Draft Project Environmental Management Plan

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People’s Committee of Haiphong
Project Management Unit of Urban Upgrading Project

Vietnam Urban Upgrading Project
Haiphong Sub-Project
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Vietnam Urban Upgrading Project
Haiphong Sub-Project
PART 1 ENVIRONMENTAL ASSESSMENT SUMMARY

1 INTRODUCTION ................................................................................................................. 4
1.1 Background of the Project ......................................................................................... 4
1.2 Environmental Assessment of the Project .............................................................. 4

2 PROJECT DESCRIPTION ................................................................................................. 5
2.1 Objectives and principles of the project .................................................................. 5
2.2 Scope of the project .................................................................................................. 5

3 ENVIRONMENTAL BASELINE .................................................................................. 7
3.1 Location, climate and topography ........................................................................... 7
3.2 Environmental Setting .............................................................................................. 7
3.3 Population and Socio-Economic Environment in Haiphong .................................... 8

4 LOW-INCOME AREAS IN HAIPHONG .................................................................. 8

5 ANALYSIS OF ALTERNATIVES .................................................................................. 8

6 IDENTIFICATION OF IMPACTS ................................................................................ 10
6.1 General impacts ........................................................................................................ 10
6.2 Component 1: Tertiary Infrastructure ..................................................................... 10
6.3 Component 2: Primary and Secondary Infrastructure ........................................... 11
6.4 Component 3: Resettlement Site ............................................................................ 12

PART 2 MITIGATION MEASURES AND ENVIRONMENTAL MONITORING

7 MITIGATION MEASURES .......................................................................................... 14
7.1 General ...................................................................................................................... 14
7.2 Mitigation Measures during Design Phase .............................................................. 14
7.3 Mitigation Measures during Construction Works .................................................. 17
7.4 Mitigation Measures during Operation ................................................................... 18
7.5 Summary of Mitigation Measures ......................................................................... 18

8 ENVIRONMENTAL MONITORING .......................................................................... 19

September 2003
8.1 Present Drainage and Sanitation Monitoring .......................................................... 19
8.2 Proposed Monitoring Programme for VUUP Haiphong Sub-Project ......................... 21

PART 3 CAPACITY BUILDING

9 INSTITUTIONAL ARRANGEMENTS OF THE PROJECT ........................................... 23
9.1 Structure of Organisation and Management of the Project ..................................... 23
9.2 Organisation Structure of Urban Management and Operation ................................ 24
9.3 Community Participation to prepare CUP and CEMP ............................................ 25
9.4 Implementation and Monitoring of CEMP and EMP ............................................ 27
9.5 Training and Support Programmes ................................................................. 28

Drawings
Drawing 1 Location of Phase 1 LIAs and Vinh Niem Resettlement Site

Abbreviations

Organisations
MOC Ministry of Construction
MOF Ministry of Finance
MPI Ministry of Planning and Investment
MONRE Ministry of Natural Resources and Environment
NEA National Environmental Agency
MOSTE Ministry of Science, Technology and Environment
DOSTE Department of Science, Technology and Environment
MOST Ministry of Science and Technology
CMS Consulting Management Services
PMU Project Management Unit
TUPWS Transportation and Urban Public Works Service
VUUP Vietnam Urban Upgrading Project
WB, the Bank The World Bank

Other
BOLUG Building Ownership and Land Use Certificate
EIA Environmental Impact Assessment
EMP Environmental Management Plan
CEMP Community Environmental Management Plan
CUP Community Upgrading Plan
LIA Low-income Area
PIP Project Implementation Plan
RAP Resettlement Action Plan
TA Technical Assistance
O&M Operation and Maintenance
Phuong ward
PART 1

VUUP HAIPHONG SUB-PROJECT

ENVIRONMENTAL ASSESSMENT SUMMARY
INTRODUCTION

1.1 Background of the Project

Vietnam’s cities have rapid growing populations, and infrastructure and utility service investments have lagged far behind demand. Low-income areas have developed, and are continuing to develop, in an ad-hoc unplanned manner with little infrastructure and services. This creates environmental and health hazards for their residents and the city at large. New, innovative and low cost approaches are thus required to address Vietnam’s growing urbanization challenges.

The VUUP aims to upgrade low-income communities in four cities, namely Ho Chi Minh, Hai Phong, Nam Dinh, and Can Tho. The VUUP will provide basic infrastructure and services improvements (referred to hereafter as tertiary infrastructure) to low-income communities already identified in the cities. To ensure that the tertiary infrastructure provided is able to operate effectively and to its optimum, critical primary and secondary infrastructure (referred to hereafter as trunk infrastructure) is also to be provided as part of the VUUP.

It is anticipated that a number of families will have to be unavoidably resettled, and therefore social housing and/or basic serviced sites for housing will be provided (referred to hereafter as housing developments). The combination of investment for tertiary and trunk infrastructure, and housing developments in each city will be referred to hereafter as the city’s sub-project. In each city, the sub-project is divided into two or three phases, each of which will be implemented over a 2-3 year period. Phase 1 will be prepared before the project is presented to the World Bank’s Board and Phase 2 will be prepared during project implementation.

1.2 Environmental Assessment of the Project

According to the Terms of Reference for Phase 1 of Vietnam Urban Upgrading Project - Haiphong Sub-Project the EIA Consultant will prepare Environmental Impact Assessment (EIA) documentation that corresponds to the requirements of the Government of Vietnam and the World Bank safeguard policies OP 4.01 on Environmental Assessment and OP 4.11 on Physical Cultural Resources where the concerns of impacts on cultural structures are triggered. The EIA documentation should also give broad picture on environmental condition in the project areas of all the three phases and specify guidance to the preparation of EIA documentations for next phases.

The scope of the environmental documentation consists of six main tasks as follows:

1. Review and amend as necessary Community Environmental Management plans (CEMPs) for Community Upgrading Plans (CUPs) for the tertiary infrastructure of Phase I
2. Site-specific EIAs for trunk infrastructure and housing developments including Environmental Management Plan (EMP) for Trunk Infrastructure and Housing Development
3. Environmental section of the Environmental and Social Safeguards Framework (ESSF) of the Project Operations Manual
4. Public consultation and public disclosure
5. Reporting
6. Project Environmental Management Plan (PEMP)
According to the Terms of Reference, the Project Environmental Management Plan (PEMP) will include a synthesis of CUP/CEMPs (Task 1) and EMPs (Task 2) for Phase 1 and the ESSF for Phases 2 and 3 (Task 3). The purpose of the PEMP is to describe for the benefit of "non-specialist readers" the treatment of environmental safeguards as per the requirements of GoV and OP 4.01 Annex C. The PEMP should be in three parts: Part 1: Executive Summary; Part 2: Summary of Tasks 1-3 to clearly lay out mitigation measures and an environmental monitoring program; and Part 3: Capacity building program for environmental assessment in the different PMUs and at the community-level.

Draft PEMP has been prepared in September 2003 before the Trunk Infrastructure Consultant has started their work. Therefore especially the information concerning the content, impacts and cost estimations of the project are only preliminary and will be revised for the final report.

2 PROJECT DESCRIPTION

2.1 Objectives and principles of the project

The objectives of Haiphong Sub-Project, as well as the objectives of the Vietnam Urban Upgrading Project in general, are as follows:

- Alleviate poverty in urban areas by improving the living and environmental conditions of the urban poor
- Promote the participatory planning methods for urban upgrading to meet the people's demand
- Use multi-sector approach with communities' consultation in implementation process of upgrading programs.

