

# Resettlement Plan

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January 2013

## NEP: Kathmandu Valley Wastewater Management Project

Prepared by the Kathmandu Upatyaka Khanepani Limited, Ministry of Urban Development, Government of Nepal for the Asian Development Bank.



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Kathmandu Upatyaka Khanepani Limited  
**Project Implementation Directorate**  
**Kathmandu Valley Water Supply & Sanitation Project**

Ref. No. 517/069/070

Anamnagar  
Date : 04 January, 2013

Mr. Fei Yue,  
Director, Urban Development Division, SAUD  
Asian Development Bank  
1550 Metro Manila, Philippines.

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BY: .....

**Subject: Endorsement of Safeguard Document (Kathmandu Valley Waste Water Management Project).**

Dear Sir,

We would like to endorse the safeguard document and requesting for disclosing the same through ADB website. The Draft Project Documents have been forwarded to concerned office for review and approval.

Thanking you.

*Er. Abadh Kishore Mishra*

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Project Director

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**CC:**  
M/S Ministry of Urban Development  
Singha Durbar, Kathmandu.

✓ Mr. Kenichi Yokoyama, Country Director,  
ADB, NRM, Kathmandu, Nepal.

## CURRENCY EQUIVALENTS

(as of 10 December 2012)

Currency unit	-	Nepalese rupee (NRs/NRe)
NRs1.00	=	\$0.01145
\$1.00	=	NRs 87.32

## ABBREVIATIONS

ADB	-	Asian Development Bank
BS	-	Bikram Sambat (Nepali date)
CAPC	-	community awareness and participation consultant
CBS	-	Central Bureau of Statistics
CDC	-	compensation determination committee
CDO	-	Chief District Officer
DAO	-	District Administration Office
DDC	-	District Development Council
DP	-	displaced person
DSC	-	design and supervision consultant
EA	-	executing agency
EMP	-	environmental management plan
Fig.	-	figure
GIS	-	geographic information system
GoN	-	Government of Nepal
GRC	-	grievance redress committee
GRM	-	grievance redress mechanism
Ha	-	hectare
HHs	-	households
HPCIDBC	-	High Powered Committee for Integrated Development of the Bagmati Civilization
IA	-	implementing agency
ID	-	identity card
LICSU	-	low-income consumer support unit
INGO	-	international nongovernment organization
KUKL	-	Kathmandu Upatyaka Khanepani Limited
KVWSMB	-	Kathmandu Valley Water Supply Management Board
LA	-	land acquisition
MoUD	-	Ministry of Urban Development
MWSP	-	Melamchi Water Supply Project
NA	-	not available/not answered
NFDIN	-	National Federation of Disadvantaged and Indigenous Nationalities
NGO	-	nongovernment organization
NLSS	-	Nepal Living Standard Survey
No	-	number
NPC	-	National Planning Commission of Nepal
NWSC	-	Nepal Water Supply Corporation
NRS	-	Nepalese rupees
PD	-	Project Director, PID
PID	-	Project Implementation Directorate
PPTA	-	project preparatory technical assistance
PV	-	photo voltaic

RBTS	-	reed bed treatment system
RP	-	resettlement plan
RS	-	resettlement specialist
R&R	-	resettlement and rehabilitation
SPS	-	Safeguard Policy Statement 2009
SU	-	safeguard unit
TMP	-	traffic management plan
UN-HABITAT	-	United Nations Agency for Human Settlement and Development
UNDP	-	United Nations Development Program
VDC	-	village development council
WSI	-	wastewater system improvement
WWTP	-	wastewater treatment plant

### **WEIGHTS AND MEASURES**

ha.	-	hectare
km	-	kilometer
m	-	meter
m <sup>2</sup>	-	square meter
m <sup>3</sup>	-	cubic meter
mm	-	milliliter
mtd	-	metric tons per day
km <sup>2</sup>	-	square kilometer

### **NOTE**

In this report, "\$" refers to US dollars.

