | Housing Board | 833-1174 |
| 81 | William Logio | SI | Health | 551-2026 |
| 82 | Rosendo Cabanayan | | Health | 551-2026 |
| 83 | Peter E. Maquito | Kagawad | | 854-3229 |
| 84 | Editha Ruazul | OIC-Tenement Housing Div. | LGU-Makati | 895-7950 |
| 85 | Lerma B. Turqueza | CAO I | LGU-Makati | 895-7950 |
| 86 | Roel C. Arevalo | BEM | Brgy. Palanan | 551-9007 |
| 87 | Emmanuelito Tanie de Castro | Planning Officer | LGU-Makati | 870-1738 |
| 88 | Efren Aricha | Social Welfare Officer | LGU-Makati | 899-9037 |
| 89 | Ligaya M. Barcians | LIGA Adm. | Liga ng mga Brgy. | 897-5664 |
| 90 | Visitacion D. Gueta | Liga Planning | Liga ng mga Brgy. | 897-5664 |
| 91 | Vicente Umengan | Eng'g. PDO | | 870-1202 |
| 92 | Norman D Austria | PEA I | City Eng'r. Office | 752-5512 |
| 93 | Erjufel D. P. Dionisio | SWMD-IEC Sector Head | Makati Cuty Gov't. | 870-1727 |
| 94 | Oliver T. Dajao | | | |
| 95 | Lazaro B Isisdro | | | |
| 96 | Annie, Lachica | | | |
| 97 | Romeo S. Valenzuela Jr. | | | |
| 98 | Ramiro L. Tiamzon | | | |
| 99 | Sabina D. Santos | | | |
| 100 | Leo S. del Rosario | | | |
| 101 | Myrna bermundo | | | |
| 102 | Alicia Icasiano | | | |

| No. | Name | Position | Organization | Contact # |
|---|---|---|---|---|
| 103 | Edna Conda | | | |
| 104 | Perfecto P. Abenes | | | |
| 105 | Loida Aguila | | | |
| 106 | Juliet Baylon | | | |

# Barangay Cluster Workshop-1

Date: 8:00- 17:00 July 23, 2004
Place: Bayview Park Hotel, Manila

**THE 1st BARANGAY CLUSTER WORKSHOP FOR THE ENCHANCEMENT OF PUBLIC PARTICIPATION IN THE DRAINAGE IMPROVEMENT OF THE CORE AREA OF METROPOLITAN MANILA**

The Barangay Cluster Workshop was conceptualized for the identified Barangays within the core areas, which will be affected by the construction and enhancement activities of the project. The workshop intended for the enhancement of the direct impact stakeholders' participation in drainage improvement. It was done at the Manila Ballroom, Bayview Park Hotel last July 23, 2004, from 8 to 5 p.m.

The 1st part of the workshop started with the singing of the National Anthem lead by Engr. Lina Decilos followed by an invocation done by Engr. Leonila Mercado. Mr. Ronaldo DL. Moriones, Assistant Director of the Manila Barangay Bureau gave the opening remark; Mr. Jess Averilla introduced the participants of the workshop. This was attended by a total of fifty-six (56) Barangay Chairpersons representing the affected communities of Pasay City, Makati City and Manila City.

The main part of the workshop started with Engr. Napoleon Famadico, the DPWH Team Leader local counterpart, presenting the "Status of the Master Plan". Mr. Hajime Tanaka, JICA Team Leader, then outlined the Master Plan emphasizing that the finalization of the "Master Plan" will be done this August incorporating the output of Public Participation Workshops. This was followed by Dr. Felixberto Roquia, Jr. highlighting the importance of public participation in the Barangay level. He emphasized its importance to ensure the sustainability of the project upon its implementation. Engr. Lito Manoos continued by sharing with the participants the pilot experimental study (BEM-ESTERO) presently being conducted in three Barangays within the core study area. Mr. Jess Averilla then presented the rationale and objectives of the 3rd workshop as follows;

> **Rationale**: Base on the studies for the Master Plan for "Drainage Improvement in the Core Area Of Metropolitan Manila", public participation is crucial for the successful implementation of the project. Considering the project as technically sound, economically feasible and socially acceptable it becomes imperative for the affected cities to critically analyze the major factors that affect the sustainability of the proposed projects in the context of the affected people's life-ways.
>
> **Objective:** To analyze the major factors (Solid Waste Management, Pollution, and Information, Education and Communication) that influences the successful implementation of the project using the (S.W.O.T) STRENGTH, WEAKNESS, OPPORTUNITIES AND THREATS analysis.

Dr. Felixberto H.Roquia, Jr. JICA Team Public Participation Expert then followed with a discussion on the workshop methodology and the expected outputs.

## PASAY-MAKATI-BARANGAYS

### INFORMATION, EDUCATION AND COMMUNICATION

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | **Oppurtunities (Pagkakataon)** | **Threats (Banta)** |
|---|---|---|
| | 1. Development of clean and green barangays<br>2. Well informed/educated public(moral upgrading) | 1. Non-law abiding citizens<br>2. Existence of street crimes<br>3. Not well maintained peace and order situation within the brgy. |
| **Strengths (Lakas)**<br>1. Information dissemination through frequent brgy. meetings, postings and memos<br>2. Full cooperation of brgy. Officials, tanod, SK, other NGO's | **Proposed Solutions**<br>1. Open communication between the local and national government towards the implementation of the projects &/or common problems encountered on creek areas and drainage systems<br><br>**Proposed Enhancements**<br>1. Provisions of trainings & seminars among the residents especially the affected areas<br>2. Inclusion on moral and values subjects on all school levels such information on students | |
| **Weaknesses (Kahinaan)**<br>1. Insufficient funds for campaign materials<br>2. Uncooperative constituents &/or brgy. Officials | | |

### POLLUTION CONTROL

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | **Oppurtunities (Pagkakataon)** | **Threats (Banta)** |
|---|---|---|
| | 1. Commercialized and well-developed barangays<br>2. Job oppurtunities<br>3. Establishment of brgy. amenities | 1. Health hazards<br>2. Economic problems(discourage foreign investors) |
| **Strengths (Lakas)**<br>1. Implementation of clean air act<br>2.Political will of different organizations within the barangay including the brgy. Officials | **Proposed Solutions**<br>1. Implementation of city ordinances/brgy. Ordinances<br>2. Information campaign<br>brgy. Meeting<br>memos<br>3. Regular sustainance of garbage bags<br><br>**Proposed Enhancements**<br>1. Full enforcement of the brgy. Officials/BEM ESTERO for the implementation of the project/s | |
| **Weaknesses (Kahinaan)**<br>1. Community indifferences<br>2. Uninformed public residents of each barangay<br>3. Lack of government support | | |

SOLID WASTE MANAGEMENT

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | Oppurtunities (Pagkakataon) | Threats (Banta) |
|---|---|---|
| | 1. Garbage/wastes-income generating<br>2. Maintenance of a clean and orderly barangay | 1. Health hazard<br>2. Flood |
| **Strengths (Lakas)**<br>1. Organization of BEM ESTERO Team<br>2. Implementation of City Ordinance RA 9003 (Segregation of wastes) | **Proposed Solutions**<br>1. Establishment of composting areas especially the barangays<br>2. Regular collection of garbage/wastes exclusively for creek residents<br>3. Regular cleaning of estero &/or drainage canals | |
| **Weaknesses (Kahinaan)**<br>1. Uncooperative and complaining residents<br>2. Ningas cogon attitude<br>3. Lack of funds | **Proposed Enhancements**<br>1. Full enhancement of Bem &/or brgy/ officials for the implementation of solid waste management<br>2. Provisions of garbage cartoons, plastic bags, trash bins fore proper disposal of garbage wastes | |

## MANILA-BARANGAYS

### INFORMATION, EDUCATION AND COMMUNICATION

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | Oppurtunities (Pagkakataon) | Threats (Banta) |
|---|---|---|
| | 1. Happy barangay<br>2. Easy implementation | 1. Difficulties<br>2. Indifference |
| **Strengths (Lakas)**<br>1. Barangay council<br>2. Barangay assembly<br>3. NGO, BEM & ESTERO Team | **Proposed Solutions**<br>1. Education-schools, tv, houses, printed materials<br>2. Frequent communication to barangays<br>3. Imrovement of our clean and green program<br>4. Enough budget<br>5. Political will | |
| **Weaknesses (Kahinaan)**<br>1. Hard-headed people<br>2. Lack of concern<br>3. Bahala na attitude<br>4. Budget | **Proposed Enhancements**<br>1. Beautification program<br>2. Street lighting | |

### POLLUTION CONTROL

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | Oppurtunities (Pagkakataon) | Threats (Banta) |
|---|---|---|
| | 1. Good health | 1. Diseases |
| **Strengths (Lakas)**<br>1. Brgy. Ordinance<br>2. NGO<br>3. Task force / Brgy. Officials | **Proposed Solutions**<br>1. Strict implementation of all brgy. Ordinances and national ordinances<br>2. Penalties to violators<br>3. Regular collection of garbage | |
| **Weaknesses (Kahinaan)**<br>1. Ningas cogon<br>2. Proper Education<br>3. Budget information | **Proposed Enhancements**<br>1. Clean and green<br>2. Smoke belching | |

SOLID WASTE MANAGEMENT

| ENVIRONMENT (KAPALIGIRAN)<br>INTERNAL (LOOB) | **Opportunities (Pagkakataon)**<br>1. Income from garbage<br>2. Income from penalties | **Threats (Banta)**<br>1. Pollution<br>2. Diseases<br>3.Traffic<br>4. Death<br>5. Drowning |
|---|---|---|
| **Strengths (Lakas)**<br>1. Implementation of solid waste management | **Proposed Solution**<br>1. Waste segregation<br>2. Poster, education, workshop<br>3. Regular garbage collection<br>4. Reward/ brgy. Incentives<br><br>**Proposed Enhancements**<br>1. Community participations<br>2. Unity | |
| **Weaknesses (Kahinaan)**<br>1. Hard headed people<br>2. Lack of awareness<br>3. Lack of budget | | |

## TAGUIG GROUP

### INFORMATION, EDUCATION AND COMMUNICATION

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | Construction of Training Center at Brgy. Level<br>Creation of Information and Education Committee | Non implementation due to lack of funding |
| **STRENGTHS (LAKAS)**<br>Mun. Oridanance 113 (Unified approach on solid waste management) | **PROPOSED SOLUTION**<br>1. Conduct barangay assembly, week and monthly training/seminars of residence at barangay level.<br>2. Establishment of billboards/signage for Mun. Ord. No. 113<br>3. Continues public information dissemination thru handouts, leaflets (English-Tagalog version)<br>4. Inter-personal communication<br>5. House to house information campaign<br>6. Allocation of funds thru sanguniang resolution | |
| **WEAKNESSES (KAHINAAN)**<br>1. Non-awareness of Mun. Ordinance No. 113<br>2. Lack of cooperation of barangay leader<br>3. Lack of trainor<br>4. Lack of information and desimination | | |

### POLLUTION CONTROL

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | To develop a good and manageable Metro-Manila Flood Control System<br>To create a good business trading<br>To promote a healthy environment<br>To develop a cheap source of potable water | Non implementation due to lack of funding |
| **STRENGTHS (LAKAS)**<br>1. R.A. 9003 (Clean Air Act)<br>2. Mun. Ord. No. 113 (Unified approach on Solid Waste Management)<br>3. P.O. 825 (Anti-Dumping Law) | **PROPOSED SOLUTION**<br>1. Strict implementation of ordinances (National/Local)<br>2. Inter-agency coordination<br>3. Public participation | |
| **WEAKNESSES (KAHINAAN)**<br>1. Weak implementation of the National/Local/ Municipal Ordinances<br>2. Lack of Inter-agency coordination | | |