The most important principle of the project is active community participation in all stages of preparation, design and implementation processes. The residents, who are living in the project area, will have the right to participate and to get benefit from the project as well as contribute to the upgrading works.

The location of Component 1 (Tertiary infrastructure), Component 2 (Primary and secondary technical infrastructure) and Component 3 (Housing for the poor) and low-income areas (LIAs) in eight wards in five districts is presented in Drawing 1.

2.2 Scope of the project

The project will be implemented in two phases. Phase 1 of the project will be carried out in eight wards in five districts as follows: Du Hang Kenh ward in An Hai district (3 LIAS); Trang Minh ward in Kien An district (3 LIAs); Trai Chuoi ward in Hong Bang district (1 LIA); (Niem Nghia ward in Le Chan district (3 LIAs); Tran Nguyen Han and Cat Bi ward in Le Chan district (1 LIA); Cat Dai and May Den wards in Ngo Quyen district (4 LIAs).

There are totally six components in the whole project as follows. Draft Environmental Assessment has been done for Components 2 and 3, but environmental assessment of Component 1 has been compiled to the report, too.
Component 1 (Tertiary infrastructure)

To the Component 1 is including new construction and upgrading of tertiary technical infrastructure in low-income areas (roads, drainage, sewerage, water supply, street lighting and solid waste collection) which are all degraded, lack of investment and are poor quality impacting on living and environmental conditions of the communities. Another part of the component is to upgrade social infrastructure such as kindergartens, primary and secondary schools, health clinics, sites for cultural activities, services etc.

Tertiary social and technical infrastructure in eight wards and communes in Phase I are according to the Haiphong People's Committee Document No. 3852/CV - WB dated August 19, 2002.

Table 2-1 Component 1 Investments

<table>
<thead>
<tr>
<th>Sub-component</th>
<th>Investments</th>
<th>Unit</th>
<th>Amount Phase I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Roads (2-7 m wide)</td>
<td>(m)</td>
<td>16,000</td>
</tr>
<tr>
<td>2</td>
<td>Street lighting</td>
<td>Pole</td>
<td>400</td>
</tr>
<tr>
<td>3</td>
<td>Water meters and water supply network</td>
<td>Meter</td>
<td>2,700</td>
</tr>
<tr>
<td>4</td>
<td>Drainage and sewerage</td>
<td>(m)</td>
<td>18,000</td>
</tr>
<tr>
<td>5</td>
<td>Solid waste collection site</td>
<td>Site</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>Hand carts</td>
<td>Cart</td>
<td>97</td>
</tr>
<tr>
<td>6</td>
<td>Kindergartens</td>
<td>Unit</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Health clinics</td>
<td>Unit</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Schools (primary and secondary)</td>
<td>Unit</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Sites for cultural activities</td>
<td>Unit</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Feasibility Study, Component 1, 2,5,6 September 2003

Component 2 (Primary and secondary technical infrastructure)

The main content of preliminary design of road and street lighting construction and drainage and sewerage construction are as follows:
- Construct Chua Hang road from To Hieu road to Highway No. 5 to the direction of South-East and construct road on top of An Kim Hai Channel
- Upgrade the drainage of An Kim Hai channel in the section from Luon culvert (Thuong Ly canal) to Cau Vuot in Lach Tray street with the length of 5.1 km
- Construct about 8.5 km secondary water supply systems in Kien An and Le Chan districts

Component 3 (Housing for the poor)

The resettlement site of 9.7 ha including 4.3 ha service area for the urban poor / low-income families will be constructed. Total land area required for resettlement site is 14 ha at Vinh Niem ward in Le Chan district. On the proposed site there are about 20 households, which have to be removed. 1.4 km long and 35 m wide access road will be constructed to the resettlement site.

The other three components of the Project are: Component 4 Land and housing management; Component 5 Micro-finance for Housing improvement; and Component 6 Technical Assistance, Design and Supervision and Training.
Based on the TOR agreed by the World Bank, it is envisaged that the Project will be implemented in two phases, lasting at least seven years, starting in the year 2004. Component 1 is proposed to be implemented during Phase 1 and 2, and Component 2 during Phase 1. Other components of the project will be implemented throughout the project period.

3 ENVIRONMENTAL BASELINE

3.1 Location, climate and topography

Haiphong City is located on the southern part of the Bac Bo plain in the coastal triangle delta of Red River. It is bordering with Gulf of Tonkin of South China Sea in the east, and with provinces of Thai Binh in the south, Hai Hung in the west and Quang Ninh in the north and north-east.

The climate of Hai Phong City is dominated by the monsoons with two clear seasons: the rainy season coincides with the hot season from March to October, and the dry season coincides with cold season from November to March.

Table 3-1 Monthly Precipitation, Evaporation (mm) and Humidity (%) in Phu Lien Meteorological Station in 1957 - 1997

<table>
<thead>
<tr>
<th>Month</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainy days</td>
<td>9</td>
<td>14</td>
<td>18</td>
<td>14</td>
<td>12</td>
<td>15</td>
<td>14</td>
<td>17</td>
<td>13</td>
<td>10</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Rain (max)</td>
<td>68</td>
<td>37</td>
<td>54</td>
<td>184</td>
<td>184</td>
<td>167</td>
<td>224</td>
<td>362</td>
<td>182</td>
<td>343</td>
<td>149</td>
<td>35</td>
</tr>
<tr>
<td>Rain (avg)</td>
<td>33</td>
<td>37</td>
<td>54</td>
<td>99</td>
<td>187</td>
<td>244</td>
<td>214</td>
<td>377</td>
<td>232</td>
<td>154</td>
<td>42</td>
<td>16</td>
</tr>
<tr>
<td>Evaporation</td>
<td>55</td>
<td>35</td>
<td>32</td>
<td>39</td>
<td>62</td>
<td>66</td>
<td>71</td>
<td>56</td>
<td>64</td>
<td>76</td>
<td>75</td>
<td>68</td>
</tr>
<tr>
<td>% /</td>
<td>-22</td>
<td>+2</td>
<td>+22</td>
<td>+60</td>
<td>+125</td>
<td>+178</td>
<td>+143</td>
<td>+321</td>
<td>+168</td>
<td>+78</td>
<td>-33</td>
<td>-52</td>
</tr>
<tr>
<td>Humidity %</td>
<td>84</td>
<td>88</td>
<td>91</td>
<td>90</td>
<td>87</td>
<td>86</td>
<td>86</td>
<td>88</td>
<td>85</td>
<td>81</td>
<td>77</td>
<td>77</td>
</tr>
</tbody>
</table>

Rainy days: Average number of rainy days per month
Rain (max): Average highest rainfall of month
Rain (avg): Average monthly rainfall.

The topography in Haiphong is mostly flat and very gently sloping due to the deltaic character of the area. The terrain slopes slightly from northwest to southeast. Ground elevation varies mostly between 0 to 4 meters above the sea level. The soil in Haiphong area consists of alluvial and marine sediments.

3.2 Environmental Setting

The lakes and channels are already overloaded with sewage and their natural cleaning capacity has therefore drastically decreased. They have turned to smelling, heavily polluted and inaesthetich water bodies creating amounts of mosquitoes, which cause a public health risk. The sediment analyses from the lakes and channels show that they are severely overloaded by organic material and nutrients. An Kim Hai is considered the most polluted channels in Haiphong. The other two main channels, the Northeast Channel and the Southwest Channel, are rehabilitated in the Vietnam: Three Cities Sanitation Project – Haiphong Sub-Project.