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## EXECUTIVE SUMMARY

1. **Project Description.** The proposed Kathmandu Valley Wastewater Management Project will support the ongoing efforts of the Government of Nepal towards improving the wastewater services in Kathmandu Valley. The project will invest in rehabilitation and expansion of the sewerage network, modernization, and construction of new wastewater treatment plants (WWTP), and improvement of wastewater management in Kathmandu Valley, which will complement past and ongoing Asian Development Bank (ADB) projects: (i) Melamchi Water Supply Project (ADB 1820-NEP); (ii) Kathmandu Valley Water Supply Improvement Project (ADB 2776-NEP); and (iii) Bagmati River Basin Improvement Project (ADB PPTA-43448). The project is expected to increase operational efficiency, improve service delivery, and improve health and quality of life for inhabitants of Kathmandu Valley. The expected outcome of the project will be improved access to efficient and reliable delivery of wastewater services to the residents of Kathmandu Valley, including the poor.

2. **Categorization.** The overall project is classified as category B in accordance with ADB's Safeguard Policy Statement (SPS). ADB's SPS covers both temporary and permanent impacts.

3. **Summary of Resettlement Impacts and Mitigations.** The proposed project includes three components, namely (i) rehabilitation or construction of new wastewater treatment plants already established in different locations in Kathmandu Valley; (ii) construction of interceptors, which will be on the banks of rivers or on government-owned land; (iii) improvement of the wastewater network system (rehabilitation, replacement, laying of new sewer and storm water drains, etc.) and (iv) construction of few DEWATS in isolated areas. These will be within the existing roads or within government-owned land; thus, there is no land acquisition under the proposed project. All the lands required for the project belong to the Government of Nepal. The impacts are limited to the following: (i) damage of agricultural crops planted on government land; (ii) temporary disruption of business activities and income; and (iii) temporary shifting of up to 600 vendors and hawkers during construction works within the right of way (RoW) for the rehabilitation and expansion of the sewerage network. Contractors are required to maintain access to shops to avoid or limit disturbance to the extent possible. Mitigation measures are incorporated into their contracts, as outlined in the environmental management plan (EMP), and will be monitored by the construction supervision consultants. Some mobile hawkers and vendors, including those with stalls and temporary structures, will be assisted by contractors in moving to alternative locations during the brief period of construction, and allowed to return once construction activities are declared complete, usually within 7 days. In the event roads are fully closed, with access to shops disrupted, compensation for lost income will be made for the time of disruption.

4. **Entitlements.** The owners of the standing crops affected during the construction of WWTP and interceptors will be compensated for the net loss of production. Businesses will be compensated for lost income on fully-closed streets where customer access to shops is disrupted. Compensation eligibility is limited by a cut-off date as set for this project on the day of the income survey prior to commencement of civil works. Once a contractor confirms a road is likely to be fully closed (no access for customer traffic), the design and supervision consultant (DSC) social safeguards specialist will conduct an income survey of businesses along the relevant sections of the road and interceptors alignment and WWTP site, especially to Gokarna for the loss of agricultural farming. All affected businesses and crops identified in the project-impacted areas (sections identified for construction) on the cut-off date will be entitled to compensation for their lost income based on the tax record or, in its absence, comparable rates from registered businesses of the same type with tax records. For the crop losses, non-

titleholders will also qualify for compensation. For shops not qualified under these categories (hawkers, vendors, etc.), there will be the option of using the actual income based on survey, followed by a verification of the income data based on comparable incomes in the project area. Mobile hawkers and vendors will be assisted in moving to alternative locations during the period of construction, and entitled to return once works are declared complete by the contractor. A vendor action plan is also included in this resettlement plan. The total estimated cost for compensation, resettlement, and rehabilitation for the project is US\$457,162. The government will provide all funds for resettlement in a timely manner. All compensation is to be paid prior to displacement.