BEAUTIFICATION AND GREENING

| ENVIRONMENT (KAPALIGIRAN)<br><br>INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1. Upgrading of creeks and esteros<br>2. Implement adequate easement for maintenance of creeks /esteros<br>3. To implement tree planting activities and vegetation protection<br>4. Job opportunity<br>5. Provide/construct low cost housing for relocatee | 1. Presence of illegal settlers along creeks/ esteros<br>2. Lack of relocation site/funding<br>3. Opposition from the receiving sites |
| **STRENGTHS (LAKAS)**<br>1. Local land use and zoning ordinances<br>2. Executive order creating local clean and green office | **PROPOSED SOLUTION**<br>1. Proper implementation of land use and zoning<br>2. Allocation of funds thru SB solution<br>3. Coordination with NHA, HUDCC and concern agencies. | |
| **WEAKNESSES (KAHINAAN)**<br>1. Non-cooperation of barangay official<br>2. Lack of concern by residence<br>3. Human Rights Law | | |

SOLID WASTE MANAGEMENT

| ENVIRONMENT (KAPALIGIRAN) / INTERNAL (LOOB) | OPPORTUNITIES (PAGKAKATAON) | THREATS (BANTA) |
|---|---|---|
| | 1. Income generation thru waste segragation<br>2. Job opportunities | 1. Trends politically<br>2. Weak implementation<br>3. Opposition from non-concerned citizen<br>4. Lack of political will in barangay level |

**STRENGTHS (LAKAS)**

1. Mun. Ord. No. 113 (Unified approach on solid management

**WEAKNESSES**

1. Lack of facilities
2. Financial
3. Discipline
4. Non-cooperation
5. Coordination/Inter-agency
6. Diversion of funds
7. Lack of political will (barangay level)

**PROPOSED SOLUTION**

1. Allocation of funds thru National/Local and other financial institution
2. Orientation/seminar/communication planning
3. Information campaign
4. Construction of trash trap
5. Strict implementation of fines and penalties to violators

TAGUIG GROUP:

1. Boyet Pilar
2. Udang Limpasan
3. Edmund Notorio
4. Lito Ordoñez
5. Jexter Cruz
6. Bernie Ramolete
7. Jamil Dadung
8. Mike Pundaodaya
9. Myrna Rodriguez

**THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA**

**CLUSTER WORKSHOP FOR AFFECTED BARANGAY**

**July 23, 2004 ( 8:00 – 17:00 )**

**Manila Bay Ballroom, Bayview Park Hotel, Corner United Nation Avenue, Roxas Boulevard, Manila**

## ATTENDANCE LIST

| No | NAME | POSITION | ORGANIZATION/BRGY. | CONTACT # |
|---|---|---|---|---|
| 1 | Narciso L. Ramson | Brgy. Chairman | Pasay | 843-6194 |
| 2 | Nestor B. Ereno | Punong Brgy. | Manila | 09193552536 |
| 3 | Juan D. Alde | Kagawad | San Isidro,Makati City | 887-5065 |
| 4 | Ma. Elena D. Besoro | Brgy. Treasurer | Pasay | 887-7580 |
| 5 | Art C. Gaylican | Brgy. Chairman | Pasay | 524-1725 |
| 6 | Geronimo B. Gonzales | Brgy. Chairman | Pasay | 521-9570 |
| 7 | Rene P. Flores | Brgy. Capt. | Pasay | 09165790638 |
| 8 | Ruel S. Janairo | Brgy. Secretary | Pasay | 472-6993 |
| 9 | Gil Larioque | Secretary | Pasay | 09176999643 |
| 10 | Aquilina T. Decilos | Engr. III | DPWH | 304-3482 |
| 11 | Estelita M. Leonardo | Economist | DPWH | 304-3350 |
| 12 | Mar Tolentino Jr. | Engr. III | DPWH | |
| 13 | Silverio D. Auxtero | Draftsman | DPWH | |
| 14 | Conrada R. Balaca | Kagawad | 144 Zone 17 | 889-5736 |
| 15 | Aurelio M. Pojadas | Kagawad | 144 Zone 17 | |
| 16 | Francisco T. Foster | Kagawad | 144 Zone 17 | |
| 17 | Roel C. Arevalo | BEM | Palanan | 551-9007 |
| 18 | Edgardo J. Samedra | Brgy. Chairman | Pasay City 65.8 | 845-4440 |
| 19 | Perfecto Abenes | Brgy. Chairman | Pasay City 163.18 | 853-2425 |
| 20 | Peter E. Maquito | Brgy. Kagawad | Pasay City Brgy. 163 | 854-3229 |
| 21 | Myrna M. Rodriguez | Counterpart | DPWH-NCR | |
| 22 | Mario G. Navarro | Project Manager | DPWH-PMO-MFCP | 304-3815 |
| 23 | Leonila Mercado | Eng'r. IV | DPWH-PMO-MFCP | 304-3752 |
| 24 | Shunta Dozono | Flood Control-JICA Expert | DPWh | 304-3095 |
| 25 | Ronaldo L. Moriones | Asst. Director | MBB | 528-0646 |
| 26 | Manuel Ruben | Coordinator | MBB | 528-0648 |
| 27 | Dalisay N. Rivera | Brgy. Kagawad | Brgy. 207 | |
| 28 | Inoria Siy | Brgy. Kagawad | Brgy. 207 | |
| 29 | Lito B. Manoos | | DPWH | 304-3815 |
| 30 | Leonardo P. Sanchez | Eng'r. III | DPWH | |
| 31 | Virgilio V. Pascual | Brgy. Kagawad | Brgy. 54-Zone 8 | Pasay |
| 32 | Teresita V. Diaz | Brgy. Captain | 158-2-17 | 851-01-52 |
| 33 | Jesusa C. Vargas | Brgy. Secretary | 158-Zone 17 | 09186451385 |
| 34 | Josefina S. Ogatis | Brgy. Kagawad | 152-Zone 16 | 472-9771 |
| 35 | Rodolfo Bayani | Brgy. Captain | Manila Zone 38 | 784-2204 |
| 36 | Zenaida D. Matias | Brgy. Capt. | 470-46-IV | 781-26-56 |
| 37 | Leodolfo C. Gonzales | Brgy. 384 | | 488-3018 |
| 38 | Hajime Tanaka | Team Leader | JICA Study Team | |
| 39 | Tadanori Kitamura | | JICA Study Team | |
| 40 | Dr. Felixberto H. Roquia, Jr. | Public Participation | JICA Study Team | |
| 41 | Rosgel Gamala | Asst. Secretary | JICA Study Team | |
| 42 | Napoleon Famadico | Team Leader, Counterpart | DPWH | |
| 43 | Grace Milanio | Project Secretary | JICA Study Team | |

# Barangay Cluster Workshop-2

Date: 8:00- 17:00 October 22, 2004
Place: Traders Hotel, Manila

**THE 2nd BARANGAY CLUSTER WORKSHOP FOR THE ENCHANCEMENT OF PUBLIC PARTICIPATION IN THE DRAINAGE IMPROVEMENT OF THE CORE AREA OF METROPOLITAN MANILA**

The workshop was the 2ND of the Barangay Cluster workshop intended for the enhancement of the public participation of the affected Barangays in drainage improvement. This was done on October 22, 2004, at the Embassy Ballroom, 2nd floor Trader's Hotel, Manila from 8 to 5 p.m.

The session started with Engr. Lina T. Decilos setting the mood as the Master of Ceremonies. Engr. Leonila Mercado followed by leading the singing of the National Anthem, then the invocation lead by Engr.Myrna Rodriguez. Eng. Mario Navarro, representing Director Patrick Gatan, gave the opening remarks highlighting the vital role of the affected Barangays within the priority areas of the study. Engr. Napoleon S.Famadico introduced the participants of the workshop calling out the Barangays name. This was attended by a total of 154 participants representing the Barangay Chairmen and one Councilor from Pasay City, Makati City, Manila City, and Quezon City. Also in attendance were the DPWH, MMDA, and some officials from the Municipality of Manila, Pasay City, Caloocan City and Makati City.

The first part started with Mr. Hajime Tanaka the JICA Study Team Leader presenting the Master Plan and the Priority Projects. Mr. Jesus Averilla giving the Overview on the BEM-ESTERO Pilot Experimental Study followed by the counterpart coordinators Engr. Lito Manoos presenting the processes in the implementation of the Focal Points. The BEM-ESTERO presented a short performance introducing the roles and responsibilities they do as members. The Barangay Chairmen followed by sharing their experience as chosen pilot barangays, and how they chose their BEM-ESTERO members. The BEM of Barangay 46, Pasay City Barangay 195, Manila City and Barangay Palanan, Makati City. Each barangay introduced their members who in turn presented their Environment Management Plans on Solid Waste Management, Pollution, Beautification and Greening, and Information, Education, and communication Strategies in the form of a progress report. Dr. Felixebrto H. Roquia, Jr., JICA Study Team Public participation expert, followed with a presentation of the Social Impact Assessment of the identified priority areas of the study highlighting the social, economic and health impacts and mitigations.

The afternoon session started with Dr. Felixberto H. Roquia, Jr. Discussing the Public Participation workshop aspect of the Project Operation/ Maintenance Rationale, concept and methodology. The Barangay participants grouped themselves according to the priority areas they belonged to and worked on the assigned task facilitated by the counterparts and some JICA Study Team members. The results were presented in a plenary session.

The workshop ended with Dr. Roquia wrapping-up the activities of the session. Mr. Hajime Tanaka, the JICA Study Team leader gave his closing remarks reiterating the vital role of the LGU and other government and non-government agencies in the operation and maintenance of the project. This was followed by the awarding of certificates of attendance by Mr. Tanaka and Engr. Famadico.

## I. Workshop Rationale:

The success of the DICAMM Project relies on the active participation of the Local Government and the barangay residents who are directly affected by the project. The interaction of the MMDA/DPWH with the Local Government Units, Government & Non-government Agencies thus becomes imperative in the preparation of the BARANGAY OPERATION/MAINTENANCE Guidelines for priority projects identified in the Master Plan for effective implementation and sustainability.

## II. Workshop Objective:

To develop and prepare the Barangay Implementation Operation/Maintenance guidelines for the DICAMM priority projects.

## III. Workshop Methodology

1. Groupings of Barangay according to the identified project's priority areas.
2. Review:
   - The lecture-presentation of Mr. Tanaka regarding the activities to be done at the priority areas.
   - The out put of the 1st Barangay Cluster Workshop (S.W.O.T. Analysis)
   - The experience shared by the BEM-ESTERO Experimental Project of Brgys. 195, Manila; 46, Pasay City; and, Palanan, Makati.
3. Discuss the results and of the reviewed documents and recommend the appropriate strategies for the Operation/ Maintenance of the projects base on the Master Plan.
4. Prepare and Present the O/M Guidelines for the identified priority areas.