The main rivers in the Haiphong area are Bach Dang River, Cam River, Lach Tray River, Van Uc River and Thai Binh River. Based on the scattered water analysis data from upstream and downstream of the Cam River, the analysis results indicate that there is already anthropogenic impacts in the upstream river water before it passes the city.
centre. The untreated wastewater from the city, which is discharged to the river, is clearly visible in the analysis results, for example the oxygen in the river water decreases, while the values of ammonium, sulphate and mineral oils increase. The impacts of wastewater discharge are concentrated in the main city area.

3.3 Population and Socio-Economic Environment in Haiphong

According to statistical data in 2001, the population of Haiphong City is 1,723,500 of which urban population is 588,900 accounting for 34.2 % of the total population. Inner city population is 501,700 accounting for 85.2 % of the urban population including four urban districts: Hong Bang, Ngo Quyen, Le Chan, and Kien An. The population growth rate is rather stable; average is 1.14 %/year.

Haiphong is one the most important economic centres of the North of the country. In 2001 the GDP reached 29,231 billion VND. The structure is distributed as follows:

- Agriculture, forestry, aquaculture: 3,006 billion VND (10.3 %)
- Industry, handicraft industry, construction: 17,127 billion VND (58.6 %)
- Commerce, services: 9,098 billion VND (31.1 %)

LOW-INCOME AREAS IN HAIPHONG

To the project belong areas from five urban and rural districts with the total area of about 279 ha and with population of 702,800. From totally 68 areas and communes in 42 wards/communes including 158 residential areas have been surveyed and assessed to be included to the Project. Area of these 42 wards is 7.77 km², population 184,384 people and number of households 46,222. The remaining 26 wards are not low-income areas and have good infrastructure.

From totally identified 42 low-income areas eight areas will include to the Phase 1.

Table 4-1 Summary of all low-income areas in Haiphong

<table>
<thead>
<tr>
<th>No.</th>
<th>District</th>
<th>No. of Wards, Communes</th>
<th>No. of Low Income Areas</th>
<th>Area (km²)</th>
<th>Population</th>
<th>No. of households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>An Hai</td>
<td>4</td>
<td>5</td>
<td>2.09</td>
<td>47,555</td>
<td>12,388</td>
</tr>
<tr>
<td>2</td>
<td>Kien An</td>
<td>9</td>
<td>9</td>
<td>1.77</td>
<td>45,439</td>
<td>11,611</td>
</tr>
<tr>
<td>3</td>
<td>Hong Bang</td>
<td>7</td>
<td>7</td>
<td>2.44</td>
<td>31,044</td>
<td>7,545</td>
</tr>
<tr>
<td>4</td>
<td>Le Chan</td>
<td>9</td>
<td>11</td>
<td>0.55</td>
<td>21,106</td>
<td>5,313</td>
</tr>
<tr>
<td>5</td>
<td>Ngo Quyen</td>
<td>10</td>
<td>10</td>
<td>0.91</td>
<td>39,240</td>
<td>9,365</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>39</td>
<td>42</td>
<td>7.77</td>
<td>184,384</td>
<td>46,222</td>
</tr>
</tbody>
</table>

5 ANALYSIS OF ALTERNATIVES

If the upgrading of tertiary infrastructure in the low-income areas will not be implemented deterioration of the structures will continue and even speed up causing more serious problems for water supply, drainage and traffic; and hinders for economic development of the area. Living conditions of the people are already now almost unbearable and the situation will become worse if no improvement will happen.
The works including to the primary and secondary infrastructure are essential for the improvement of Le Chan district. The An Kim Hai Channel is considered one of the most polluted channels in the city. The other main channels in Haiphong, North-East and South-West channels, will be rehabilitated in Vietnam: Three Cities Sanitation Project – Haiphong Sub-Project. For the water environment of the Haiphong inner city it is essential that also the rehabilitation of An Kim Hai channel would start. The construction of roads would ease the more and more serious traffic congestion in the area.

During the preparation of preliminary CUPs and final CUPs the communities have expressed their needs and ideas about the content of Component 1 Tertiary infrastructure, thus the most necessary requirements should have been satisfied.

Preliminary CUPs propose the average contribution rate of household to the project would be 3% of the whole construction costs of plans. After discussion contribution to construction costs for civil works, such as street lighting and solid waste collection should be excluded from counterpart funding. The rate 3% will be revised after affordability analysis of households in low-income areas. It was proposed that the local contribution rate is 10% of construction costs. In September 2003 Vietnamese version of the Feasibility Study given percentage is 3.8. The final figures will be known after finalisation and approval of Feasibility Study.

Based on average contribution rate of each household, the contribution amount of a low-income area will be determined. Project group of wards will make plan to collect contribution from each household according to varied rates based on community consensus. The well-off households or households who benefit directly from upgrading components, should contribute more than the others.

Selection of Planning Options for An Kim Hai Channel Area was based on options for the engineering design, which have been determined in Pre Feasibility Study. During the preparation process of Pre Feasibility Study the WB mission, Haiphong People's Committee and local consultants have conducted many surveys and assessment on site as well as seminars with relevant departments and agencies and Vietnam: Three Cities Sanitation Project – Haiphong Sub-Project (1B Project) to identify the options for Component 2. The overall location of construction lines has not changed and the concrete options can be described as follows:

- An Kim Hai channel: Comply with approved planning on construction restriction line, decide the channel sections to be upgraded based on the previous proposals
- Road from Chua Hang to Highway No. 5: the existing road is proposed to be upgraded and expanded to the West. To make inventory easier, manage levelling, minimize compensation cost and not affect on cultural and historical structures in the region the resettlement and land acquisition should be planned only on one side of the road

The process of selecting construction lines and locations has to be complied with the requirements of the City's Master Plan and project's objectives.

The proposed resettlement site is at Vinh Niem commune in An Hai rural district, which is for the time being upgraded to Vinh Niem ward including to the Le Chan district. Selection of the area is based on the needed area of the resettlement site defined in the Pre Feasibility Study and Document No 26/QH dated January 9, 2003 of Haiphong Institute of Planning
6 IDENTIFICATION OF IMPACTS

6.1 General impacts

Upgrading of tertiary infrastructure will reduce poverty in the low-income areas in Haiphong by improving infrastructure and basic services and thus providing better environment for the poor people.

Primary and secondary infrastructure will focus on rehabilitation of An Kim Hai Channel, which has many impacts on environmental pollution and landscape of the city. The upgrading works will improve significantly the environment of the area and the city as a whole. The environmental mitigation measures and management will be strictly required during construction and operation phase to reduce adverse impacts on environment and deteriorating landscape. These actions will also improve investment effectiveness on regional and city level.

Existing environmental conditions fail to achieve the environmental quality standards required by the Government policy and legislation. In order to achieve the long-term benefits, the project is expected to generate short-term adverse impacts, particularly during the construction phase due to the proposed scale of the investment. However, the majority of adverse construction phase impacts can be mitigated through:

- The incorporation of appropriate contract conditions that define operating procedures to be adopted by contractors
- Maintaining an effective consultation process that ensures effective participation of community (primary stakeholder) level in implementing the Community Environmental Management Plan (CEMP) and Environmental Management Plan (EMP)
- Ensuring the project management framework provides coherent decision making about defined actions in the event of non-compliance

Almost 26,000 residents in eight LIAs in Phase 1 can get direct socio-economic and environmental benefits through provision of public utilities, services and infrastructure. The number of indirect beneficiaries in the surrounding areas is estimated to be 7,500.