5. **Mechanism for Payment of Compensation.** For the loss of standing crops, the DSC social safeguard specialist will make a survey to identify and record the nature of crops loss, net production from the affected areas, and the total cost. He will also identify the actual owner of the crops, and the identity cards will be distributed to these persons with the amount of compensation they are entitled to. Similarly, for shops experiencing income disturbance from loss of customer access on fully-closed streets, the DSC social safeguards specialist will record the type of business and income loss and make a list of entitled persons. The DSC social safeguards specialist will also identify vulnerable persons entitled to additional assistance. Identity cards will then be distributed to these persons, with the amount of compensation they are entitled to. The list will be submitted to the PID safeguards unit officer in charge, who will then issue a check directly to the persons upon confirmation of the recorded list and identity card. All payments are recorded with the PID for accounting purposes.

6. **Implementation Arrangements.** The Ministry of Urban Development (MoUD) will be the executing agency responsible for overall strategic planning, guidance, and management of the project, and for ensuring compliance with loan covenants. Kathmandu Upatyaka Khanepani Limited (KUKL) will be the implementing agency, and the existing PID in KUKL will be responsible for (i) project planning, implementation, monitoring, and supervision; (ii) reporting to KUKL Board of Directors, MoUD, and ADB; and (iii) coordination of all activities in the project. The experience of PID, KUKL in implementing Kathmandu Valley Water Supply Improvement Project (ADB PPTA- 43448) will be useful in taking advance action for the project. For safeguards, the PID has already established a safeguards unit staffed with environmental, social, and legal specialists. The PID, KUKL will recruit two consulting firms, i.e. a design, supervision and management consultant (DSC) and a community awareness and participation firm. The DSC will have an environmental and social safeguard specialist to assist PID in implementation and supervision of safeguards-related works. Grievances will be addressed by the grievance redress mechanism, which incorporates a clear and grassroots process for addressing public complaints.

7. **Information Disclosure.** To provide for more transparency in planning, and for further active involvement of displaced persons and other stakeholders, the project information will be disseminated through disclosure of the translated versions of the resettlement planning documents. The information will be made available at public places, including the offices of PID, KUKL main office and branch offices, the Kathmandu Metropolitan City office, the Lalitpur Submetropolitan City office, and three municipality offices—Madhyapur Thimi, Bhaktapur, and Kirtipur. Public consultations and disclosures will be continuous in the future during the design, construction, and operation and maintenance phases. The domestic community awareness and participation consultant (CAPC), with the help of the safeguard unit of PID, will be responsible for public consultations and information disclosures. A copy of the resettlement plan will be disclosed on the ADB and project-related websites, and will also be available from PID upon request.

8. **Monitoring and reporting.** The safeguards staff within the PID will monitor RP implementation with support from the DSC and CAPC. The DSC resettlement officer will prepare quarterly progress reports and submit to PID, whereas PID will prepare semiannual monitoring reports and submit to ADB. These reports will describe the progress of the implementation of resettlement activities and any compliance issues and corrective actions. These reports will closely follow the involuntary resettlement monitoring indicators agreed at the time of resettlement plan approval.

## I. PROJECT DESCRIPTION

### A. Background

1. The proposed Kathmandu Valley Wastewater Management Project will support the ongoing efforts of the Government of Nepal towards improving the wastewater services in Kathmandu Valley. The project will invest in rehabilitation and expansion of the sewerage network, modernization and construction of new wastewater treatment plants, and improvement of wastewater management in Kathmandu Valley, which will complement past and ongoing Asian Development Bank (ADB) projects.<sup>1</sup> The project is expected to increase operational efficiency, improve service delivery, and improve health and quality of life for inhabitants of Kathmandu Valley. The expected outcome of the project will be improved access to efficient and reliable delivery of wastewater services to the residents of Kathmandu Valley, including the poor.