## IV. Workshop Results

**GROUP 1 - Barangays Identified for Relocation**

- **Pasay City Barangays 54, 51, 46, 43 Makati City Barangay Palanan, San Isidro**

| | OPERATION | MAINTENANCE |
|---|---|---|
| **Relocation of Informal Settlers** | 1. Coordinate with the city concerned agencies (DPWSH, MSDW, MMDA)<br>2. Provide relocation site with all amenities (housing, livelihood, market, school etc.,) so that the relocatees will not return<br>3. Provide disturbance fee<br>4. Full implementation of R.A. 7279 (Lina's Law) Resettlement and Institutional Framework and Acquisition<br>- Barangay administration conducts/identify, classify affected areas, families, structures, households and mapping<br>- Insure to relocate the affected area with relocation site. | 1. 24 Hour monitoring of esteros and sidewalks to discourage the occupation of informal settlers.<br>2. Make household mapping and tagging for easy identification of families to be relocated.<br>3. To identify/classify lots occupied by informal settlers Community Mortgage Program can be used to apply for private vacant lot for possible relocation site wherein our barangay had.<br>4. Relocation site must have educational facilities and employment opportunities and all needed community housing facilities.<br>5. Inter-agency coordinating Committee implement and sustain |

| | | |
|---|---|---|
| | Coordinate with NHA<br>❑ Dialogue with the residents who will be affected about the proposed project of the government (DPWH/MMDA).<br>❑ Acquire help or assistance from project personnel who will explain the proposed project, about the benefits and privileges they will enjoy in the relocation site. | the Social Development Plan<br>❑ Relocation site with livelihood programs and employment opportunity<br>❑ Relocation site that is conducive for decent living, clean environment, potable water, lighting, accessible to mass transport systems, market, religious organization and educational system for children. Availability of church or place to worship<br>❑ Maintain an organizational group to promote peace and order in the community. |
| **Community Based Solid Waste Management** | 1. Full implementation of Solid Waste Management Laws for proper waste segregation, collection and disposal of garbage.<br>2. Waste management segregation<br>3. Information, education and communication | 1. Continuous monitoring of proper waste disposal<br>2. Maintain garbage monitoring personnel to insure that people will comply and catch and penalize violators<br>3. Segregate non-biodegradable and biodegradable<br>4. Monitoring / supervision/implementation |
| **Information, Education & Communication** | 1. Straight dialogue<br>2. Letters, memos<br>3. Posters<br>4. PA- Public address<br>5. Conduct regular information campaign through leaflets<br>6. Hand to hand campaign<br>7. Information and dissemination about the project<br>8. Dialogue with Barangay constituent | 1. Continuous implementation of barangay/city ordinances<br>2. Maintain personnel who will promote the value of clean environment<br>3. Conduct the training and seminar<br>4. Forum<br>5. Discussion<br>6. To be consistent monitoring and evaluation |

**GROUP 2 - AREAS TO DREDGED AND DECLOGGED**

**Estero de Sunog Apog /Estero de Maypajo: Manila Brgys. 132, 133, 135, 136, 137, 143, 144, 145, 147, 148, 172, 175, 176, 177, 178, 180, 182, 183, 184, 186, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 202A,; Caloocan City Barangay 33,34, 36**

| STRUCTURAL | OPERATION | MAINTENANCE |
|---|---|---|
| **Rehabilitation of Drainage Channels** | 1. The removal of obstructions in the esteros.<br>2. Provide the affected person with facts and information about the project.<br>3. Screening of the esteros by Barangay to block & identify estero garbage ownership. | Assign Barangay Cluster Leaders to monitor the estero |
| **NON-STRUCTURAL** | | |
| **Community-based Solid Waste Management** | Implement strictly R.A. 9003 – Ecological Solid Waste Act | Establish Monitoring Team |
| **Information, Education & Communication** | 1. Distribution and posting of Print Information of clearing activities of the esteros.<br>2. Provide informative brochures of the negative health hazards of clogged drainage and esteros.<br>3. Inform residents of affected area about the project pre-construction, construction and operation activities. | Proper coordination and Monitoring of affected barangays in the implementation of the project. |
| **Strengthening of O / M** | 1. Organize the Barangay Environment Management Group to implement the Environment Plan particularly in relation to the operation & maintenance of the Drainage in their respective Barangays.<br>2. Encourage the Brgy Officials to be a model of the constituents through proper management. | Barangay councils pass an ordinance/resolution to penalize the violators and reward implementers. |

**GROUP 3 - Areas for improvement and/or additional work**

**NORTH MANILA**

- **Blumentritt Interceptor-** Brgys.201 ,202, 202a ,206 ,208,370,372, 373, 374, 375,376 ,377, 378,379, 380, 382,492,493, 494,495, 496, 515, 516:
- **Remedial works of existing Interceptor**; **Quezon City** Brgys.Paang Bundok, Salvacion; San Isidro Labrador, Valenzuela;

| | OPERATION | MAINTENANCE |
|---|---|---|
| **A. Structural Measures** | ❑ De-clogging operation<br>❑ Regular cleaning of manholes<br>❑ Rehabilitation of drainage system<br>❑ Upgrading of streets | ❑ Regular cleaning of manholes<br>❑ Keeping the Brgy. clean<br>❑ Educate the barangay constituents in monitoring the interceptors to be free of garbage. |
| **B. Non-Structural and Supporting Measures** | ❑ Dissemination of Information<br>❑ Brgy. Assembly re: the importance of cleanliness in the Barangay<br>❑ Posters to be posted in strategic areas in the barangay | ❑ Monitoring barangay in the proper maintenance of the interceptors<br>❑ Dialogue with the residents re: cleanliness of the barangay |
| **C. Information, Education and Communication** | ❑ Dialogue with multi-sectoral sectors of the community about the project<br>❑ Preparation of personalized letters and visits to identified problematic community members<br>❑ Posting of posters and distribution of brochures regarding government programs, the Environment, and provisions of the Law regarding SWM and Pollution | ❑ Establish community IEC to regularly inform and educate the community regarding the latest information about the their environment. |
| **D. <u>Strengthening of O/M</u>** | ❑ Organize the Barangay Environmental Management Group<br>❑ Insure the Logistical/Budgetary requirements in order to implement Program<br>❑ Enforce City Ordinance (P.D. 825) | ❑ Establish the cooperation of the LGU, other Government Agencies, and NGOs in the implementation of the barangay in the Waste Management Program.<br>❑ |

**GROUP 4 Rehabilitation of Pumping Stations**

**Manila Barangays** 282, 287, 291,303, 367,384, 628, 629, 635, 636, 640, 647, 661, 662, 664, 664A, 830,832, 833, 834, 847, 848, 881,883
**Makati Brgys**. Poblacion & Valenzuela

| | OPERATION | MAINTENANCE |
|---|---|---|
| **Rehabilitation of Pumping Stations** | ❑ Installation of Screen to trap garbage before the entrance to the pumping station<br>❑ Additional Manpower from the barangay be trained to monitor and guard the screen trap<br>❑ Additional Budget to pay for the hired barangay guards<br>❑ Intensify Information Dissemination Program in the negative effects of garbage in the river/estero<br>❑ Assist in the Regular Cleaning/Maintenance of Pumping Station<br>❑ Construction of River Bank Protection to prevent throwing of garbage<br>❑ Construction of 6 ft. Conc. Wall along river banks<br>❑ Relocation of Informal Settlers<br>❑ Regular Collection of Garbage by the Barangay<br>❑ Conversion of Steel MH Cover to Concrete | ❑ Monitoring of the Installed Screen trap garbage and maintaining its function<br>❑ Maintain budget for the Barangay river/estero guards<br>❑ Regular implementation of Information Dissemination Program<br>❑ Assign barangay members to Regularly assist in the Cleaning/Maintenance of Pumping Station<br>❑ Program for Brgy to Assist in the O/M of PS<br>❑ Dredging of Estero through Barangay initiatives<br>❑ Monitoring of River Bank Protection<br>❑ Monitoring the area of Informal Settlers<br>❑ Monitoring the Regular Collection of Garbage<br>❑ Monitoring MH Concrete Cover |

**GROUP 5 DECLOGGING AND DREDGING**

- **Declogging of Zobel-Roxas;Manila** City Brgys. 730,755, 756,757, 758; Additional B.C. along Zobel-Roxas; 763,764,765,766, 775; **Makati City** Brgys.La Paz, Palanan, San Antonio
- **Sta. Clara Drainage Block; Manila City** Brgys.881, 883
- **Declogging of Pasong Tamo D. M.** Brgy. San Antonio.
- **Dredging of PNR Canal,** Brgy. Pio del Pilar
- **Additional B.C. & Declogging,** Faraday St**.** Barangay San Isidro
- **Dredging of Calatagan Creek**, Brgys. San Antonio & Palanan
- **Dredging & Declogging of Buendia Outfall, Pasay City** Brgys.9, 10, 11, 12, 13,23, 24, 28, 37, 38, 47, 48, 49
- **Libertad-Tripa de Gallina Drainage Block,Pasay City** Brgys**.** 145, 188

| | **OPERATION** | **MAINTENANCE** |
|---|---|---|
| **1. Rehabilitation of Drainage** | ❑ Declogging<br>❑ Dredging<br>❑ Additional Box Culvert | ❑ Installation of heavy duty screen<br>❑ Installation of litter trap device such as basket in catch basins to lessen the volume of garbage that fills our drainage system<br>❑ Covering the whole estero to prevent throwing of garbage<br>❑ Replacement of manhole cover<br>❑ Cleaning of main drainage twice a month |
| | | ❑ Request assistance from Municipal Level for the Installation of heavy duty screen (Funds for continuous maintenance) |
| | ❑ Additional Box Culvert | ❑ Installation of litter trap device such as basket in catch basins to lessen the volume of garbage that fills the drainage system<br>❑ Cleaning of main drainage twice a month |

| | | |
|---|---|---|
| **2. Community-based Solid Waste Management** | ❑ Daily collection of garbage<br>❑ Organize committees per sector<br>❑ Create shifting schedules per sector committees for Bantay-Estero (Estero watchers)<br>❑ Application of BEM Estero Organizing to other Barangays<br>❑ Full implementation of Solid Waste Management | ❑ Monitor the arrival of garbage trucks<br>❑ Monthly operation of Linis Drainage by sector committees<br>❑ Provide boundary limits per barangay by installing screens<br>❑ Monthly meetings of multi-sectoral levels such as PO's, NGO's, Youth Sector and Residents to define responsibilities for each sector<br>❑ Monitoring of City & Brgy. Ordinances<br>❑ Regular coordination meetings of Neighborhood Association for proper garbage disposal |
| **3. Information, Education & Communication** | ❑ Conduct training & seminars<br>❑ Continuous dissemination of information to other residents not formally informed | ❑ Allocation of funds from barangay budget<br>❑ Sponsorship coming from NGO's<br>❑ Reporting per sector committees |
| **4. Strengthening of O / M** | ❑ Ask support from the national government and NGO's for sustainability | ❑ Inclusion in the Internal Revenue Allotment (IRA) of the Barangay |

**Suggestions:**

- **Instead of the proposed dredging and declogging of the Buendia Outfall, please look into the condition of the main pipe along Buendia/Leveriza Streets since the main pipes installed in those areas were already collapsed**
- **Replacement of dilapidated and worn out pipe culverts and box culverts on streets leading to Buendia Outfall**
- **Revival of Old Alignment of EsteroTripa De Gallina especially on Brgy. 178 up to Brgy. 186**

**THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA**

**2ND BARANGAY CLUSTER WORKSHOP**

**OCTOBER 22,2004 (FRIDAY) 8:00 a.m. – 5:00 p.m.**

***JICA STUDY TEAM AND COUNTERPART***

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| 3 | Tadanori KITAMURA | JICA Study Team | Drainage Planning 2 | |
| 4 | Ryosaku NAGATA | JICA Study Team | Drainage Facility Design | |
| 5 | Sonoe YAMADA | JICA Study Team | Public Participation 1 | |
| 6 | Dr. Felixberto Roquia Jr. | JICA Study Team | Public Participation 2 | |
| 7 | Tsutomo KAMEYAMA | JICA Study Team | Operation and Maintenance | |
| 8 | Kenji MORITA | JICA Study Team | Database | |
| 9 | Akinori SATO | JICA Study Team | Solid Waste Management | |
| 10 | Napoleon Famadico | DPWH | Team Leader | |
| 11 | Jess Averilla | DPWH | Solid Waste Management | |
| 12 | Leonila Mercado | DPWH | Hydraulics | |
| 13 | Marcelino Tolentino Jr. | DPWH | Drainage Facility Design | |
| 14 | Leonardo Sanchez | DPWH | Public Participation | |
| 15 | Joselito Manoos | DPWH | Public Participation | |
| 16 | Elmo Atillano | DPWH | Hydraulics | |
| 17 | Manuel Leano | DPWH | Solid Waste Analysis | |
| 18 | Diana Parubrub | DPWH | Database | |
| 19 | Aquilina Decilos | DPWH | Cost Estimation | |
| 20 | Estelita Leonado | DPWH | Economics | |

***OTHER RELATED AGENCIES***

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| 4 | Margelino | MMDA | SOO I | 882-0851 |