6.2 Component 1: Tertiary Infrastructure

Construction Phase

During the upgrading and construction of roads, lanes, drainage and sewerage, street lighting, upgrading solid waste collection and construction of kindergartens and schools there will be various adverse impacts on the environment at different levels. Construction will cause short-term air and noise pollution. Sorting of solid waste is a new concept and might be difficult to adopt in the beginning.

The means of transport, construction equipments and manpower will be in the continuous work during the whole construction process. These will cause inconvenience to people and risk of pollution to environment.

The gathering of large number of manpower for construction could cause some impacts on the life and surrounding environment at the construction sites. In already densely populated areas this would increase traffic problems, chaotic security and generation of new type of wastes especially at the sites where the workers are concentrated.
The construction of drainage and sewerage system could also cause some adverse impacts to the environment, if not properly mitigated:

- Low sanitation and bad-looking condition of construction site
- Temporary flooding due to the flowing of sediments into the other drainage and/or blocking the flows of the existing drainage
- Scattering of the construction material and excavated soil around the construction and along the transportation routes cause inconvenience, unpleasant odour and air pollution

**Operation Phase**

The implementation of CUP prepared for the LIAs will give clear socio-economic and environmental benefits to residents through the provision of improved public utilities and services and approaching improved conveniences.

### 6.3 Component 2: Primary and Secondary Infrastructure

**Design Phase**

Upgrading of An Kim Hai Channel, improving roads and street will have impact on around 835 households, of which about 417 households have to be relocated and more than 400 households are partially affected. These socio-economic impacts on the living conditions of the people have to be considered in the design selecting options to minimise the need of resettlement.

**Construction Phase**

Construction will have temporary impacts on air quality. Ground levelling and transportation need a considerable amount of equipment and means of transport. The dust and smoke arising from equipment, means of transport and scattered construction materials will impact on health of workers and residents living in surroundings. All kind of equipment will create exhaust fumes including CO, CO_2, NO_x, SO_x and dust on construction sites and along transportation routes.

The equipment will cause noise, which has impact on nervous system of workers and residents living in the area. The noise level depends on the types, density and technical condition of the means of transport, but normally, the noise for heavy vehicles is about 100 dBA.

There might be several impacts on water environment. Water discharged or leaching to channels from construction sites might be contaminated and having soil, sediment and garbage, but also oil spilled from construction equipment and means of transport.

There might be temporarily problems in the surrounding areas, if wastewater from households living along both sides of the An Kim Hai Channel and roads will not be collected properly during the construction of drainage system. During the construction of box culverts the flow of An Kim Hai Channel will be blocked, which might cause flooding and other problems without mitigation measures.

For the time being An Kim Hai Channel is almost full of solid waste and sediment, which have to be removed before construction of box culverts and the road on the top of section 2. Collection and transportation of the excavated material will cause temporary nuisance around the construction site and along transportation routes.

September 2003
The scenery and environment of the area around An Kim Hai Channel and Du Hang and Lam Tuong Lakes will be changed remarkable due to the construction. During the construction there will be temporary adverse impacts, but in the long-term now untidy and charmless scenery will be improved. Also the safety of the area will be improved due to the street lighting and for the time being too common social evils will decrease.

**Operation Phase**

During operation the impacts are mainly positive and due to the improved infrastructure, especially improved traffic conditions and improved quality of An Kim Hai Channel.

### 6.4 Component 3: Resettlement Site

**Design Phase**

Selection the location of needed resettlement site is always complicated, because in the densely populated areas there are is no vacant and uninhabited area available. Therefore location of resettlement site is always a compromise and usually causes an additional need of resettlement of the people who live in the proposed area. Land use and existing activities in the surrounding areas have to be considered, too.

The proposed resettlement in Vinh Niem commune in An Hai District is for the time being mostly agricultural area and the land use and scenery will be changed totally. The design and location of facilities should be adjusted to the existing scenery. On the other hand the area is located near already existing Vinh Niem industrial zone, which has already changed the land use in the area, and next to the site will be constructed Ho Sen – Cau Rao 2 road. There is also proposal to construct wastewater treatment plant next to the proposed resettlement site, but no approval or construction decision have not been made, yet.

**Construction Phase**

Construction of infrastructure and houses at large, 9.7 ha, resettlement site will cause temporary, but reasonable long-lasting inconvenience to the surroundings. Especially the amount of traffic will increase remarkably during the whole construction period and the existing road to the proposed site is not wide enough for transportation during construction. Construction will also cause temporary noise problems in the tranquil agriculture area.

Large construction works needs a big number of workers, which might cause temporary inconvenience and decrease of security in the area. On the other hand to provide different kind of services to the workers increase the possibility for small business i.e. food-stalls, cafes etc.

**Operation Phase**

During the operation the resettlement site causes the same type of impacts than any other living area. High density of population, construction and living activities of residents in resettlement site will affect originally tranquil agricultural area. It might be also difficult for people to settle down in new area especially if needed services are not constructed timely. New social network is difficult to establish and this might cause problems and uncomfortable feelings in the beginning.
PART 2

VUUP HAIPHONG SUB-PROJECT

MITIGATION MEASURES

AND

ENVIRONMENTAL MONITORING PROGRAMME
7 MITIGATION MEASURES

7.1 General

According to OP 4.01 Annex C a project's environmental management plan (EMP) consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. The plan also includes the actions needed to implement these measures. To prepare a management plan, the borrower and its EA design team (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements.

7.2 Mitigation Measures during Design Phase

General Design Instructions

Environmental matters have to be integrated in all the design work and planning of the project. The designing has to be done by minimising the adverse impacts on environment using as much as possible existing facilities and selecting the location of new facilities in areas where the disturbance to environment, people and existing structures is the smallest. Where possible existing rights-of-way has to be used rather than create new ones. The key mitigation measures are noticed in the Feasibility Study Main Report, Project Implementation Plan, Bidding Documents and Contract Documents.

According to the Vietnamese Construction Regulation Standard Article 3.3 Protection of Natural Resources and Environment construction projects should:

- Not cause adverse effect to environment, and technical regulations on scenery and environment protection should be observed
- Protect the natural preservation areas, and historical, cultural and architectural places
- Extracting natural resource must ensure the rationality and cause no obstacle to the next exploitation
- Respect traditional customs, practices, religions of people living in and around the construction area.

In Construction Regulation Standard there are instructions especially for master plan including general instructions for designing sewerage and drainage system. Urban drainage system should be assured:

- To discharge all types of urban waste water
- To have suitable solution for treating wastewater so that the urban area is not flooded, and environment and water sources are not polluted.

In Standard Branch Sewerage and Drainage System and Works, Standard Designs there are more detailed design instructions. However, international design standards have to be introduced and used in design work.

The construction works should be implemented stepwise in order to minimize the moving/transferring of equipment as well as to avoid chaos for the surrounding communities.

September 2003
In spite of the general mitigation measured concerning the whole project local special mitigation measures described in each CEMP of 8 LIAs have to be considered and followed.

Component 1: Tertiary Infrastructure

The road design has to be done according to with the communities agreed standards described in Community Upgrading Plans (CUPs) and Feasibility Study Report. The location and the width of roads and alleys have to be adjusted to the local circumstances to avoid unnecessary resettlement.

In the design of street lighting have to be followed the Vietnamese design standards and safety regulations. In the design of electricity facilities special attention has to be paid to the safety regulations to prevent possibility of accidents.