2. Kathmandu Valley is characterized by high population growth (estimated to be 6.6% per annum) and high population density (estimated at more than 2,500 persons per km<sup>2</sup>). The total population of Kathmandu Valley was estimated at 2.51 million in 2011 (CBS, preliminary census 2011) and will reach 3.5 million by 2016. The existing wastewater network has not been maintained or expanded to serve the spreading urban areas and increased population. This has resulted in untreated sewage being discharged directly into local watercourses. The rivers have become open sewers presenting severe public health risks, in particular to the urban poor. Moreover, poor access to sanitation facilities, an improper solid waste management system, and groundwater and surface water pollution from untreated domestic sewage have caused increased disease, health risks, and associated economic burdens disproportionately impacting the poor and vulnerable.<sup>2</sup>

### B. Project Components (Figure 1)

3. The proposed project includes (i) rehabilitation or construction of new WWTP already established in different locations in the Kathmandu Valley; (ii) construction of interceptors; and (iii) improvement in the wastewater network system (rehabilitation, replacing, laying of new sewer and storm water drains, etc.).

4. The description of different components under this project is given below.

(i) **Wastewater treatment plant (WWTP).** The work will include the rehabilitation and construction of new WWTP at Kodku (Patan), Sallaghari (Bhaktapur), Dhobighat (Kathmandu), Guheshowri (Kathmandu), and Gokarna (Kathmandu). The WWTP has been designed or rehabilitated in the existing locations, and on government land that was acquired more than 3 decades ago.

(a) Kodku WWTP

The Kodku WWTP was established in 1982 with the assistance of the World Bank, and designed to serve approximately 20,000 populations. At the moment, the plant is partially operational and connected to 30,000

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<sup>1</sup> Melamchi Water Supply Project (ADB 1820-NEP); Kathmandu Valley Water Supply Improvement Project (ADB 2776-NEP); Bagmati River Basin Improvement Project (ADB PPTA-43448).

<sup>2</sup> Vulnerable groups include female-headed households and below poverty line households in urban Kathmandu Valley (according to the NLSS, 2010/10, CBS/NPC, the poverty line in current price is NRs 40,933). The average household size in Kathmandu Valley is 3.67 (CBS, Census 2011). Therefore, it is assumed that the poverty line is NRs. 150,224 per household/year.

populations. It is located in the Lalitpur Submetro, on the banks of Manohara River. The total site area is 6.5 ha. Currently, aquatic plants are growing inside the pond and there is no restriction on access by the public. After the rehabilitation of the existing plant, it will service populations of 80,000 and 110,000 by year 2020 and 2030 respectively. The land was acquired in 1976, and after all the procedures (such as land acquisition and resettlement) were completed, the plant was constructed.

(b) Sallaghari WWTP

The Sallaghari WWTP was established in 1983 with the support of the German Organization for Technical Cooperation (GTZ), and designed to serve a population of approximately 20,000 in the Bhaktapur urban area. It is located in the west of Bhaktapur Municipality and on the left bank of Khasyang Khusung Khola. The total site area is 3.4 ha. The WWTP stopped full-scale operations in 1991 after a problem occurred with its pumping and aeration equipment. Since then, the WWTP has been partially operating without any aeration. Currently, aquatic plants growing in the ponds are harvested by locals to feed livestock. It is estimated that the WWTP will service populations of 100,000 and 125,000 by year 2020 and 2030 respectively, after rehabilitation. All the land acquisition procedures were completed in 1983, and the plant was constructed.

(c) Dhobighat WWTP

The Dhobighat WWTP was established in 1982 with the financial assistance of the World Bank. The plant is located in the Lalitpur Submetro, on the left bank of Bagmati River and about 3 km upstream of Chovar Gorge. The total site area is 30.5 ha, and is surrounded by dense settlements on two sides and Bagmati River on the other two sides. The plant has never functioned at full capacity. The break in the pumping main from Sundarighat pumping station stopped any flow from reaching the plant after a few years of operation. After the rehabilitation, it will serve populations of about 200,000 and 1,600,000 in Kathmandu Valley by the year 2020 and 2030, respectively. About 1 year before, a new solar photovoltaic (PV) system was installed at the project site, occupying about 0.75 ha of the total area. It is owned by KUKL. The plant was constructed under grant assistance from the Government of Japan for pumping groundwater to the Sundarighat water treatment plant. The land was acquired almost 36 years ago, and after completing all the procedures (such as land acquisition and resettlement), the plant was constructed.