***MANILA***

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| 1 | Consuelo Serrano | Bgy 516 Zone 51 | Bgy. Secretary | 743-3570 |
| 2 | Belen K. Lim | Bgy. 516 Zone 51 | Bgy. Chairwoman | 741-5943 |
| 3 | Letecia S. Yang | Bgy. 758 Zone 82-V | Bgy. Chairman | 303-0629 |
| 4 | Francia M. Pasxual-Borja | Bgy. 495,2-49 | Punong Barangay | 742-8588 |
| 5 | Belen R. Lariosa | Bgy. 143-2-12 OI | Bgy. Chairwoman | 733-6885 |
| 6 | Avelino V. Balasan | Bgy. 145-2-12-OI | Punong Barangay | 258-3970 |
| 7 | Nony B. Francisco | Brgy 144-2-12 | Chairman | 256-1517 |
| 8 | Leoncio A. Victorino | Bgy. 202-2-18 | Chairman | 254-3223 |

| | | | | |
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| 9 | Emilio M. Duncil | Bgy. 205-2-18 | Chairman | 252-3187 |
| 10 | Cesar Lucero | Brgy. 492-49 | Chairman | 742-4322 |
| 11 | Eusebio Barrientos | Bgy. 830-90 | Punong Barangay | 09166808288 |
| 12 | Angel P. Murillo | Bgy. 637-Zone 61 | Chairman | 09185771787 |
| 13 | Erlinda S. Ramos | Bgy. 180-2-16 Dist II | Chairman | 256-6154 |
| 14 | Ruperto Resureccion | Bgy. 376-Zone 38 | Chairman | 783-2518 |
| 15 | | Bgy. 376-Zone 38 | Kagawad | 783-2514 |
| 16 | Rodolfo Bayani | Bgy. 360-2-38 | Chairman | 784-2204 |
| 17 | Noel Bigayan | Bgy. 380-238 | Kagawad | 732-2790 |
| 18 | Allan Franco | Bgy. 780-94-19 | Kagawad | 713-0330 |
| 19 | Reynaldo Nunez | Bgy. 629-Zone 63 | Kagawad | 713-0330 |
| 20 | Antonio Lumen | Bgy. 664-Zone 71 | Kagawad | 521-3346 |
| 21 | Erlinda L. Mar | Bgy. 449-2-10-44 | Kagawad | 742-3916 |
| 22 | Melanie B. Enliso | Bgy. 449-Zone 44 | Secretary | 783-5635 |
| 23 | Delfin Reyes | Bgy. 208-20 | Chairman | |
| 24 | Maricel Coloma | Bgy 282-Zone 26 | Secretary | 242-6076 |
| 25 | Conrado Geronimo | Bgy. 198-2-18 | Kagawad | 258-9808 |
| 26 | Carole Borleo | Bgy. 198-2-18 | Secretary | 258-98-08 |
| 27 | Esperenza H. Dantes | Bgy. 176-Zone 15-Dist. II | Secretary | 255-0563 |
| 28 | Ernesto Visda | Bgy 883-2-97 | Bgy. Captain | 589-5561 |
| 29 | Aurora Morhle | Bgy 636-64 | Punong Barangay | 715-7066 |
| 30 | Trinidad M. Lim | Bgy 636-Zone 64 | Kagawad | 715-1462 |
| 31 | Mr. Sebastian | Bgy. 636-Zone 64 | Kagawad | 780-8128 |
| 32 | Carmen L. Enriquez | Bgy. 833-Zone 91 | Kagawad | |
| 33 | Adriano B. Bagsit | Bgy. 833-Zone 91 | Kagawad | 477-1914 |
| 34 | Romer J. Reyes | Bgy. 228-Zone 21 | Kagawad | 252-1351 |
| 35 | Virgilio dela Cruz | Bgy. 211-Zone 19 | Chairman | 712-8964 |
| 36 | Manuel Simundo | Bgy 206-Zone 19 | Chairman | 785-7283 |
| 37 | Arturo Enriquez | Bgy. 197-Zone 17 | Chairman | 251-9649 |
| 38 | Brong Pablo | Bgy. 197-Zone 17 | Kagawad | |
| 39 | Rosie Garcia | Bgy. 560-Zone 90 | | 562-8621 |
| 40 | Patricia Chona D. Mata | Bgy. 661-Zone 71 | Kagawad | 400-1208 |
| 41 | Leonardo F. Ler | Bgy. 661-Zone 71 | Chairman | 484-3106 |
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| 44 | Wilfredo A. Bernardo | Bgy. 210-Zone 18 | Punong Barangay | 233-3020 |
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| 47 | Francisco E. Cirera | Brgy. 195-Zone 17 | BEM | |
| 48 | Severino C. Reyes | Brgy. 195-Zone 17 | Member | |
| 49 | Joseph H. Bayna | Brgy. 195-Zone 17 | Member | |
| 50 | Arlene A. Bautista | Brgy. 195-Zone 17 | Member | |
| 51 | Rosalinda F. Antonio | Brgy. 195-Zone 17 | Member | |
| 52 | Flordeliza A Isip | Brgy. 195-Zone 17 | Member | |
| 53 | Jean M. Rosas | Brgy. 195-Zone 17 | Member | |
| 54 | Analiza A. Lao | Brgy. 195-Zone 17 | Member | |

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|---|---|---|---|---|
| 55 | Orlando Reyes | Brgy. 195-Zone 17 | Kagawad | |
| 56 | Pacita Paras | Brgy. 195-Zone 17 | Kagawad | |
| 57 | Myrna Cacho | Brgy. 195-Zone 17 | Kagawad | |
| 58 | Nestor Ereno | Brgy. 195-Zone 17 | Punong Barangay | |
| 59 | Leonanrdo Pascual | Brgy. 193-Zone 17 | Punong Barangay | |
| 60 | Connie S. Arcalas | Brgy. 67-Zone 8 | Punong Barangay | 815-2087 |
| 61 | Reynaldo M. Garcia | Brgy. 496-Zone 49 | Kagawad | 414-8860 |
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| 63 | Basilio G. Laurente | Brgy. 374-Zone 38 | Kagawad | 711-1456 |
| 64 | Felilia C. Limet | Brgy. 664-A-Zone 71 | Punong Barangay | 306-0213 |
| 65 | Marlyn U. Galvez | Brgy. 664-A-Zone 71 | Kagawad | 484-3098 |
| 66 | Melencio R. Dionisio | Brgy. 212-Zone 19 | Punong Barangay | 253-5348 |
| 67 | Ana Riza U. Soriano-Gongon | Brgy. 848-Zone 92/Pandacan | Secretary | 563-8905 |
| 68 | Gloria Vasquez | Brgy. 848-Zone 92/Pandacan | Kagawad | 563-8905 |
| 69 | Francisco L. Castillo | Brgy. 147-Zone 13 | Punong Barangay | 251-2307 |
| 70 | | Brgy. 147-Zone 13 | Kagawad | |
| 71 | Delia S. Ibay | Brgy. 765-Zone 83 | Punong Barangay | 563-1643 |
| 72 | Erano R. Dabu | Brgy 373 | Kagawad | |
| 73 | Pio A. Enage | Brgy. 766-Zone 83 | Kagawad | |
| 74 | Leonardo Pascual | | Punong Barangay | |
| 75 | Enrique Azada | Brgy. 133-Zone 11 | Kagawad | 251-2383 |
| 76 | Aurelio Ang | Brgy. 133-Zone 11 | Treasurer | 253-7839 |
| 77 | Florencia Tupaz | Brgy. 832-Zone 90 | Punong Barangay | 562-5787 |
| 78 | Col. Rito E. Ilao PN | Brgy. 847-Zone 92 | Punong Barangay | 0916-5782925 |

***MAKATI CITY***

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| 10 | Remedios S. Gervasio | Bangkal | Kagawad | |
| 11 | Herman delos Santos | Bangkal | Kagawad | |
| 12 | Clarita M. Baylon | Bangkal | Employee | |
| 13 | Tony Reyes | | | |
| 14 | Renieboy O. Mocoy | Palanan | Team ESTERO | 09274046704 |
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| 16 | Emmanoel B. Alivio Jr. | Palanan | Team ESTERO | 834-0915 |
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***PASAY CITY***

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| 3 | Art Gaylican | Brgy. 46-Zone 6 | Brgy. Chairman | 831-5762 |
| 4 | Rudy Evangelista | Brgy. 24-Zone 4 | Brgy. Chairman | 831-5762 |
| 5 | Mr. Arasga | Brgy. 24-Zone 4 | Kagawad | 831-5762 |
| 6 | Johnny R. Santiago | Brgy. 38-Zone 25 | Brgy. Chairman | 831-6370 |
| 7 | Losendo Gamboa | Brgy. 186-Zone 19 | Brgy Captain | 851-5738 |
| 8 | Loreto Antig | Brgy. 51-Zone 8 | Brgy. Captain | 887-7580 |
| 9 | Tomasa Pascua | Brgy 188-Zone | Brgy. Chairman | 852-2809 |
| 10 | Teodora R. Roy | Brgy. 188-Zone 20 | Kagawad | 851-9964 |
| 11 | Coun. GF Araneta | LIGA | President | 831-8878 |
| 12 | Ria Concepcion Cabilla | Brgy. 62-Zone 8 | Brgy. Chairman | 887-3314 |
| 13 | Evelyn V. Baharon | Brgy. 62-Zone 8 | Secretary | 888-2251 |
| 14 | Eduardo I. Cruz | Brgy. 13-Zone 4 | Brgy. Chairman | 834-6280 |
| 15 | Willy Torres | Brgy. 13 | Kagawad | 550-9640 |
| 16 | Peter E. Maquito | Brgy. 163 | Kagawad | 854-3229 |
| 17 | | Brgy. 40-Zone 6 | BEM | 524-1725 |
| 18 | Geronimo B. Morales | Brgy. 143-Zone 6 | Punong Barangay | 521-9570 |
| 19 | Reynaldo Flores | Brgy. 157-16 | Brgy. Captain | 472-6040 |
| 20 | Luis Conde | Brgy. 157-16 | Kagawad | 472-7384 |
| 21 | Ruben L. Abello | Brgy. 52-Zone 7 | Brgy. Chairman | 831-0424 |
| 22 | Alberto G. Ong | Brgy. 143-Zone 15 | Brgy. Chairman | 888-0783 |
| 23 | Loreta Monala | Brgy. 143-Zone 15 | Kagawad | 888-0783 |
| 24 | Edgardo Samedra | Brgy. 65-Zone 8 | Chairman | 845-4440 |
| 25 | Avigale L. Panganiban | Brgy. 46-Zone 6 | Local DSWD-In-Charge | 524-1724 |
| 26 | Alma M. Managuit | Brgy. 46-Zone 6 | ESTERO Member | |
| 27 | Natividad Tan | Brgy. 46-Zone 6 | ESTERO Member | |
| 28 | Eufemia Villanueva | Brgy. 46-6 | ESTERO Member | 09196155592 |
| 29 | Benjamin Evangelista | Brgy. 46-Zone 6 | BEM | |
| 30 | Lucio F. de Guzman Jr. | Brgy. 46-Zone 6 | BEM | 09165055970 |
| 31 | Rolando Timajo | Brgy. 152-Zone 16 | Kagawad | 09200569363 |
| 32 | Fernando Maalihon | Brgy. 130-13 | Chairman | 512-1507 |
| 33 | Angel Vidal | Brgy. 125-Zone 13 | Chairman | 887-6487 |
| 34 | Tresilinda Vivas | Brgy. 165-Zone 18 | Punong Barangay | 854-3008 |
| 35 | Francisco T. Foster | Brgy. 144-Zone 17 | Kagawad | |
| 36 | Conrado Balaca | Brgy. 144-Zone 17 | Kagawad | 889-5736 |
| 37 | Ruel S. Janairo | Brgy. 162-Zone 18 | Secretary | 422-6993 |
| 38 | Antonio | Brgy. 46-Zone 26 | | |
| 39 | Gina Catalan | Brgy. 23-Zone 2 | Brgy. Captain | 834-6519 |
| 40 | Neneth Masagnay | Brgy. 23-Zone 2 | Brgy. Secretary | 09197174182 |

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| 42 | PO1 Sherwin Sianoya | Brgy.158-Zone 17 | | |
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| 44 | Virgilio Pascual | Brgy. 54-Zone 8 | Kagawad | 831-1466 |

# Barangay Cluster Workshop-3

Date: 8:00- 17:00 January 20, 2005
Place: Traders Hotel, Manila

**THE 3rd BARANGAY CLUSTER WORKSHOP FOR THE ENCHANCEMENT OF PUBLIC PARTICIPATION IN THE DRAINAGE IMPROVEMENT OF THE CORE AREA OF METROPOLITAN MANILA**

The 3rd Barangay Cluster Workshop was the last of the series of public participation enhancement activities of the project for the directly affected Barangays. The workshop highlighted the "Strengthening of Capabilities for the Sustainable Operations and Maintenance of the DICAMM Project". It was done on January 20, 2005, at the Embassy Room, Traders Hotel, Roxas Boulevard, Manila.