The design of water supply for proposed two wards has to be done in co-operation with Haiphong Water Supply Company following the standards and norms used in the design of water supply of the other wards of the city.

In the design of drainage and sewerage system has to paid attention to prevent the possibility of contamination water supply system a special attention has to be paid to the crossing of water pipes and possible sewers. It is not allowed to have water pipes going through the drainage manholes or box culverts. If possible the drainage system should be designed as far as possible from water pipelines. Discharging points of the drainage system have to be selected so that the adverse impact is minimised and the back flow of drainage water to pipes has to be prevented.

Drainage design principles have to be selected in co-operation with the other projects implemented in the same area, especially with Vietnam: Three Cities Sanitation Project – Haiphong Sub-Project (1B Project), to avoid overlapping and to optimise the effectiveness of drainage system.

Wards, communes and residential areas should set up self-management groups to collect solid waste under the support of URENCO. The location of solid waste collection points has to be selected together with communities to avoid complaints from the people. Community participation campaigns implemented in URENCO should be continued and expanded during design phase. Already available brochures prepared for URENCO should be delivered and people should be trained how to sort solid waste also to these areas.

Location and size of the different social infrastructure construction should be done according to the needs of communities described in CUPS and Feasibility Study. The Vietnamese construction standards, regulations and dimensioning instructions have to be followed.

Component 2: Primary and Secondary Infrastructure

Drainage design principles of upgrading An Kim Hai Channel have to be selected in co-operation with the other projects implemented in the same area, especially with Vietnam: Three Cities Sanitation Project – Haiphong Sub-Project (1B Project), to avoid overlapping and to optimise the effectiveness of drainage system.

The design has to be done by minimising the need of resettlement. Transportation and disposal of excavated material has to be designing and necessary area reserve from
Trang Cat landfill for disposal. Proper access to the construction sites has to be designed, too.

Road alignments have to be designed avoiding possible cultural and historical monuments i.e. pagodas, temples and communal houses, also the need of resettlement has to be minimised.

The Vietnamese design standards and safety regulations have to be followed in the street lighting design. In the design of electricity facilities special attention has to be paid to the safety regulations to prevent possibility of accidents.

**Component 3: Design of Resettlement Site**

The resettlement site need to be planned as a complete residential area with sufficiently functions according to Vietnam planning standards and the Haiphong City Master Plan. The technical standards applied for resettlement site design should be considered carefully to conform affordability of the modern households. Housing for the poor should be designed suitably with the affordability of the poor households.

In the design of resettlement site has to be followed good design standard for new urban areas. Different facilities have to be located in the logical way, i.e. kindergarten and school near parks and recreational areas. There has to be easy access to market also with motorbikes and cars, and enough parking place has to be reserved and from the very beginning. Houses should be faced in the optimal way to protect from direct sunshine.

In the design of the location of facilities of Vinh Niem resettlement site has to be considered the construction of Ho Sen – Cau Rao 2 road and in the future possible construction of wastewater treatment plant in the vicinity of the resettlement site. There should be buffer zone between resettlement site and wastewater treatment plant site. In the design has to be paid special attention to the existing and planned natural and man-made structures and facilities and utilize them as much as possible. The entire necessary infrastructure has to be designed according to the relevant regulations and standards.

The proposed area is low-lying, 50 cm lower than the city foundations, and this has to be considered in the sewerage and drainage design. Proper access road to the resettlement site has to be designed, too.

**Public Consultation and Disclosure**

Although there has been community participation from the very beginning of project preparation and Community Upgrading Plans have been prepared and Community Environmental Management Plans will be prepared, it is necessary to inform people about the progress of the works during the design phase. Draft Environmental Impact Assessment report has to be available in agreed public place in Vietnamese and leaflets have to be delivered to the people according to the OP 4.01.

**Linkage with Resettlement Action Plan**

Living conditions and rights of the people already living on resettlement site should be considered in design. Design has to be done so that selected options require as little as possible resettlement. Site clearance has to be done in proper way. All the material has to be transported in agreed and appropriate place. As much as possible of material should be recycled.
7.3 Mitigation Measures during Construction Works

All works including to the project have to be implemented following the appropriate standards, specifications and working methods given in the Contract Document. The following list covers the main subjects, which need mitigation measures during the construction phase:

- The construction works should be implemented stepwise in order to minimize the moving/transferring as well as to avoid chaos for the surrounding communities
- To use the most appropriate construction facilities/equipment targeting in minimization of the pollution impacts to the surrounding environment
- To follow previously compiled implementing time schedules
- To implement closely the monitoring activities during the whole construction process, to take immediate measures when dealing with the possible environmental break-down
- To provide appropriate management measures at the sites for gathering of construction materials/facilities, to avoid scattering of materials during transportation
- The transport and gathering of materials/facilities during the whole construction process should be implemented following the time schedule at the agreed time, avoiding the rush hours, using suitably the means of transport during the whole transportation route
- Dredging, transportation and treatment of the sediment from An Kim Hai Channel has to be done following the safety and health regulations. Loads have to be covered tightly and transported to the agreed disposal site
- When the lane and road excavation is needed, the good management measures should be provided and the time to keep excavation open should be minimized
- Protective fences should be arranged around the dangerous construction sites, power stations and stores of inflammable material
- Dust diffusion can be mitigated by dust trap/collectors and according to TCVN 5937-1995
- Noise can be reduced by shortening working time and according to TCVN 59498-1998
- Solid and liquid wastes should be collected to transfer stations established to the construction sites and transported to the landfill. Spills of oils and lubricants have to be absorbed and collected for disposal
- Waste and disposal of excavated materials are disposed at the sites, which are agreed with URENCO
- Potential pollution of piped water is mitigated by clearly pointing out works, good monitoring and complying with articles of CEMP
- Local health and safety regulations at work should be followed
- Construction works and new traffic arrangements during construction works should be announced to the public regionally in newspapers and radio and locally to the ward representatives who will inform the residents

The District PMU shall announce the construction works and new traffic arrangements during construction works to the public regionally in newspapers, TV and radio. Locally the announcement is given to the ward representatives who will inform the residents. Loudspeakers can be used during the construction work to give the latest information in concerning areas. It is extremely important to inform the local people in advance about the public nuisance and especially possible odour nuisance during dredging of an Kim Hai Channel.
7.4 Mitigation Measures during Operation

Component 1: Tertiary Infrastructure

The instructions agreed in CUPs and CEMPs have to be followed, i.e.
- Regular inspection of the condition of drainage system, water supply system and electricity system, possible breakages have to be repaired immediately
- Prevent solid waste disposal into the alleys and drainage by improved solid waste management
- Meet operational and safety standards

Component 2: Primary and Secondary Infrastructure

The instructions agreed in CUPs and CEMPs have to be followed, i.e.
- Condition of box culverts has to be checked regularly to avoid blockages; solid waste has to be collected from channel and culvert; and campaigns to stop littering should be arranged
- Condition of roads, street lighting and drainage along the roads have to be followed, possible breakages have to be repaired immediately

Component 3: Resettlement Site

The good operation and maintenance governance has to be followed concerning the use of all infrastructure facilities. Possible breakages and problems have to be prepared and solved as soon as possible. Special attention has to be paid to the operation and maintenance of infrastructure facilities.