(d) Guheshwori WWTP

The Guheshwori WWTP was designed and constructed in 2002 under the Bagmati Area Sewerage Project, and was designed to serve 198,000 people. The plant is located in the Kathmandu Metro, on the bank of Bagmati River. The total site area is 5 ha. The High Powered Committee for Integrated Development of the Bagmati Civilization (HPCIDBC), Nepal Government has been operating this plant. To avoid excess flow of untreated water during the monsoon into the Bagmati River, just in front of the Pashupatinath Temple, the WWTP effluents are diverted to outside of the temple boundary through a bypass tunnel. The plant has not been functioning according to its capacity. It is estimated that after the rehabilitation, it will serve about 300,000 people in some village development councils (VDC) and wards of Kathmandu Metro. All the

private land has been acquired, and the ownership of land has been transferred to HPCIDBC.

(e) **Gokarna WWTP**

The Gokarna WWTP is situated in Gokarneshowr VDC, about 10 km northeast of Kathmandu. The plant is located near the well known Hindu Gokarna Mahadev Temple, where people go to bathe in honor of their living as well as deceased fathers. The plant was designed as a reed bed treatment system (RBTS), which occupies a total area of 0.95 ha. This plant is operated by HPCIDBC. The project is proposing transforming this plant into a low-loaded activated sludge plant. After the construction of the plant, it will serve about 7,200 people in some wards of Gokarneshowr VDC. At the moment, 11 family members are doing agricultural farming separately (on different units of land) in the proposed WWTP land. Out of 11 families, 9 are local residents and 2 are from outside the Kathmandu Valley and living on rent. Majority of them have been doing urban farming for the last 2–3 years. None of them are the previous landowners of the proposed plant site. The land was barren for some years until five affected families requested the local respected elderly person, who is also farming the land, for permission to cultivate some land. For the remaining affected families, two of them are the female members of the committee And the other three families had requested the site staff of HPCIDBC for permission to use the land for vegetable farming. The land size used by each affected family ranges from 100 to 200 m<sup>2</sup>, except for one family who uses a 1,200 m<sup>2</sup> plot of land. However, nine families are living below the poverty line, based on the total household income. (According to the Nepal Living Standard Survey 2010/11, an individual is considered poor if his/her per capita total annual consumption is below NRs. 40,933 in Kathmandu Valley) They have been informed of the construction of WWTP. They are fully aware that the land belongs to HPCIDBC, and are ready to leave when required.

(ii) **Interceptors (about 101 km)**

The total length of the interceptor/collector will be approximately 101 km, excluding new interceptors to be laid along Bagmati River. The work includes the cleaning of existing interceptors and the laying of new ones in the RoW (as fixed by HPCIDBC) on the banks of the following rivers of Kathmandu Valley:

(a) Cleaning of existing interceptors (Kathmandu)

- Left bank of Bishnumati from Dhalko to Teku

(b) Laying of new interceptors (Kathmandu)

- Right bank of Bagmati from Dhobighat WWTP to Manohara
- Both banks of Bishnumati from Bagmati confluence to Mahadev

Khola

- Both banks of Dhobikhola from Bagmati confluence to Mahankal
- Right bank of Manohara from Bagmati confluence

Lalitpur

- Left bank of Bagmati from Khokana to Dhobighat WWTP
- Left bank of Bagmati from Dhobighat WWTP to Manohara confluence

