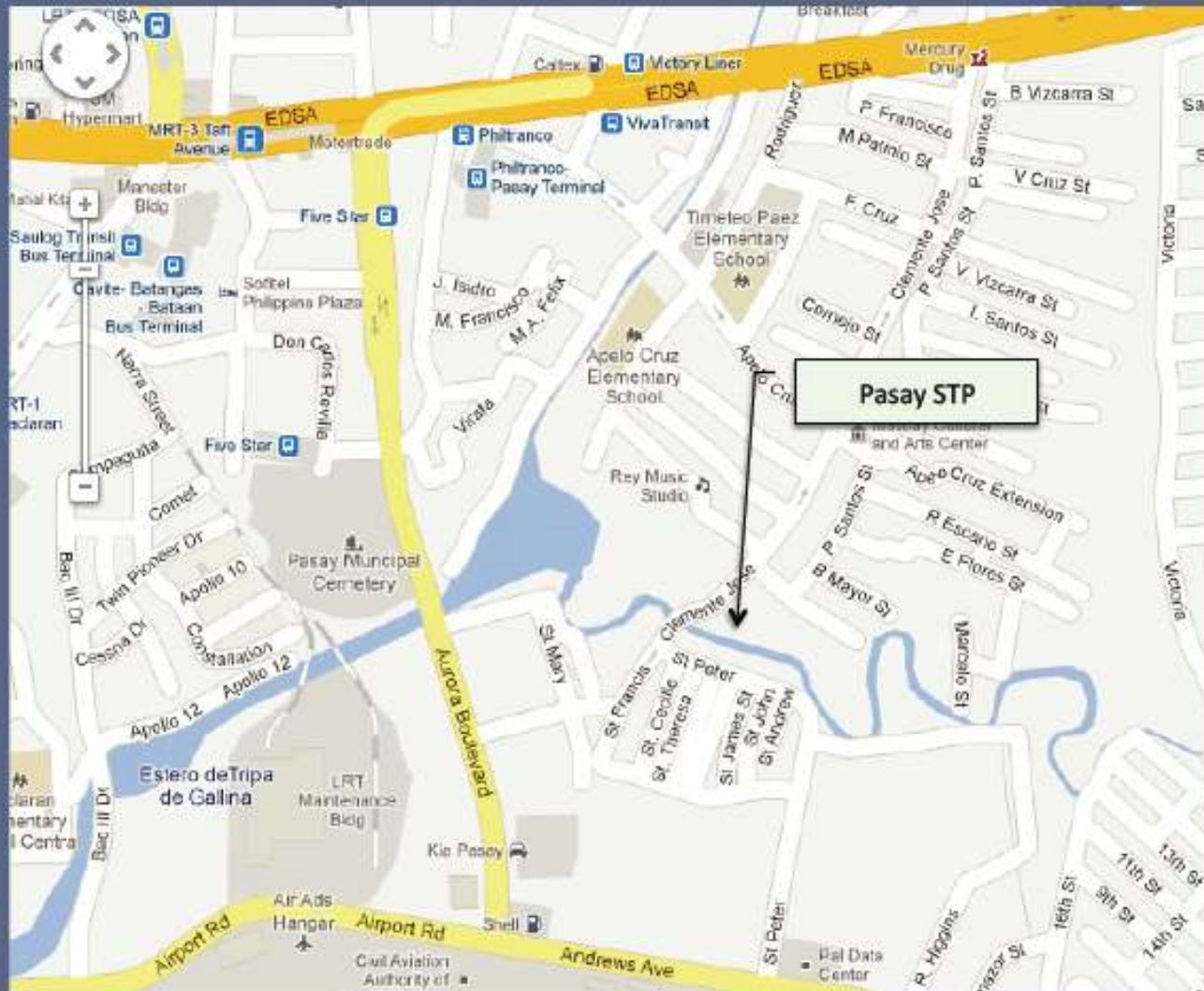


Environmental Impacts and Mitigating Measures

PASAY SEWAGE TREATMENT PLANT

December 9, 2011

Project Location



Project Site



Former paint manufacturing plant of Kemwerke, Inc.