7.5 Summary of Mitigation Measures

<table>
<thead>
<tr>
<th>Phase</th>
<th>Main mitigation measures</th>
<th>Responsible organisation</th>
</tr>
</thead>
</table>
| Design | - International and Vietnamese design criteria and standards to be used  
- Drainage and widening of alleys designed so that need for resettlement is minimised  
- Works designed to implemented during dry season | Design Consultant  
Design Consultant |
| Construction | - Minimise dust, odour, litter, noise and traffic emissions by good operation management and site supervision  
- Appropriate working methods have to be followed  
- Sites have to be kept clean and safe during and after the work  
- Safety and health regulations has to be strictly followed  
- Transportation has to be minimised and routes selected to avoid public nuisance  
- Transportation during rush hours and night has to be avoided  
- Tight and proper equipment to transport sediment and garbage has to be used to avoid accidental spills and odour nuisances  
- Construction sites and time has to be informed to the local people in advance | Contractor  
Contractor  
Contractor  
Contractor  
Contractor  
PMU |
| O&M | - Follow Project Operations Manual, CUPs, CEMPs and EMP  
- Minimise dust, odour, litter, noise and traffic emissions by good operation and maintenance supervision  
- Appropriate working methods have to be followed  
- Immediate preparation of breakages | PMU  
PMU  
PMU  
Communities |
8 ENVIRONMENTAL MONITORING

8.1 Present Drainage and Sanitation Monitoring

Into SADCo has been established Environmental Monitoring System in November 2001 to monitor impacts of Vietnam: 3 Cities Sanitation Project – Haiphong Sub-Project. The Environmental Monitoring System includes the following components:

- Water and sediment quality data
- Flooding data
- Groundwater level monitoring
- Health indicators
- Household sanitation improvements

The responsibilities have been agreed with PMU and SADCo. SADCo is in charge of sampling and analysing and collected data is stored in the PMU’s computer and environmental archive.

Water and sediment quality

Water and sediment samples are taken from North-East channel system from five points and from South-West channel system from five points. The parameters to be analysed are the same as proposed in Environmental Management Plan in December 1998. Some changes have been made to the original parameter list based on the recommendations of the WB environmental specialist.

Table 8-1 Proposed Analytical Parameters of Water and Sediment Monitoring in Rehabilitated Channels and Lakes. Parameters put in brackets are not including anymore to the programme

<table>
<thead>
<tr>
<th>Water analyses</th>
<th>Sediment analyses</th>
<th>Heavy metals from sediment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Moisture content</td>
<td>Arsenic</td>
</tr>
<tr>
<td>pH</td>
<td>Volatile solids</td>
<td>Cadmium</td>
</tr>
<tr>
<td>Conductivity</td>
<td>Total solids</td>
<td>Total Chromium</td>
</tr>
<tr>
<td>Turbidity</td>
<td>Density</td>
<td>Chromium</td>
</tr>
<tr>
<td>BOD₃</td>
<td>Total Nitrogen</td>
<td>(Lead)</td>
</tr>
<tr>
<td>COD</td>
<td>Total Phosphorus</td>
<td>Mercury</td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>(COD)</td>
<td>(Nickel)</td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>(Ammonium (NH₄⁺))</td>
<td>(Zinc)</td>
</tr>
<tr>
<td>(Nitrate (NO₃⁻))</td>
<td>Sulphate (SO₄^{2-})</td>
<td></td>
</tr>
<tr>
<td>(Ammonium (NH₄⁺))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulphate (SO₄^{2-})</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faecal coliform</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sampling is proposed to be done annually once per dry season and once per rainy season. The samples have been taken twice per year starting from November 2001.

Flooding indicators are as follows: rainfall, tide, level of floodwater and water level in lakes and channels in the including to the project area. Planning department of SADCo is measuring flood depth and time from 20 locations in Hong Bang district, 14 locations in Ngo Quyen district and 8 locations in Le Chan district.

September 2003
Hydrological monitoring includes water level measurements at totally eleven points of which seven are in North-East Channel system and four in South-West Channel system. There are already now water level gauge boards at all tidal gates and it has been agreed that WSDSSMP will install the water level gauges to the proposed locations along lakes and channels. The installation time schedule depends on the construction of 1B Project and other lake improvement projects.

**Groundwater level monitoring** will be done according to the need before and during construction of big sewers.

**Health indicators:** SADCo PMU is collecting basic disease data from six phuongs. Health indicator survey has been implemented in 2003.

**Household sanitation improvements:** Sanitation conditions have been surveyed in five phuongs. Women’s Union will update the results annually.

Summary of the proposed monitoring programme of the whole Vietnam: Three Cities Sanitation Project – Haiphong Sub-Project including sludge and septage monitoring in Trang Cat disposal site is presented in Table 8-2.

### Table 8-2 Summary of Monitoring Programmes of Vietnam: Three Cities Sanitation Project - Haiphong Sub-Project

<table>
<thead>
<tr>
<th>Type of monitoring</th>
<th>Number of samples</th>
<th>Frequency / Phase</th>
<th>Needed equipment</th>
<th>Responsible organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety during construction</td>
<td>Lot</td>
<td>During the work / Construction</td>
<td></td>
<td>Contractor</td>
</tr>
<tr>
<td>Safety during operation</td>
<td>Lot</td>
<td>During the work / operation</td>
<td>Gas detector Decibel meter</td>
<td>SADCo</td>
</tr>
<tr>
<td>Lake and channel</td>
<td>4 in lakes 6 in channels</td>
<td>2 / year operation</td>
<td>SADCo / Hired laboratory</td>
<td></td>
</tr>
<tr>
<td>Sludge</td>
<td>1 raw sludge 1 treated</td>
<td>2 / year operation</td>
<td>SADCo / Hired laboratory</td>
<td></td>
</tr>
<tr>
<td>Leachate</td>
<td>1 from pond 1 effluent</td>
<td>1 / month operation</td>
<td>SADCo / Hired laboratory</td>
<td></td>
</tr>
<tr>
<td>Groundwater in Trang Cat</td>
<td>Borehole</td>
<td>2 / year operation</td>
<td>SADCo / Hired laboratory</td>
<td></td>
</tr>
<tr>
<td>Hydrological Monitoring</td>
<td>Lot</td>
<td>1 / day during dry season / operation 1 / hour during rainy season / operation</td>
<td>Water level gauges</td>
<td>SADCo</td>
</tr>
</tbody>
</table>

September 2003
8.2 Proposed Monitoring Programme for VUUP Haiphong Sub-Project

The proposal to follow and monitor the Project in the communities is according to the Data for Environmental Impact Assessment and CUPs as follows:

Table 8-3 Environmental monitoring during construction

<table>
<thead>
<tr>
<th>Upgrading activities</th>
<th>What to monitor</th>
<th>How often</th>
<th>How</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water supply</td>
<td>Excavated soil</td>
<td>Twice a week</td>
<td>Observation</td>
<td>Community leader</td>
</tr>
<tr>
<td>Roads</td>
<td>Dust</td>
<td>Every day</td>
<td>Observation</td>
<td>Community leader</td>
</tr>
<tr>
<td></td>
<td>Noise</td>
<td>At night time</td>
<td>Observation</td>
<td>Community leader</td>
</tr>
<tr>
<td>Drainage</td>
<td>Excavated soil</td>
<td>Every day</td>
<td>Observation</td>
<td>Community leader</td>
</tr>
<tr>
<td></td>
<td>Noise</td>
<td>At night time</td>
<td>Observation</td>
<td>Community leader</td>
</tr>
<tr>
<td>Sludge dredging</td>
<td>Sludge</td>
<td>Every 2. day</td>
<td>Observation</td>
<td>Community leader</td>
</tr>
<tr>
<td></td>
<td>Sludge</td>
<td>Every 2. day</td>
<td>Observation</td>
<td>District officer</td>
</tr>
</tbody>
</table>