#### Bhaktapur

- Left bank of Khasyangkhusung Khola until Sallaghari WTP
- Right bank of Hanumante from Sallaghari to Hanumanghat WWTP
- Left bank of Hanumante from Sallaghari WWTP

#### Madhyapur Thimi

- Left bank of Manohara from Bode Dhunchapakha to Hanumante confluence
- Right bank of Hanumante from Manohara confluence

The High Powered Committee for Integrated Development of the Bagmati Civilization (HPCIDBC) has recently published a public notice regarding the construction prohibition for any structures within the RoW for different rivers of Kathmandu Valley, which was decided by the Government of Nepal (2065/08/01-2008/11/06) (Appendix 1). The pipeline alignments will be on existing RoWs. The government has defined 20 m on both banks of rivers in Kathmandu as RoWs, so the interceptors will be laid within the RoWs.

### (iii) **Rehabilitation and expansion of sewerage network (about 500 km)**

The total length of the sewer network, including different activities, is about 500 km. The works include neighborhood sewer improvement and combined system separation, which include: (i) rehabilitation of 126 km of sewer and replacement of about 40 km of old brick sewers and 13.5 km of lateral sewers; (ii) expansion of service coverage by laying about 151 km of new sewer; (iii) connecting to new customers; (iv) separation of the combined sewer system into sanitary and storm water, wherever possible (initial assessment of about 109.5 km); and (v) cleaning of 55.5 km of sewer blockage in the following metro/submetro municipalities:

#### (a) Kathmandu Metropolitan

The cleaning of existing sewers, rehabilitation of existing combined sewers, and separation by laying of new sanitary sewer and storm water drains will cover the whole city area, whereas the laying of new sewers will be in periphery areas, and the replacement and laying of new brick sewers will be in core areas.

#### (b) Lalitpur Submetropolitan

The cleaning of existing sewers will be from Jawalkhel to Ekantakuna and other places. The rehabilitation of existing combined sewers will be within core areas. The separation by laying new sanitary sewers will cover Natole-Gabahal, Mangal Bazaar, Sankhamul, Kumaripati-Minbhawan, Lagankhel-Batukbhairav, and other areas. Separation by laying new storm water drains will be in the flood-prone areas such as Mahapal, Patan Campus, Kumaripati, Kusunti, Satdobato-Gwarko, Bakhundole-Kupondole, and ICIMOD-Hatiban.

#### (c) Bhaktapur Municipality

The cleaning of existing sewers will be in Sangam Chowk, Chochhen, Lachichha Gali, and Byasi Kamal Vinayak. Rehabilitation of existing combined sewers will be in Kamicha Galli, Gachhen, Dekocha, Hanumanghat, Chasukhel, Dockche, and Ichadole. Separation by laying