Project Site



Vinyl plant

Project Vicinity



Bantay Basura/Bantay Sunog-Tanso
Outpost, (Bgy 168)



Clemente Jose St.

Project Vicinity



Hauling Service Corporation
C. Jose Street, Bgy 165



IPM Construction and Development Corporation
C. Jose Street, Bgy 165

Maricaban Creek



Problems Caused by Polluted Water

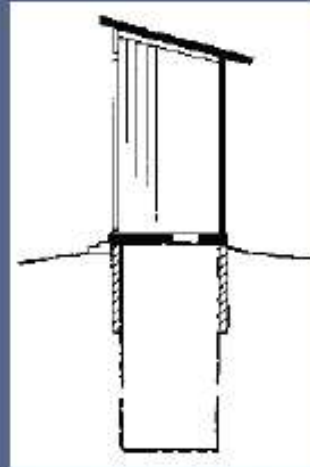
- Spread of water-borne diseases
- Lack of dissolved oxygen in water can cause fish to die from suffocation.
- Fish retain and accumulate substances, such as mercury, that can harm people, animals, birds, and other fish that eat them.
- Excessive nutrients from runoff can cause the growth of too much algae.
- Oil can keep oxygen from reaching the water surface, suffocating fish and killing or harming other creatures.



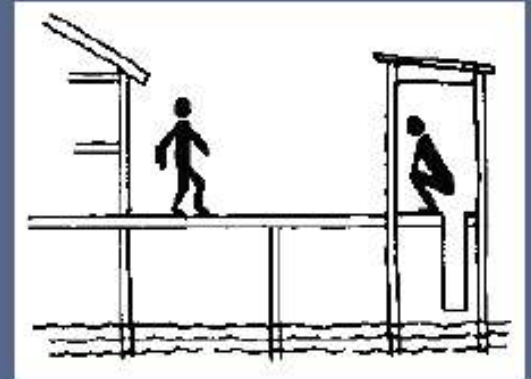
Sewerage and Sanitation Facilities



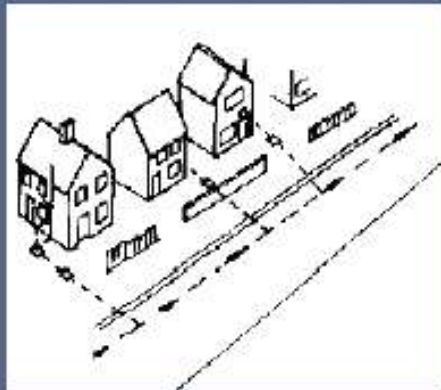
Open defecation



Simple pit latrine



Overhung latrine



Sewerage system



Septic tank

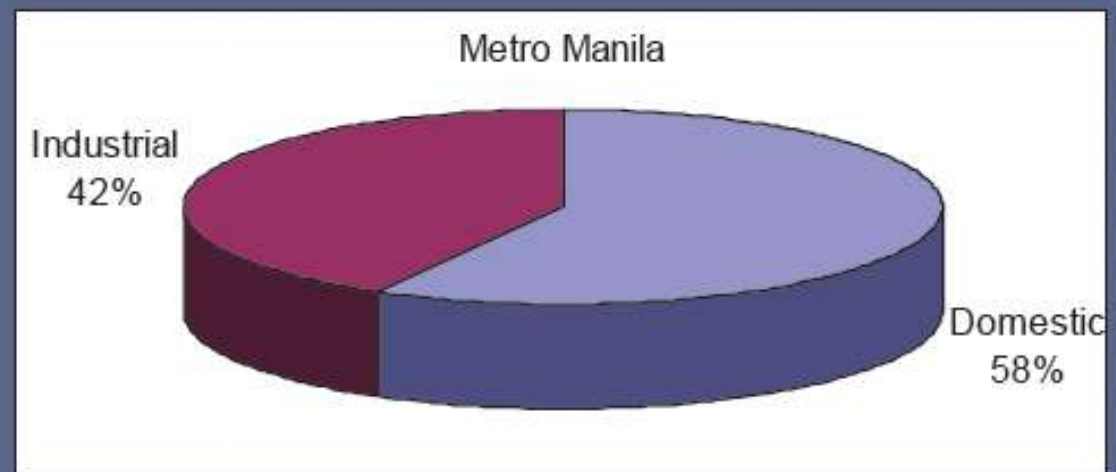
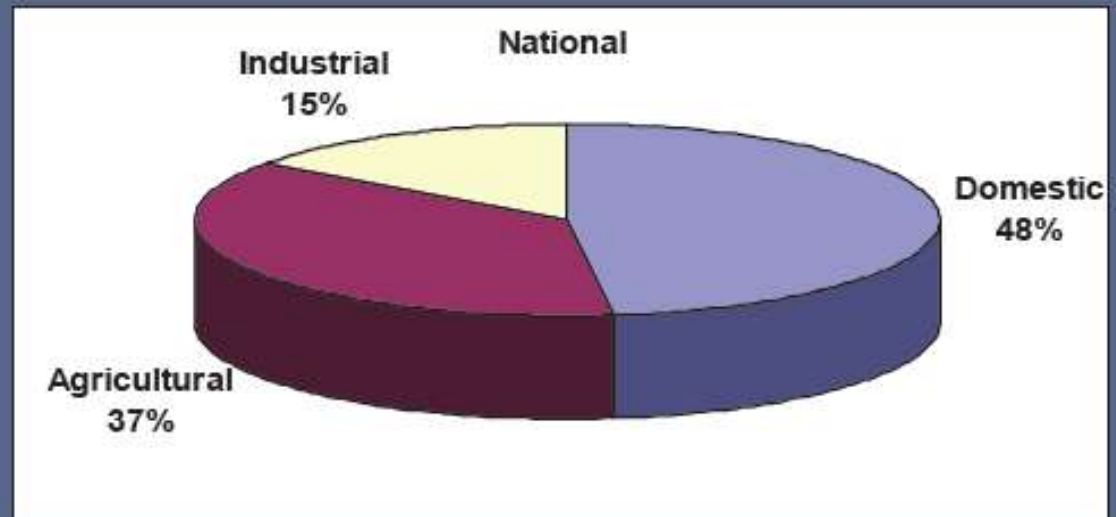
Sources of Water Pollution