Table 8-4 Environmental monitoring during operation

<table>
<thead>
<tr>
<th>Upgrading activities</th>
<th>What to monitor</th>
<th>How often</th>
<th>How</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water supply</td>
<td>Quality</td>
<td>Every day</td>
<td>Observation</td>
<td>Households</td>
</tr>
<tr>
<td></td>
<td>Pressure</td>
<td>Every day</td>
<td>Observation</td>
<td>Households</td>
</tr>
<tr>
<td>Drainage</td>
<td>Sediment</td>
<td>6 month</td>
<td>Checking</td>
<td>Community leader</td>
</tr>
<tr>
<td></td>
<td>Clogging</td>
<td>Every week</td>
<td>Observation</td>
<td>Community leader</td>
</tr>
<tr>
<td>Solid waste</td>
<td>Condition around Transfer site</td>
<td>Every day</td>
<td>Observation</td>
<td>Households nearby</td>
</tr>
<tr>
<td>Transport</td>
<td>Every 2. day</td>
<td>Observation</td>
<td>Community leader</td>
<td></td>
</tr>
<tr>
<td>Disposal site</td>
<td>year</td>
<td>Inspection</td>
<td>URENCO</td>
<td></td>
</tr>
<tr>
<td>Air quality</td>
<td>Odour</td>
<td>Every day</td>
<td>Observation</td>
<td>Households</td>
</tr>
<tr>
<td></td>
<td>Smoke</td>
<td>Every day</td>
<td>Observation</td>
<td>Households</td>
</tr>
<tr>
<td></td>
<td>Dust</td>
<td>4 / year</td>
<td>Measuring</td>
<td>District officer</td>
</tr>
<tr>
<td></td>
<td>Noise</td>
<td>4 / year</td>
<td>Measuring</td>
<td>District officer</td>
</tr>
</tbody>
</table>

It is recommended to include sampling points from An Kim Channel to the existing environmental monitoring programme of SADCo.

The more detailed monitoring programme will be presented in the Final Environmental Impact Assessment Report after the discussion with communities and SADCo.
PART 3

VUUP HAIPHONG SUB-PROJECT

CAPACITY BUILDING
9 INSTITUTIONAL ARRANGEMENTS OF THE PROJECT

9.1 Structure of Organisation and Management of the Project

The Project Management Unit (PMU) has been established as stipulated through the Decision of Haiphong People's Committee to be the project owner. Project Management Unit (PMU) directly manages project implementation process at city level. To support and steer the PMU it is required to set up the Project Steering Unit under Haiphong People's Committee.

![Diagram of project management and steering organization]

Figure 9-1 The structure of project management and steering organization
Figure 9.2 Structure of Project Implementation Organisation on Community Level

9.2 Organisation Structure of Urban Management and Operation

The Government of Vietnam will be responsible for receiving fund from the World Bank in the framework of Vietnam Urban Upgrading Project and approve Pre Feasibility Study report of Vietnam Urban Upgrading Project - Haiphong Sub-project and investment allowance.

The World Bank Group in Vietnam will finance the project through signed agreements; appraise proposals of project on technical and financial aspects and give no-objection letter; review and give no-objection to the invitation for bidding contract packages, and provide and suggest contents of the project.

Haiphong People’s Committee will manage Vietnam Urban Upgrading - Haiphong Sub-project; approve feasibility study report and total cost estimates; approve engineering designs and cost estimates of components; decide to set up project steering unit and project management unit; decide investment; mobilize state capital sources including local funds and fund contributed by people to project proportionally divide responsibility for all works of Haiphong sub-project on the behalf of the Government; and provide documents and figures related to project.

People’s Committee of Districts, Wards and Communes related to the project will manage project’s works in relation with each local area and be responsible for those works with superior People’s Committee; support, create good conditions for relevant units and departments to implement works of the project; take over, manage and monitor construction components after construction of the project in accordance of committed responsibility; and mobilize contributed funds from households in low-income areas for project’s expenditure.
Planning Group in low-income areas will be in charge of Community for project’s works related to low-income areas; and participate in planning and guiding communities to contribute ideas to the contents of community upgrading plan and other works of project.

Project management unit (PMU) is Project owner (Part A) under the direct management of Haiphong People’s Committee, and is responsible for all works related to project such as preparation, engineering design, construction, preparing balance-sheet, inauguration, transferring to other units; and contact with concerned parts in works of project.

Low-income communities will be direct beneficiary from project; and be responsible for participating to project through following works: consult for plans of project, contribute to project by cash and other means, and take part in managing, operation and maintenance and monitoring after construction.

Non-governmental organizations at all levels on behalf of communities, they should be responsible for supporting communities in relevant works of project in their area and locality based on their experiences and prestige.

9.3 Community Participation to prepare CUP and CEMP

Preliminary CUPs have been formulated according to Haiphong People’s Committee Document No. 3852/CV-UB dated 19 August 2002. For VUUP Haiphong Sub-Project has been prepared Community Upgrading Plans (CUP) for Component 1: Tertiary infrastructure upgrading. The preliminary CUPs included 42 low-income areas and for the implementation in Phase 1 has been selected eight LIAs.

Main contents of the Preliminary CUPs

- Integral plan to upgrade tertiary infrastructure including technical and social infrastructure of 8 low-income areas including to Phase I. Tertiary infrastructure is assessed to be the weakest in many aspects and do not have enough capacity to serve communities and need to be improved or constructed
- The poor infrastructure is thoroughly surveyed and assessed and communities have given their proposals. Improvement, upgrading or construction of tertiary infrastructure is based on technical norms and standards of Government and appropriate to local conditions
- The plan is including community participation as follows: contribution to the construction cost of the Project, participation in preparation, implementation process and O&M of the Project
- Survey to determine land use right and ownership within communities in eight residential areas
- Point out basic issues on land and housing that need to be addressed before and after the Project
- Forecast requirements of scope and cost for primary and secondary infrastructure related to the above low-income areas including to Phase I. Updating information on projects, which have been implemented in the area during last five years to collect data for comparison and assessment

September 2003
First Stage of CUP Preparation

Preparation for the preliminary CUPs: Consultation with authorities at all levels, social organizations and residents of communities in low-income residential areas to find and propose community upgrading for the whole Project including low-income areas of Phase I. This work was implemented through following methods: interview with local leaders, social organizations and professional agencies; and surveys with questionnaires in wards, residential areas and households.

Second Stage Consultation with communities in low-income areas of Phase I

- To hold workshops in districts with the representatives of ward authorities, head and vice head of resident group, mass organizations such as Women’s Union, Veteran Association etc. and representatives of communities to collect comments
- The informal units (planning groups) in low-income areas represent the residents to directly participate in planning, supervision, assessment and recommendation for the contents of plans and propose operation and maintenance capacity for construction works after the completion of the Project
- Conduct in-depth meetings, quick interviews were done with representatives of communities related on contents of the Project and socio-economic surveys

Third Stage Prepare the final community upgrading with following contents

- Preliminary engineering designs and cost estimate for items of tertiary infrastructure with different projects to be presented to communities. Level of people's contribution will be announced and communities can choose the final project by themselves
- Hold workshops in communities with the participation of project's consultant, planning groups, ward's authority and representatives of low-income residential areas. Any changes in CUPs' contents are agreed and assessed by communities. Therefore, the workshops in communities have to be conducted several times.
- Plan for final CUPs, operational manual and preliminary contract packaging in order to submit to authorities

Socio-economic survey for households has been done to analyse socio-economic conditions to get a general picture of residential areas to be upgraded. Scale of the social survey in households is based on the selection of about 15% of total households of the 8 low-income residential areas (about 900 questionnaire).