The 1st part of the workshop started with the singing of the National Anthem lead by Engr. Leonila Mercado followed by an invocation done by Engr. Myrna Rodriguez. Hon. Rodolfo Sese the Association of Barangay Chairmen of Makati City was represented by Mr. Manuel Adao gave the opening remark. Mr. Jess Averilla introduced the followed by introducing the participants of the workshop. This was attended by a total of one-hundred (100) Barangay Chairpersons representing the affected communities of Pasay City, Makati City, Quezon City and Manila City.

The main part of the workshop started with Engr. Napoleon Famadico, the DPWH Team Leader local counterpart, presenting the "Status of the Study". Mr. Takayuki Nobe and Mr. Akinori Sato, JICA Deputy Team Leaders, presented the progress of the Feasibility Study in the priority area highlighting the contribution of the affected barangays particularly the pilot experimental study (BEM-ESTERO). Mr. Jess Averilla who presented the rationale and objectives followed by Dr. Felixberto Roquia, Jr. discussing the methodology of the workshop. The outputs of the workshop were presented in a Plenary session in the afternoon.

Engr. Rebecca T. Garsuta ended the session with a closing remarks that recognized the valuable contributions of the different sectors that contributed for the success of the study. Likewise, she encouraged the affected barangays to commit themselves to the endeavors that the project has started for a better environment free of floods in the future. The workshop was formally ended with Engr. Famadico, Mr. Tanaka and Engr. Garsuta awarding the certificates of attendance

**Rationale**: The 3rd Barangay Cluster workshop for the enhancement of public participation shall focus on the STRENGHTENING OF CAPABILITIES FOR SUSTAINABLE O & M based on the results of the of 2nd workshop (Guidelines for **Operations and Maintenance)**. This shall be considered in drawing of the specific roles of the LGU, Barangay Kagawad, PO and NGO in the implementation of the DICAMM project per Barangay (District) from pre-construction, construction and operation. Likewise, guidelines for the monitoring of the O & M shall be prepared to assure its effective implementation.

**Objective:**

1. To review the results of the 2nd cluster workshop and classify the O & M as activities for pre-construction, construction and operation.
2. To identify the responsible Barangay LGU, Barangay Kagawad, NGO & PO in the implementation of the O & M during the pre-construction, construction and operation of the DICAMM project.
3. To prepare the guidelines for the monitoring of the O & M implementation of the DICAMM Project.

**Methodology:**

- Review the presentation of the JICA Study Team regarding the proposed O & M of the DICAMM project.
- Review the Operations and Maintenance guidelines prepared in the 2nd workshop.
- Classify the guidelines according to the phase that it is applicable (pre-construction, construction, operation)
- Identify the specific agency that will be responsible for the particular O & M. (write on the matrix provided)
- Prepare the monitoring plan for each particular O & M. (write on the matrix provided).

**Workshop Result:**

**Group I**
**Relocation Barangays - Barangay Palanan, San Isidro Makati City ; Barangay 43,46, 51, & 54 Pasay City**

**I. Pre - Construction**

| **B. Non - Structural and Supporting Structures** | **Responsible In - charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1. Informal Settlers<br>- Structure along estero (Tripa de Galina) and creeks | LGU's, MMDA, PNP, DPWH, NHA, DSWD, NGO's, Brgy. Officials | 1. Organize the BEM-Estero<br>2. I. E. C.<br>3. Strict Implementation along affected area | 24 hours monitoring | 1. Brgy. Officials BEM - Estero<br>2. Community participation |
| 2. Solid Waste Management<br>- Community | Brgy. Officials, DPWH, MMDA | 1. Organize the BEM-Estero<br>2. I. E. C.<br>3. Implementation of R.A. 9003 | 24 hours monitoring | 1. Brgy. Officials BEM - Estero<br>2. Community participation |
| 3. Information, Education and Communication<br>- Community | Brgy. Officials | 1. Distribution of leaflets or letter<br>2. Gen. Assembly<br>3. Poster<br>4. Brgy. Forum | 1. Once a week<br>2. Brgy. Ordinance<br>3. Brgy. Budget | 1. Brgy. Off. assign in I.E.C<br>2. School<br>3. Community |
| 4. Pollution Control<br>- Clean Air Act | 1. Brgy. Officials<br>2. DENR | City Ordinance | 24 hours monitoring | Concern citizens |
| 5. Beautification<br>- Clean and Green | Brgy. Officials | 1. Wall painting<br>2. Greening<br>3. Removal of illegal structure on sidewalk | Implementation of city ordinance and brgy. | Community BEM - Estero |

**Group I**
**II. Construction**

| **B. Non - Structural and Supporting Structures** | **Responsible In - charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1. Relocation of Informal Settlers<br>- Structure household along estero and creek | Coordination w/ DPWH, DSWD, NGO's, MMDA, LGU's, NHA, Brgy. Off., PNP | 1. Provide relocation site w/ all communities<br>2. Full implementation of R.A. 7279<br>3. Dialogue w/ Brgy. Officials<br>4. Coordination of NHA, NGO's urban | 24 hrs. monitoring assign BEM-Estero | 1. Community & Brgy. Off.<br>2. Task Force<br>3. BEM-Estero<br>4. NHA<br>5. DSWD |
| 2. Solid Waste Management<br>- Community | Brgy. Officials, LGU's, MMDA | 1. Full implementation of SWM for proper waste segregation collection & disposal garbage<br>2. I. E. C. | 1. 24 hrs monitoring of proper waste disposal<br>2. Supervision<br>3. Implementation | 1. BEM-Estero<br>2. Brgy. Official<br>3. MMDA |
| 3. Information, Education and Communication<br>- Community | Brgy. Officials<br>- BEM-Estero | 1. Dialogue<br>2. Letters memo, hand to hand campaign, leaflets | 1. Brgy. Budget<br>2. Conduct training & seminars<br>3. Discussion | 1. MMDA<br>2. Brgy. Officials |
| 4. Pollution Control<br>- Clean Air Act | Brgy. Officials | City Ordinance | 24 hrs monitoring | Concern citizens |
| 5. Beautification<br>- Clean & Green | Brgy. Officials | 1. Greening<br>2. Wall painting<br>3. Removal of illegal structures on sidewalks | Implementation of City Ordinance & Brgy | 1. Community<br>2. BEM-Estero |

**Group I**
**III. Operation**

| **B. Non - Structural and Supporting Structures** | **Responsible In - charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1. Relocated Informal Settlers<br>- Household along estero, creekside Tripa de Galina<br>- structure along sidewalk | NGO's, Urban Housing Agencies, DSWD, Brgy. Off. w/ receiving, LGU's, Dep. Ed | With the help of receiving Brgy. Official of receiving LGU's | 1. NGO's livelihood<br>2. LGU's<br>3. Community active involved | 1. Brgy. Officials<br>2. CMP<br>3. LGU, NGO |
| 2. Solid Waste Management | Concerned community LGO, NGO | 1. Implementation of city ordinance<br>2. Information, dissemination campaign | 1. Brgy. Officials<br>2. LGU<br>3. NGO | 1. Concerned citizens<br>2. Coordination w/ receiving Brgy. Officials |

| | | | | |
|---|---|---|---|---|
| 3. Information, Education and Communication | 1. Sending Brgy. Officials<br>2. Receiving Brgy. Officials | 1. Massive information<br>2. Gen. Assembly<br>3. Letters & posters | 1. Monitoring w/ coordination w/ receiving brgy.<br>2. Monitoring by sending brgy. On the vacated place of the settlers | Monitoring by receiving & sending brgy |
| 4. Pollution Control<br>- Clean Air Act | 1. Receiving Brgy.<br>2. DENR<br>3. LGU's | Implementation of Clean Air Act by receiving brgy. | Strict monitoring both receiving and sending brgy. | Monitoring both receiving & sending brgy |
| 5. Beautification<br>- Clean & Green | 1. Receiving & Sending Brgy.<br>2. LGU<br>3. DSWD<br>4. Housing Board | Implementation of clean & green to receiving & sending brgy | Monitoring both receiving & sending brgy | Monitoring by receiving & sending brgy |

**Group II – Estero de Sunog Apog /Estero de Maypajo: Manila** Brgys. 133, 132, 137, 136, 147, 148, 172,176, 175, 180, 144, 143, 145, 147,148,177, 178, 180, 182, 183, 184, 186, 193, 194, 195, 196, 197, 198, 199,200,201,202,202A, **Caloocan City** Barangay 33,34, 36

**I. Pre-Construction Stage**

| **B. Non - Structural and Supporting Structures** | **Responsible In - charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1. Relocation of Informal Settlers | Brgy. Officials and the support from GO's like DSWD, MMDA, NGO's existing in the Brgy LGU | Minimize the existing of additional dwellers if not totally stop | Assign brgy. official to monitor | Assign brgy. official to monitor |
| 2. Solid Waste Management | Brgy. Officials and the support from regular garbage collector | House to house collection of garbage | Assign brgy. official to monitor | Assign brgy. official to monitor |
| 3. Information Education and Communication | Brgy. Officials & NGO's existing in the barangay | Encourage the day care center teacher to teach on proper disposal of garbage to the children. | Assign brgy. official to monitor | Assign brgy. official to monitor |
| 4. Pollution Control | Brgy. Officials and GO's like DOH and DENR | Ask every brgy. Members to keep their animals in their proper places<br>- Coordinate DENR reg. the building of "Chimney" for the burning of tires, electric wires, plastic, etc. | Assign brgy. official to monitor | Assign brgy. official to monitor |
| 5. Beautification | Brgy. Officials & GO's like POD and BPI | De-clogging, ornamental plants, planting gutters, "Clean front yard" | Assign brgy. official to monitor | Assign brgy. official to monitor |

**Group II**
**II. During the Construction**

| **B. Non - Structural and Supporting Structures** | **Responsible In - charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1. Relocation of Informal Settlers | Brgy. Officials | | Establish monitoring team | Establish monitoring team |
| 2. Solid Waste Management | Brgy. Officials | House to house collection of garbage | Establish monitoring team | Establish monitoring team |
| 3. Information Education and communication | Brgy. Officials | | | |
| 4. Pollution Control | Brgy. Officials | Assigned brgy. tanod for traffic situation<br>- Control Barbecue vendors and sidewalk vendors<br>- Planting trees<br>- Proper pedestrian lane for students and for people | Establish monitoring team | Establish monitoring team |
| 5. Beautification | Brgy. Officials | Encourage the brgy. officials to be a model of the constituents through proper management, planting/ornamental plants | Establish monitoring team | Establish monitoring team |