National

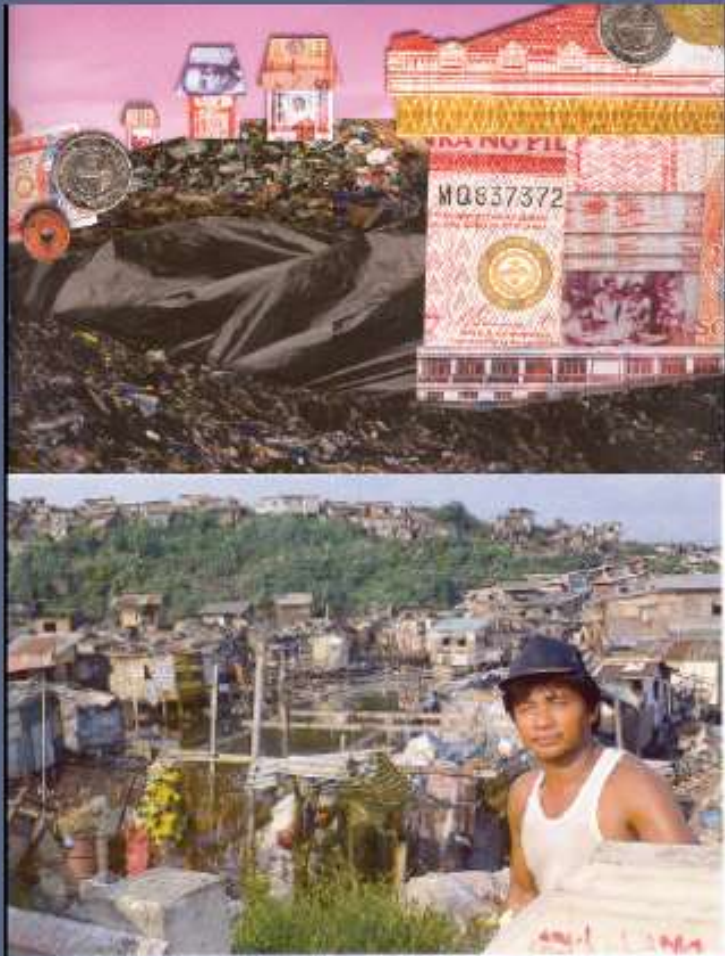
- Domestic
- Agricultural
- Industrial

Metro Manila

- Domestic
- Industrial



Economic Losses due to Water Pollution



- TOTAL - PhP 67 billion (US\$1.3 billion).
 - PhP 3 billion for health
 - PhP 17 billion for fisheries production
 - PhP 47 for tourism.

Project Rationale

- Reduce incidences of water-related diseases
- Improvement of sanitation and cleanliness
- Improvement of water quality of Maricaban Pond and Manila Bay
- Improvement of basic services

Environmental Issues and Mitigating Measures

Environmental Impacts and Proposed Mitigating Measures

PRE-CONSTRUCTION STAGE

- **Site clearing and demolition**
- **Removal of trees and other vegetation during site clearing**
- Require lot owner to clear the site and to properly dispose of wastes and materials left onsite prior to turn-over to MWSI.
- MWSI to inspect and supervise clean-up activities
- Avoid cutting of existing trees to the extent possible.

Environmental Impacts and Proposed Mitigating Measures

CONSTRUCTION STAGE

- **Dust emission**
 - Regular water sprinkling in areas highly influenced by dust emission.
- **Erosion and surface soil runoff causing flooding**
 - Installation of silt traps, deviation channels and trenches around the mounds of materials
- **Noise**
 - Avoid scheduling heavy noise-generating activities at nighttime.

Environmental Impacts and Proposed Mitigating Measures

CONSTRUCTION STAGE

● Sanitation

- Portable toilet facilities will be installed within the construction site for use of construction personnel

● Traffic congestion at Clemente Jose St.

- Schedule hauling of construction materials during off-peak hours
- Prohibit side-street parking
- Assign a security personnel to assist vehicles coming in and out of the site.



Environmental Impacts and Proposed Mitigating Measures

CONSTRUCTION STAGE

- **Open excavations may cause accidents**

- Provide barricades and steel plate covers in open excavations.
- Install warning signages, flashing boards, lighting

- **Occupational hazards**

- Require contractor to implement a Construction Health and Safety Plan

Environmental Impacts and Proposed Mitigating Measures

CONSTRUCTION STAGE

○ **Generation of construction wastes**



- Segregation of wastes
- Recycling/reuse of recyclable wastes
- To be offered to junk shops as scrap material.

Environmental Impacts and Proposed Mitigating Measures

CONSTRUCTION STAGE

- **Employment**
- Provision of job opportunities

Environmental Impacts and Proposed Mitigating Measures

OPERATIONAL STAGE

- **Reduce water pollution (less water-borne diseases)**
- **Improve sanitation**
- Positive benefits
- Regular monitoring of discharge effluent

Environmental Impacts and Proposed Mitigating Measures

OPERATIONAL STAGE

- **Odor from STP**
 - Provision of odor control measures
- **Emergencies and hazards – earthquake, flooding, etc.**
 - Design to consider geologic hazards
 - Implement emergency response measures
 - Plant more trees and other vegetation
- **Generation of screenings, sludge, and solid waste**
 - Daily collection of screening wastes at interceptors and manholes
 - Coordinate with the LGU on implementation of Ecological Solid Waste Management program

END