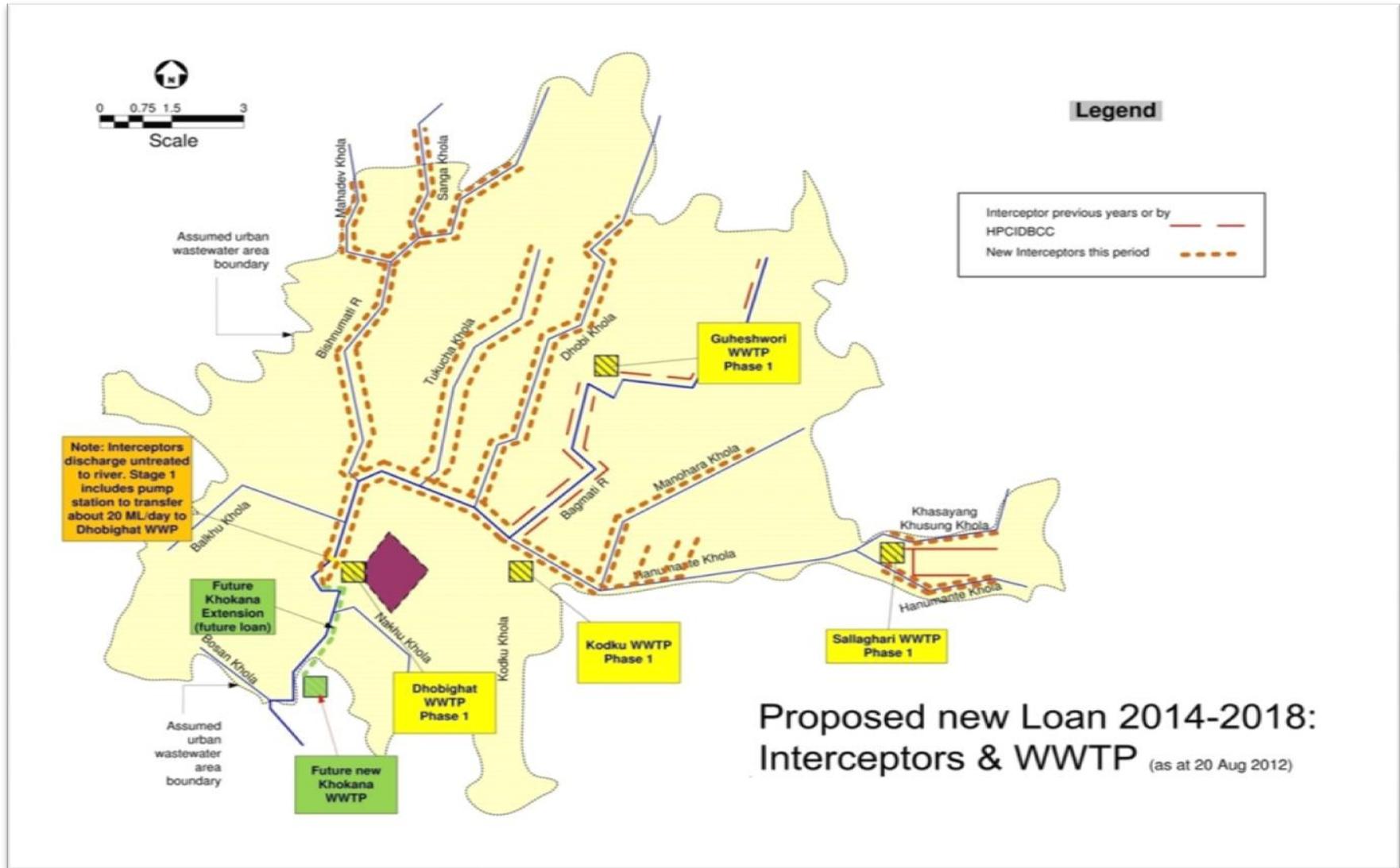
of new storm water drains will be in Bhaktapur Industrial area, Wachu to gella, Thulo Byasi, Bhelukhel, Lakulach, and Thucho tole.

(d) Kirtipur Municipality

In Kirtipur, cleaning of existing sewers will be proposed in Nayabazar, Sagal, Samal, Nagaon, Baghbhairav, and Khasi Bazaar area. Rehabilitation of existing combined sewers will be within the town planning area. The separation by laying new storm water drains will be in Nayabazar, whereas new sewage pipelines will be laid in Panga Chinchu, Nagaon, Creative School, Karki Tole, Dhusi, and Dathal.

Due to the lack of information on the drainage network, it is difficult to identify the existing drainage network and expansion of sewerage network in the valley. The length of the sewer is estimated on the basis of desktop analysis and the road location. The project has recommended an assets condition survey to know the exact locations and conditions of the sewer network in the valley so that the cleaning of existing sewer and sewerage expansion can be made possible. However, the above rehabilitation and expansion of the sewerage network will be within the existing road or within government-owned land. Recent widening of different main roads and inner roads conveniently facilitates the rehabilitation and expansion of the sewerage network in the valley. There will be no need for acquisition of additional land for the proposed work. This will be confirmed after the final detailed design is completed.