**Group II**
**III. After Construction**

| **B. Non - Structural and Supporting Structures** | **Responsible In - charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1. Informal Settlers | Brgy. Officials | | Establish monitoring team | Establish monitoring team |
| 2. Solid Waste Management | Brgy. Officials | Continuation of activities during pre and construction | Establish monitoring | Establish monitoring |
| 3. Information Education and Communication | Brgy. Officials | Continuous activity for education | Establish monitoring team | Establish monitoring team |
| 4. Pollution Control | Brgy. Officials | Monitoring of brgy. Officials | Establish monitoring team | Establish monitoring team |
| 5. Beautification | Brgy. Officials | Continuous teaching of planting trees and other activity for beautification of barangay | Establish monitoring team | Establish monitoring team |

**Group III** **Blumentritt Interceptor-** Brgys.201, 202, 202a, 206, 208, 374, 373, 375, 378, 377, 379, 380, 372, 490, 492, 495, 496, 515, 516: **Remedial works of existing Interceptor**; **Quezon City** Brgys.Paang Bundok, Salvacion; San Isidro Labrador, Valenzuela

**I. Pre - Construction**

| **B. Non - Structural and Supporting Structures** | **Responsible In - charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1. Informal Settlers | Brgy. Captain Ex-O Members President of all NGO's & PO's | 1. Gen. Assembly<br>2. Information dissemination<br>a. P.A.<br>b. Posters/flyers<br>3. Create a study of all informal settlers and report to MMDA | 1. Once a month gen. meeting<br>2.Once a month info. dissemination | Daily monitoring/roving |
| 2. Solid Waste Management | Brgy. Captain and Chairman of Solid Waste Management | 1. G.A. on constituents<br>2. Implementation of RA 2003<br>3. Coordination w/ EPWMD<br>4. No segregation, No collection | 1. Everyday P.A.<br>2. Proper segregation of HH waste<br>3.Interceptor to be free of garbage<br>4. Coordinate to garbage collector | 1. Proper collection of waste<br>2. To educate the constituent on proper segregation and disposal of HH garbage |
| 3. Information, Education and Communication | Brgy. Captain Kgd. Chairman on Educ. | 1. Inform the constituents about the JICA project<br>a. Interceptor<br>b. Cleaning of sidewalk and informal settlers | 1. Twice a month dialogue<br>2. Resolution for implementation for violator of RA 2003 | 1. Survey the said IEC if being practice by the constituents<br>2. Create a data on the percentage of the people who are well informed regarding the project/survey |
| 4. Pollution Control | Brgy. Captain Kgd. Chairman on Health | 1. Implementation of Clean Air Act<br>2. Define and regulate all health hazard<br>3. Deputized personnel | 1. Create a guidelines to all offenders<br>a. 1st offense - notice<br>b. 2nd offense – warning<br>c. 3rd offense - penalty | 1. Coordinate the affected area<br>2. Promote harmonious relationship w/ constituents<br>3. Promote a Sumbong mo kay Kap ( Tell the Chairman) Slogan |
| 5. Beautification | Brgy. Captain Kgd. Chairman on Beautification | 1. Create a project<br>2. Landscaping<br>3. Painting of Sidewalks<br>4. Rehabilitation of St. Lights<br>5. Wall Painting<br>6. Tree Planting<br>7. Poster Making Contest<br>8. Deputize personnel | 1. Remove unwanted posters, streamers, etc.<br>2. Impose penalties for violators | 1. Everyday monitoring and roving of all the projects of Brgy<br>2. Warning all violators & subject for arrest |

**Group III**
**II. Construction**

| **B. Non - Structural and Supporting Structures** | **Responsible In – charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1. Informal Settlers | Brgy. Captain<br>Kgd. Chairman | 1. Convenient & sustainable relocation site<br>2. Strict implementation of the law about informal settlers<br>3. Lina Law 7279 Urban Development Housing Authority<br>4. Information about population | 1. Secure all sidewalk and possible informal settlers<br>2. Survey/census of informal settlers | 1. Removal of structure or house of all informal settlers<br>2. Penalize all violators |
| 2. Solid Waste Management | Brgy. Captain<br>Kgd. Chairman on Solid Waste Management | 1. Strict implementation of waste segregation<br>2. Burning of tires/trees and fumes of car paints | 1. No segregation of HH waste no collection<br>2. Invite/talk to the person about the cause | Penalize all violators |
| 3. Information, Education and Communication | Brgy. Captain<br>Kgd. Chairman on Educ. | Create a profile of all the constituents | Maintain a regular meeting for all constituents | Identify all the constituents who ignore the IEC regarding the project |
| 4. Pollution Control | Brgy. Captain<br>Kgd. Chairman on Health | 1. Strict implementation of ordinance regarding the Clean Air Act<br>2. Burning of tires/trees and gas fumes of car paints | 1. Continuous monitoring<br>2. Invite/talk to the person about the cause | Penalize all violators |
| 5. Beautification | Brgy. Captain<br>Kgd. Chairman on Beautification | Continuous program on short term/long term | 1. Guard/ protect all the previous project<br>2. Report to the authority for rehabilitation | 1. Penalize all violators<br>2. Identify all violators |

**Group III**
**III. Operations**

| **B. Non - Structural and Supporting Structures** | **Responsible In – charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1. Relocated Informal Settlers | Brgy. Captain & Kagawad or Committee | 1. Stand for all cause. The beauty of the project<br>2. Implement the rule of law<br>3. Discuss the result of the project and realize the benefit of it | 1. Maintained the spirit and loyalty of the cause<br>2. Be part of a clean and peaceful community and realize the importance of the project | Enhance the spirit of clean & peaceful environment |
| 2. Solid Waste Management | Brgy. Captain & Kagawad or Committee | Create a proper document regarding the past and present situation of the brgy. And make it known for the present generation | 1. Maintained the spirit and loyalty of the cause<br>2. Be part of a clean and peaceful community and realize the importance of the project | 1. Give lecture to the present generation the importance of clean& beautiful environment<br>2. Give recognition to those areas who really serve the project |
| 3. Information, Education and Communication | Brgy. Captain & Kagawad or Committee | Continuous information dissemination | 1. Maintained the spirit and loyalty of the cause<br>2. Be part of a clean and peaceful community and realize the importance of the project | 1. Give lecture to the present generation the importance of clean& beautiful environment<br>2. Give recognition to those areas who really serve the project |
| 4. Pollution Control | | Continuous information dissemination | 1. Maintained the spirit and loyalty of the cause<br>2. Be part of a clean and peaceful community and realize the importance of the project | 1. Give lecture to the present generation the importance of clean& beautiful environment<br>2. Give recognition to those areas who really serve the project |
| 5. Beautification | | Continuous information dissemination | 1. Maintained the spirit and loyalty of the cause<br>2. Be part of a clean and peaceful community and realize the importance of the project | 1. Give lecture to the present generation the importance of clean& beautiful environment<br>2. Give recognition to those areas who really serve the project |

**Group IV - Rehabilitation of Pumping Stations**, 282, 287 , 291,303, 367,384, 647 ,640, 636, 635, 629, 628, 661,664, 664A, 830,832, 833, 834, 847, 848, 881
**Declogging of Zobel-Roxas;Manila** City Brgys. 730,755, 756,757, 758; Additional B.C. along Zobel-Roxas; 763,764,765,766, 775; **Makati City** Brgys.La Paz, Palanan, San Antonio
**Sta. Clara Drainage Block; Manila City** Brgys.881, 883
**Declogging of Pasong Tamo D.M.** Brgy. San Antonio.
**Dredging of PNR Canal,** Brgy. Pio del Pilar**Additional B.C. & Declogging,** Faraday St**.** Barangay San Isidro
**Dredging of Calatagan Creek**, Brgys. San Antonio & Palanan
**Dredging & Declogging of Buendia Outfall, Pasay City** Brgys.9,10,11, 12, 13,23, 24,28, 37,38,47,48,49
**Libertad-Tripa de Gallina Drainage Block,Pasay City** Brgys**.** 145, 188

**I. Pre-Construction**

| **B. Non - Structural and Supporting Structures** | **Responsible In - charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1.Relocation of Informal Settlers | Chairman of every Barangay | To disseminate proper disposal of garbage w/in Brgy. & estero | Proper implementation of cleaning program of officials& constituents | To maintain of OM thru the Clean & Green of every Brgy. in cooperation with the rep. Of DPWH |
| 2. Solid Waste Management * Bawas Basura Sa Brgy. | Ch. P/B every brgy. & chairman of Clean & Green every brgy. & assistance of (BBB) | To strict implementation of segregation of waste material wait for avail of truck before disposing waste materials | To properly maintain garbage materials | To proper implementation of daily Clean programs by Brgy. officials & constituents |
| 3. Information, Education and Communication | P/B of every Brgy. | Weekly meeting at the brgy. Hall | | |
| 4. Pollution Control<br>a. Rehabilitation of drainage channels | R. for pollution control<br><br>P/B chairman of barangay | To impose provision for P & C measures<br><br>Ch. Clean & Green Public Services in to determine & Drainage Channels to be rehab. | To inform constituents<br>- To stop burning pollution materials & to implement Anti Smoke Belching Law & Clean Air Act<br><br>To coordinate with the rep. Of DPWH authority for rehab of defective drainage | Brgy. officials in coordination with MMDA/LTO to apprehend |
| 5. Beautification | P/B & representative for Clean & Green | Require brgy. Officials & constituents to clean their respective area of responsibility | Clean all public place/facilities& replaced with ornamental plants or fruit-bearing trees | Committee for Clean & Green to inspect facilities for proper maintenance |

**Group IV**
**II. Construction**

| **B. Non - Structural and Supporting Structures** | **Responsible In - charge** (LGU, GO, NGO, PO) | **Operation** | **Maintenance** | **Monitoring of Operation and Maintenance** |
|---|---|---|---|---|
| 1.Relocation of Informal Settlers | Chairman of every Barangay | Disseminate proper disposal of garbage w/in Brgy. & estero | Proper implementation of cleaning program of officials& constituents | Maintain of OM thru the Committee for Clean & Green of every Brgy. in cooperation with the rep. Of DPWH |
| 2. Solid Waste Management<br>* Reduce garbage in the Brgy. level | Ch. P/B every brgy. & chairman of Clean & Green every brgy. & assistance of (BBB) | Strict implementation of segregation of waste material<br>- Wait for avail of truck before disposing waste materials | Properly maintain garbage materials | Proper implementation of daily Clean programs by Brgy. officials & constituents |
| 3. Information, Education and Communication | P/B of every Brgy. | Establish Barangay meeting every week | | |
| 4. Pollution Control<br>a. Rehabilitation of drainage channels | R. for pollution control<br><br>P/B chairman of barangay | Impose provision for P & C measures<br><br>Ch. Clean & Green Public Services in to determine & Drainage Channels to be rehab | Inform constituents<br>- Stop burning pollution materials & to implement Anti Smoke Belching Law & Clean Air Act<br>- Coordinate with the rep. Of DPWH authority for rehab of defective drainage | Brgy. officials in coordination with MMDA/LTO to apprehend |
| 5. Beautification | P/B & representative for Clean & Green | Require brgy. officials & constituents to clean their respective area of responsibility | Clean all public place/facilities& replaced with ornamental plants or fruit-bearing trees | Com, Clean & Green to inspect facilities for proper maintenance |

**THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA**

**3rd BARANGAY CLUSTER WORKSHOP**

**January 20, 2005 (Thursday), 8:00 a.m. – 5:00 p.m.**

**Ballroom A, Traders Hotel, Roxas Boulevard, Pasay City**

## PARTICIPANTS LIST

| No. | Name | Position | Organization | Contact # |
|---|---|---|---|---|
| 1 | Mr. Hajime TANAKA | JICA Study Team Leader | JICA Study Team | |
| 2 | Mr. Takayuki NOBE | Deputy Team Leader, Drainage Planning 1 | JICA Study Team | |
| 3 | Mr. Akinori SATO | Deputy Team Leader/Solid Waste Management | JICA Study Team | |
| 4 | Mr. Tadanori KITAMURA | Hydraulics/Drainage Planning 2 | JICA Study Team | |
| 5 | Mr. Kenji MORITA | Database | JICA Study Team | |
| 6 | Mar Tolentino Jr | Engineer III | PS, DPWH | 304-3841 |
| 7 | Myrna Rodriguez | Eng'g Assistant | DPWH-NCR | 304-3687 |
| 8 | Estelita M. Leonado | Economist | DPWH-PS | |
| 9 | Aquilina T. Decilos | Engineer III | DPWH-PS | 304-3842 |
| 10 | Leonila Mercado | Engineer IV | DPWH-PMO-MFCP | 304-3750 |
| 11 | Diane Paqrubrub | Database | DPWH-PS | 304-3482 |
| 12 | Napoleon Famadico | DPWH Local Counterpart | DPWH | 304-3482 |
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| 16 | Banjo Bujatin | Chairman | 834--91 | |
| 17 | Bher Austria | Kagawad | 834-91 | 09192891214 |
| 18 | Eusebio Barrientos | Punong Barangay | 90-830 | 09166808288 |
| 19 | Felilia Limet | Punong Baramgay | 664a-71 | 306-0213 |
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| 21 | Carina C. Limet | Tanod | 664A-71 | 306-0213 |
| 22 | Felly C. Lanuza Jr. | Brgy. Staff | La Paz | 895-2755 |
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| 24 | Jacinto Cudal | Kagawad | 775-84 | |
| 25 | Arnold Angeles | Kagawad | Pio Del Pilar | 843-6212 |
| 26 | Domeng Inocencio | Kagawad | Pio del Pilar | |
| 27 | Roger Takeda | Kagawad | Pio del Pilar | 843-1435 |
| 28 | Florencia E. Tupaz | Chairwoman | 90-832 | 562-5787 |
| 29 | Saturnino Sanico | Kagawad | 90^832 | 562-5787 |
| 30 | Antonio S. Giray | Kagawad | 90-832 | 589-6134 |
| 31 | Renato del Rosario | Kagawad | 79-730 | 530-3675 |
| 32 | Ritz Ilao | Chairman | 842-92 | 09165182925 |
| 33 | Basilio G. Laurente | Kagawad | 38-374 | 711-1456 |

| No. | Name | Position | Organization | Contact # |
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| 34 | Joey Chico | Kagawad | Dist 1, QC | 731-7539 |
| 35 | Fred Caparon | Liason | Dist 1, QC | 731-7539 |
| 36 | Cesar Lucero | Chairman | 492-49 | 711-8188 |
| 37 | Elizabeth Pilapil | Chairman | 494-49 | 411-6418 |
| 38 | Jhun Lopez | Kagawad | 494-49 | 09196435125 |
| 39 | Choy Miranda | Brgy Captain | Salvacion | 415-2439 |
| 40 | Milagros D. Villasenor | Kagawad | Salvacion | 413-1850 |
| 41 | Grace R. Ardaniel | Secretary | Paang Bundok | 416-0710 |
| 42 | Editha Alonte | Kagawad | Paang Bundok | 740-2371 |
| 43 | Rafael G. Jimenez | Brgy. Captain | Paang bundok | |
| 44 | Bernard Danganan | | Salvacion | 740-5994 |
| 45 | Raolly Balaran | Brgy. Staff | Paang Bundok | 74106977 |
| 46 | Romeo Sugay | Kagawad | 186-16 | |
| 47 | Danilo V. Miranda | Kagawad | 186-16 | 258-9944 |
| 48 | Marilou Canlas | SEC | 196-17 | 252-4233 |
| 49 | Ma. Cristina Cruz | Kagawad | 194-17 | 365-5268 |
| 50 | Erlinda Remodaco | | 199-218 | 365-5236 |
| 51 | Nora Jimenez | Kagawad | 194-17 | 365-5231 |
| 52 | Gerry Francisco | Punong Barangay | 132-4 | 253-8561 |
| 53 | Francisco T. Foster | Kagawad | 144-17 | |
| 54 | Ma. Luisa N. Dela Cruz | Kagawad | 137-12 | 256-2895 |
| 55 | Lhito Robles | Kagawad | 137-12 | 253-7689 |
| 56 | Norma F. Solomon | Kagawad | 158-17 | 09275772009 |
| 57 | Teresita Diaz | Brgy. Captain | 158-17 | 851-0152 |
| 58 | Narciso L. Ramson | Brgy. Captain | 137-15 | 843-6194 |
| 59 | Donato Navarrete | Kagawad | 180-16 | 255-2945 |
| 60 | Herminio R. Manikad | Kagawad | 199-18 | 233-5945 |
| 61 | Nestor Ereno | Chairman | 195-17 | 09193552536 |
| 62 | Pacita N. Paras | Kagawad | 195-17 | 360-4799 |
| 63 | Orlando LM Reyes | Kagawad | 195-17 | 364-9515 |
| 64 | Delia S. Ibay | Chairman | 765-83 | 563-1643 |
| 65 | Leticia S. Yang | Chairman | 758-82 | 303-0629 |
| 66 | Julio Garcia | Kagawad | 202-18 | 233-3341 |
| 67 | Fortunato M. Borre | Kagawad | 182-16 | |
| 68 | Rosalie r. Alfaro | Kagawad | 182-16 | |
| 69 | Wilfredo C. Castillo | Kagawad | 182-16 | 233-6011 |
| 70 | Crisanta S. Valdez | Kagawad | 197-17 | |
| 71 | Ma. Luisa P. Reyes | Treasurer | 197-17 | |
| 72 | Esperanza H. Dantes | Secretary | 176-15 | 255-0563 |
| 73 | Conrada R. Balaca | Kagawad | 144-17 | 889-5736 |
| 74 | Emmanuel C. Jordan | Kagawad | 144-17 | 889-5736 |
| 75 | Rosario Malecon | Secretary | 199-18 | |
| 76 | Avelina Mosqueda | Treasurer | 199-18 | |
| 77 | Rebecca B. Pangilinan | Chairwoman | 183-16 | 233-2317 |

| No. | Name | Position | Organization | Contact # |
|---|---|---|---|---|
| 78 | Willy Bernardo | Chairman | 200-18 | 233-3020 |
| 79 | Dory Bondo | Secretary | 200-18 | 233-3020 |
| 80 | Rogelio M. Santos | Chairman | 136-12 | 253-7642 |
| 81 | Daisy C. Tanghal | Secretary | 46-6 | 525-1745 |
| 82. | Mia Grande | | 46-6 | 525-1745 |
| 83 | Eufemia Villanueva | Brgy Esterp Member | 46-6 | 524-1745 |
| 84 | Roel C. Arevalo | BEM | palanan | 551-9007 |
| 85 | Vilma Odonel | Brgy Kagawad | 157-16 | 472-2723 |
| 86 | Flordeliza Legada | Brgy Kagawad | 157-16 | |
| 87 | Geronimo B. Morales | Punong Barangay | 43-06 | 521-9570 |
| 88 | Melvin Guanzon | Kagawad | San Antonio | 870-4194 |
| 89 | Manny Adao | Brgy Captain | San Isisdro | 887-5065 |
| 90 | Oscar Bajamonde | Executive Director | Talima | |
| 91 | Perfecto P. Abenes | Brgy Captain | 263 Pasay | |
| 92 | Ruel S. Janairo | Brgy. Secretary | 162-18 | 09208497541 |
| 93 | Eddgardo J. Samedra | Brgy. Chairman | 65-8 | 845-4440 |
| 94 | Art Gaylican | Chairman | 46-06 | 524-1125 |
| 95 | Antonio Tangon | Kagawad | 46-06 | 524-1475 |
| 96 | William P. Lim | Brgy. Captain | 54-08 | 458-5890 |
| 97 | Alma M. Managuit | BEM ESTERO | 40-06 | |
| 98 | Natividad Tan | BEM ESTERO | | |
| 99 | Jesus Mora | BEM ESTERO | 40-06 | |
| 100 | Lucio F. De Guzman Jr. | BEM-ESTERO | 46-06 | 524-1725 |
| 101 | Loreto Antig | Brgy. Captain | 51-8 | |
| 102 | Peter E. Maquito | Kagawad | 163 | |
| 103 | Job Rodriguez | Kagawad | 770-84 | 589-2770 |
| 104 | Mateo Roldan | Kagawad | 770-84 | |
| 105 | Belen Lim | Chairman | 510-51 | 741-5943 |
| 106 | Vilma V. Santos | Treasurer | 516-51 | 741-3121 |
| 107 | Adrianop Lubis | Kagawad | 755-82 | 530-7207 |
| 108 | Antonio C. Abad | Kagawad | 79-730 | |
| 109 | Laila del Rosario | Chairman | 79-730 | 530-3675 |

# Technical Seminar-1

Date: 8:00- 17:00 May 19, 2004
Place: Bayview Park Hotel, Manila

# *PROGRAMME*

| | | |
|---|---|---|
| | Registration | 8:00 a.m.– 9:00 a.m. |
| 1. | National Anthem | 8:30 a.m. – 8:40 a.m. |
| 2. | Invocation | 8:40 a.m – 8:45 a.m. |
| 3. | Opening Remarks<br>*Mr. Patrick Gatan* | 8:45 a.m. – 9:00 a.m. |
| 4. | A.M. PRESENTATION | |
| | 4.1 Drainage Management<br>MMDA | 9:00 a.m – 10:00 a.m. |
| | COFFEE BREAK | 10:00 a.m – 10:30 a.m |
| | 4.3 Study Approach / Methodology<br>Findings and Observation<br>*Mr. Hajime TANAKA* | 10:30 a.m – 12:00 p.m |
| | LUNCH BREAK | 12:00 p.m. – 1:00 p.m. |
| 5. | P.M. PRESENTATION | |
| | 5.1 Drainage System Assessment<br>*Dr. Tadanori KITAMURA* | 1:00 p.m. – 1:45 p.m. |
| | 5.2 Hydrological / Hydraulic Analysis<br>*Mr. M.M. Sabbir Hassan* | 1:45 p.m. – 2:30 p.m. |
| | COFFEE BREAK | 2:30 p.m. – 3:00 p.m. |
| | 5.3 Drainage Planning<br>*Mr. Takayuki NOBE* | 3:00 p.m. – 3:45 p.m |
| | 5.4 Solid Waste Management<br>*Mr. Akio ISHII*<br>*Dr. Akinori SATO* | 3:45 p.m. – 4:30 pm |
| 6. | Closing Remarks<br>*R.C. Asis* | 4:30 p.m. – 4:40 p.m. |
| 7. | Distribution of Certificates | 4:40 p.m. – 5:00 p.m. |

**THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA**
**1st TECHNICAL SEMINAR**
**MAY 19, 2004 WEDNESDAY 8:00 a.m. to 17:00 p.m.**