Meeting were organized in communities with representatives of households, heads and vice heads of residents groups and ward's leaders and representatives of non-governmental organizations to discuss community upgrading plan. In the meetings were found concrete and urgent need of community upgrading. Group of community representatives were trustful, responsible and capable took part in community upgrading planning of the their own residential area. These groups were also representatives for the benefits and responsibility of community in the whole Project, especially for the obligation to contribute to the cost of the construction.

In each low-income area, where community upgrading plan will be implemented there have been two meetings in ward with 10 - 12 participants; and 5 - 6 meetings in residential areas with 10 - 15 participants.
There have been 8 planning groups in 8 low-income residential areas. The consultants supervised these groups to conduct survey and formulate community upgrading plan for their own residential areas.

City, district, ward and commune will collect the contribution from households who are beneficiaries of the Project. Local budget supports a part of the cost. It is proposed that the residents will pay O&M costs for tertiary infrastructure such as roads, internal drains and solid waste collection after completion of the Project. The remaining of the tertiary infrastructure and social infrastructure is assigned to the concerning department of the city such as: water supply, electricity supply, communication, school, market, kindergarten etc. Part of O&M costs should be paid from local budget to ensure that the fees are suitable for people's affordability.

The community consultation process of Phase 2 will be carried out as follows:

- To arrange training courses for planning groups on the contents of the final draft CUPs and the method of collecting residents' comments
- To hold work shops in low-income areas to inform about the contents of the CUPs and gather households' comments through questionnaires
- To summarize, check and lay out solution measures for community comments. This is carried out at all levels combining with consultants, planning groups, ward project groups and PMU to produce optimum measures
- The result of the above consultation process is CUPs, which have been chosen by community. Thus, the most necessary requirements of community should be satisfied and community participation and responsibility for the project will be agreed

During developing of the Phase 2, as well as when developing similar projects, all activities should be implemented following the above mentioned. When developing next stages, similar projects should base on specific situation to modify approaches and development methods suitably.

9.4 Implementation and Monitoring of CEMP and EMP

PMU has the main responsibility of the implementation and monitoring of the CEMP and EMP. The daily monitoring will be done in the community level, but PMU will be in charge of the sampling and analysing, which might be needed.

PMU should work closely with community authorities to promote community participation in the planning, management, operation and monitoring of the project. The resident shall be educated to understand the infrastructure problems and their role in overcoming the problems like cleaning and maintenance of drainage system, proper in-house plumping connection, prevention of illegal water supply and electricity connections, solid waste collection, condition of roads and street lighting.

The contractors have to follow and implement the mitigation measures mentioned in CEMP and EMP, and PMU has to follow activities of the contractors.

PMU should have cooperation with the concerning companies in charge of water supply, sanitation, solid waste collection, street maintenance and electricity during the operation of the project to monitor the operation and maintenance.
DONRE is responsible for setting technical standards, for promotion of new environmentally sound technologies and for overall monitoring of compliance with environmental regulations.

PMU should nominate a person to be in charge of monitoring environmental issues, and the person/persons should be trained for environment related inspection. If needed, PMU could establish an inspection team to control and evaluate of the self-inspection and monitoring in the communities and the contractors.

9.5 Training and Support Programmes

During the preparation of the Draft Environmental Impact Assessment report the CEMP was not available, yet, and therefore it was not known what kind of environmental training has been planned for the communities. However, for the needs of next phases of the project it should include environmental training for both PMU and community level. The training should include at least the following:

Environmental Training courses for PMUs

Part 1: Prepare reports on the environmental situation including:
- Target, specific characteristics and principles to prepare environmental monitoring reports
- Institutional considerations
- Establish database for the preparation of the environmental monitoring report including the data base development, spatial data and establishment of the environmental information and monitoring system
- Environmental instructions and guidelines
- Environmental monitoring during the project implementation

Part 2: Environmental Impact Assessment (EIA)
- Overviews of EIA including the necessity, objects, contents and requirements of EIA
- Implementation process of EIA including the preparation, appraisal and implementation process of EIA in Vietnam
- Impact evaluation towards environmental elements: including elements as air, soil, water, noise, biological environment, solid waste, cultural and socio-economic environment
- Technical approaches of EIA
- Socio-economic angle of EIA
- EIA for a urban construction project
- Stipulation and guidance on EIA of international organizations including safeguard policies of the WB and guidance of EIA of other international organizations

Environmental Training courses for communities

Contents of the training course are similar but simpler than the training course for PMUs: Part 1: Preparation of EIA report including items introduction, instructions and environmental situation but not having data base establishment and administrative items. Part 2: Environmental monitoring including items to monitor and evaluate technical and social impacts.
Training course to Implement Monitoring Programme

Community representatives have to be trained to do the on-site observing and monitoring of the upgrading activities during construction and operation. Parameters to be observed and observation sites will be selected together with the representatives of the PMU and the communities based on the proposed monitoring programme.

Because the observation and monitoring is abundantly visual, the scale of the indicators has to be agreed and observers trained to follow the same scale all the time i.e. level of noise, dust, amount of excavated soil, amount of solid waste in the channel, cleanliness of solid waste transfer stations etc. Observation table has to be prepared and the observers are trained to fill the table and prepare reports to PMU.

If some equipment is needed for measurements the observers have to trained to use them in the proper way.

The more detailed environmental training plan will be presented in the Final Environmental Impact Assessment Report.
LOCATION OF PROJECT AREAS OF HAIPHONG SUB-PROJECT IN PHASE 1

CHÚ THÔNG (LEGEND):

- KHU DÂN CƯ ĐÔ THỊ THU NHẬP THẤP TP. HÀI PHONG GIÁI ĐOÁN 1 (LOW-INCOME URBAN AREA PHASE 1)
- KHU DÂN CƯ ĐÔ THỊ THU NHẬP THẤP TP. HÀI PHONG GIÁI ĐOÁN 1 (LOW-INCOME URBAN AREA PHASE 1)
- VIỆT NAM UPGRADE URBAN PROJECT - HAIPHONG SUB-PROJECT
- VIỆT NAM UPGRADE URBAN PROJECT - HAIPHONG SUB-PROJECT
- BẢNG ĐỒ VỊ TRÍ KHU DÂN CƯ ĐÔ THỊ THU NHẬP THẤP TP. HÀI PHONG GIÁI ĐOÁN 1
- BẢNG ĐỒ VỊ TRÍ KHU DÂN CƯ ĐÔ THỊ THU NHẬP THẤP TP. HÀI PHONG GIÁI ĐOÁN 1
- VIỆT NAM UPGRADE URBAN PROJECT - HAIPHONG SUB-PROJECT

VỊ TRÍ KHU DÂN CƯ ĐÔ THỊ THU NHẬP THẤP TP. HÀI PHONG GIÁI ĐOÁN 1

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- HUYẾN AN HẢI
- THUY NGUYỄN
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- HUYẾN AN HẢI
- HUYẾN AN HẢI
- RESETTLEMENT SITE
- RESETTLEMENT SITE
- HUYẾN KIỀN THỦY
- HUYẾN KIỀN THỦY
- HUYẾN AN HẢI
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VIỆT NAM UPGRADE URBAN PROJECT - HAIPHONG SUB-PROJECT

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