**ATTENDANCE**

| NO. | NAME | ORGANIZATION | POSITION | CONTACT NUMBER |
|---|---|---|---|---|
| 1 | Mar Tolentino | P.S. DPWH | ENGR. III | |
| 2 | Manuel | PMO- MFCP-DPWH | ENGR IV | |
| 3 | Norman N. Gamboa | PMO- MFCP | ENGR. ASST. | |
| 4 | Silverio D. Auxtero | DPD- PLANNING SERVICE | DRAFTSMAN | |
| 5 | Myrna M. Rodriguez | PPD- NCR | ENGR. ASST. A | 304-36-87 |
| 6 | Vernon Espiritu | MMDA- OAGMP | OIC-MMZAO | 882-4151 |
| 7 | Renato De Guzman | CAL.CITY ENGR OFFICE | ENGR III | 0918-543-4447 |
| 8 | Leonila D. Mercado | PMO-MFCP-DPWH | ENGR I | 304-37-52 |
| 9 | Ellorey A. Viernes | CEO-MANILA | STAFF- ENGR IV | 527-49-24 |
| 10 | Lourdes Roncesvalles | NEDA- IS | EDS II | 631-37-24 |
| 11 | Cecilio R. Sarmiento | NHA | PRINCIPAL ENGR A | 922-24-67 |
| 12 | Robert L. Domingo | NEDA | SENIOR ECON. DEVT. SPECIALIST | 631-21-92 |
| 13 | Misangad Dundaoman | ENGR. DEPT. | ESTIMATOR | 0918-50-8859 |
| 14 | Daisy Dellosa | DPWH | LEGAL OFFICER III | 0919-651-0463 |
| 15 | Madelyn B. Loyola | DPWH-PS | ENGR. III | 304-31-55 |
| 16 | Orlando Casio | DPWH | ENGR III | 304-38-42 |
| 17 | Lydia C. Aguilar | PMO- MFCP | ENGR II | 304-38-15 |
| 18 | Lito B. Manoos | PMO-MFCP | ENGR III | 304-38-15 |
| 19 | Kameyama | JICA STUDY | TEAM MEMBER | |
| 20 | Diane J. Parubrub | DPWH | DATABASE | |
| 21 | Mike Roland V. Marcelo | JICA STUDY | | |
| 22 | Saiga Hidemaro | JICA STUDY | | |
| 23 | Jennie O. Almeda | DPWH | DRAFTSMAN | 304-38-82 |
| 24 | Takayuki Nobe | JICA STUDY TEAM | ENGINEER | |
| 25 | M.M. Sabbir Hassan | JICA STUDY TEAM | HYDROLOGICAL / HYDRAULICS | |
| 26 | Gina Arnaldo | JICA STUDY TEAM | GIS | |
| 27 | Akinori Sato | JICA STUDY TEAM | ENVIRONMENT | |
| 28 | Aquillina T. Decilos | DPWH | ENGR. III | |
| 29 | Estilita M. Leonado | DPWH | ECONOMIST III | 304-33-50 |
| 30 | Antonio Abayan | MMDA | ENGR. III | 882-41-50 loc 334 |
| 31 | Eduardo V. Sarto | DPWH- - NCR | ENGR. III | 304-38-47 |
| 32 | Alejandro F. Salvador | NHA | PROJ. ENGR. A | 922-24-67 |
| 33 | Patrick Gatan | DPWH | PROJECT DIR. | 641-60-86/304-38-13 |
| 34 | Ignacia M. Ramos | DPWH - EIAPO | SUPUG ENVTL. MNGT. SP. | 304-32-87 |
| 35 | Patricia C. Almoneda | CEO- - PASAY CITY | ENGR. I | 831-59-25/831-24-46 |
| 36 | Leonardo P. Sanches | DPWH -PMO | Engr. III | 304-38-15 |
| 37 | Tadanori Kitamura | JICA STUDY TEAM | DARAINAGE PLANNING | 0916-722-9529 |
| 38 | J.C Elizarte | PMO - FSEC | ENGR. I | 900-14-96 |
| 39 | Edgar A. Basilio | NEDA | ECONOMIST | 631-37-24 |
| 40 | Norman D. Austria | CEO- MAKATI CITY | PEA I | 870-12-29 |
| 41 | Perfecto Zaplan Jr. | DPWH - BOD | ENGR. V | 304-30-11 |
| 42 | Russell F. N. Maeta | MMDA | ARCH. III | 882-41-51/ loc 279 |
| 43 | Zaiel V. Gonzaga | DPWH | DATA ENCODER | 304-38-42 |
| 44 | Ryosaka Nagata | JICA STUDY TEAM | STRUCTURE ENGR. | |
| 45 | Lilibeth B. Abella | MMDA | COMP. OPERATOR | 0910-337-6245 |
| 46 | Grecille Christ Damo | PMO - FSEC DPWH | ENGR. III | 900-14-96/900-14-99 |
| 47 | Josel B. Bolevar | DPWH | ENGR. III | 0920-733-8919 |
| 48 | Jose Romeo Cueto | CEO - MANILA | ENGR. III | 527-09-14 |
| 49 | Demetrio L. Pilar | MUN. OF TAGUIG | ENGR. I | 542-40-15 |
| 50 | Belinda J. Fajardo | EIAPO - PS | CHIEF, EMS | 304-32-87 |
| 51 | Jesus O. Averilla | JICA- DPWH-EIAPO,PS | SEMS | 304-38-42 |
| 52 | Martiano Dela Cruz | BOA- DPWH | ENGR. III | 304-30-65 |
| 53 | Vicente Umengan | MAKATI LGU | PDO | 870-12-20 |

# Technical Seminar-2

Date: 8:00- 17:00 January 18, 2005
Place: Traders Hotel, Manila

STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA

# 2nd TECHNICAL SEMINAR

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***Date*** **January 18, 2005 Tuesday**
***Time*** **8:30 AM - 5:00 PM**
***Venue*** **Traders Hotel, Roxas Boulevard, Manila**

| | | | |
|---|---|---|---|
| ***Program*** | 8:00 AM | Registration | (DICAMM Staff) |
| | 8:30 AM | National Anthem | Ms. AQUILINA T. DECILOS |
| | | Invocation | Ms. ESTELITA M. LEONADO |
| | 8:45 AM | Opening Speech | P.M. MARIO NAVARRO |
| | 9:00 AM | Introduction of Participants and Guests | Engr. NAPOLEON S. FAMADICO |
| | 9:30 AM | Presentation of the Progress of the Study | Mr. HAJIME TANAKA |
| | 10:00 AM | Coffee Break | |
| | 10:30 AM | Drainage System - Japanese Experience | |
| | | 1. River and Drainage Management | Engr. AQUILINA T. DECILOS |
| | | 2. Soild Waste Management Related to Drainage Improvement | Engr. LEONILA MERCADO |
| | 12:00 NN | Lunch | |
| | 1:00 PM | Database for Drainage System | Mr. KENJI MORITA<br>Ms. DIANA PARUBRUB |
| | 2:00 PM | Existing Condition of Drainage System | Mr. TADANORI KITAMURA<br>Engr. ELMO F. ATILLANO |
| | 3:00 PM | Coffee Break | |
| | 3:30 PM | Drainage Improvement Plan | Mr. TAKAYUKI NOBE |
| | 4:30 PM | Closing Remarks | Engr. REBECCA T. GARSUTA |
| | 5:00 PM | Distribution of Certificates | |
| | | *Emcee* | *Engr. MARY ANN T. BAUTISTA* |

***Participants Invited Guests***

1. TWG Members
2. JICA Study Team Members
3. DPWH Local Counterparts
4. JICA Philippine Office Representatives
5. Bureau of Design, DPWH
6. PMO-Flood Control and Sabo Engineering Center, DPWH
7. Nional Capital Region, DPWH
8. PMO-Major Flood Control Projects - Cluster I, DPWH
9. PMO-Major Flood Control Projects - Cluster II, DPWH
10. Planning Service, DPWH
11. Bureau of Maintenance, DPWH
12. Bureau of Construction, DPWH
13. Metro Manila Development Authority
14. LGU Representatives (Manila, Makati, Pasay, Caloocan, Quezon, Taguig)
15. National Economic and Development Authority
16. Support Staff, Secretariat
17. PAG - ASA , DENR

**The Study on Drainage Improvement in the Core Area of Metropolitan Manila**

**2nd TECHNICAL SEMINAR**

**January 18, 2005 (Tuesday), 8:00 a.m. – 17:00 p.m.**

**2nd Floor, Traders Hotel, Roxas Boulevard, Pasay City**

## PARTICIPANTS LIST

| No. | Name | Position | Organization | Contact # |
|---|---|---|---|---|
| 1 | Hajime TANAKA | JICA Study Team Leader | JICA Study Team | 304-3842 |
| 2 | Takayuki NOBE | Drainage Planning 1 | JICA Study Team | 304-3842 |
| 3 | Akinori SATO | Environment/ Solid Waste Mgt. | JICA Study Team | 304-3842 |
| 4 | Tadanori KITAMURA | Drainage Planning 2/ Hydraulics | JICA Study Team | 304-3842 |
| 5 | Kenji MORITA | Database | JICA Study Team | 304-3842 |
| 6 | Aquilina Decilos | Engineer III | DPWH P.S. | |
| 7 | Diane J. Parurub | Database | DPWH P.S. | |
| 8 | Estelita Leonado | Economist | DPWH,PS | |
| 9 | Leonila Mercado | Engineer IV | DPWH,PMO-MFCP | 304-3752 |
| 10 | Mar G. Tolentino | Engineer III | DPWH P.S. | 304-3842 |
| 11 | Napoleon Famadico | Engineer IV-Team Leader, DPWH | DPWH,P.S. | |
| 12 | Silverio D. Auxtero | Draftsman | DPWH,P.S. | 304-3098 |
| 13 | Elmo F. Atillano | Engineer III | DPWH | 304-3098 |
| 14 | Rosgel Gamala | Assistant Secretary | JICA Study Team | 304-3842 |
| 15 | Demetrio L. Pilar | Engineer I | Mun. og Taguig | 629-19999 loc 386 |
| 16 | Daniel Valencia | Draftsman II | Mun. of Taguig | 09182491560 |
| 17 | Hector Donado | Engineer V | Bureau of Construction,DPWH | |
| 18 | Menandro M. Pesigan | Engineer IV | Bureau of Construction,DPWH | |
| 19 | Nonie A. Viyar | Engineer V | Bureau of Research and Studies | 481-0070 |
| 20 | Lino M. Reynera | Engineer II | Bureau of Research and Studies | 481-0092 |
| 21 | Renato de Guzman | Engineer III | Caloocan City | 324-5416 |
| 22 | Arnold C. Obina | Staff-Ofc. of the Secretary to the Mayor | Caloocan City | 324-4567 |
| 23 | Patricia C. Almoneda | Engineer I | CEO-Pasay | 833-3214 |
| 24 | Norman D. Austria | PEA I | City Engineer's Office | 870-1229 |
| 25 | Vicente O. Umengan | PDO | CEO | 870-1229 |
| 26 | Joel M. Pascua | District Operations Engineer | NMFCOD-MMDA | 09162451177 |
| 27 | Evelyn Atienza | Engineer III | BOM-DPWH | 304-3637 |
| 28 | Sheila F. Reyes | Engineer II | DPWH-NMED | 714-0608 |

| No. | Name | Position | Organization | Contact # |
|---|---|---|---|---|
| 29 | Gerardo de Guzman | Engineer III | DPWH-NMED | 714-0608/12 |
| 30 | Ma. Soledad Q. Balisi | Economist III | DPWH-P.S. | 304-3482 |
| 31 | Mary Ann T. Bautista | Engineer III | DPWH P.S. | 304-3482 |
| 32 | Jesusa Sarausad | Engineer III | DPWH P.S. | 304-3482 |
| 33 | Mario Navarro | PM II | DPWH-PMO-MFCP | |
| 34 | Narciso Prudente | OIC-Water Resource Department | NEDA | 631-2192 |
| 35 | Roman F. Taruc | Engineer III | DPWH-NCR | 304-3848 |
| 36 | Francisco M. Limeta | Engineer III | DPWH-NCR | 304-3849 |
| 37 | Mario B. Lagbas | Engineer II | DPWH-NCR | 304-3849 |
| 38 | Robert L. Domingo | Senior Eds | NEDA | 631-2192 |
| 39 | Zaiel Gonzaga | Data Encoder | DPWH | 304-3892 |
| 40 | Rolu. Encarnacion | Service Chief | PAGASA | 922-1992 |
| 41 | Romeo M. Pelagio | Weather Specialist | PAGASA | 922-1992 |
| 42 | Ignacia M. Ramos | Engineer III | ESSO-DPWH | 304-3415/3287 |
| 43 | Eduardo V. Santos | Engineer III | DPWH | 304-3854 |
| 44 | Grecile Christopher Damo | Engineer III | DPWH-PMO-FCSEC | 628-1227 |
| 45 | Joel C. Barroga | CE III | CEO-Caloocan City | 0919-6408433 |
| 46 | Antonio L. Abayon | Engineer IV | MMDA | 882-4150 loc 334 |
| 47 | Galileo Fortaleza | Engineer V | FCSEC | |