Figure 1: Map Showing the Proposed Wastewater Treatment Areas and the Interceptors



## II. SCOPE OF LAND ACQUISITION AND RESETTLEMENT

5. It is expected that there will be no land acquisition under the proposed project. The proposed rehabilitation/upgrading or new construction of wastewater treatment plants will be within the existing WWTP sites or government land. All the lands have been transferred to the name of the government-owned Nepal Water Supply Corporation (NWSC). NWSC had already handed over all the documents related to land and resettlement to KVWSMB. However, at Gokarna WWTP, some 11 informal land users were found doing farming activities at the plant site. The laying of interceptors will be also in the government RoW in different embankment rivers of Kathmandu Valley, as determined by the Kathmandu Valley Urban Development Committee and endorsed by the Government of Nepal, as quoted and published by the High Powered Committee for Integrated Development of the Bagmati Civilization (HPCIDBC) in Gorkhapatra on 3 July 2012. Similarly, the cleaning, rehabilitation, laying of new sewerage pipelines, and land for other civil works will be within the existing roads or on secure government land. However, this RP is prepared as a draft document to be updated and finalized after the detailed design is completed.

6. The project impacts are limited to the following project components:

- (i) Rehabilitation of existing connections and laying of new sewer connections: the following potential temporary short-term impacts may be anticipated during construction: (a) Livelihood: Loss of customers visiting shops due to reduced access, difficulty in bringing supplies to shops, shifting and/or reduced access to street vendors and hawkers; (b) Accessibility: pedestrians and vehicular traffic will face difficulty, decreased access to shops and markets for local population, increase in travel time; (c) Other: degradation of road, damage of other utilities (such as sewer network/neighborhood connection, water points/drinking water supply connection to community/households, sanitation, footpaths/trails, culverts, etc.) during construction that may impact service levels temporarily.
- (ii) Wastewater treatment plant: The work will be within the existing land, so there will be no impact to the community or to the businesses and shops, except the permanent economic displacement of 11 families doing agricultural farming in Gokarna WWTP.
- (iii) Laying of interceptors: The laying of interceptors will be on the bank of rivers. In most of the rivers bank, 4–6 m of bypass road have been constructed. The government is currently constructing and widening the road and planning to construct alternative roads for Kathmandu citizens on all the banks of rivers. Since, the road width is almost more than 4 m and the diameter of the interceptor will range between 300 mm in the upper part and 2,400 mm in the lower part of the river, it can be laid down within the road already constructed. During the construction of Interceptors, crop losses, structural damage, and relocation to a few permanent or semi-permanent structures may be anticipated, especially on the banks of Bishnumati/Sangle Khola and Manohara, Hanumante, and Khasyangkhusung Rivers for the laying the pipes.

7. While laying the interceptors, people will be informed beforehand (3 months before construction) to harvest the standing crops. If the harvesting of crops will not be possible, compensation will be recommended for loss of crops. It has been roughly estimated that about 2 ha of land will be disrupted during interceptor construction, assuming the construction of the sewer pipe will not require more than 5 m on both sides of the banks of the river.

8. During the construction phase, there will be temporary inconveniences such as increased vehicle movements resulting in dust, noise, and waste disposal, particularly for the residents and pedestrians in the immediate vicinity of the work. Temporary economic impacts to businesses along the core areas are expected to be short-term, where rehabilitation, cleaning, or construction of new sewerage pipelines has been proposed. Similarly, temporary impacts on the crops along the riverbanks are expected. Temporary economic impacts will be minimized or mitigated through good traffic management planning and implementation, night works, and maintaining access to shops during the construction period.

9. About 13,700 shops have been registered in 35 wards of Kathmandu Metro. More than that number of unregistered shops has been estimated to exist in the project area. It means about 30,000 shops will be directly or indirectly affected during rehabilitation and extension of the sewerage network in the valley. Similarly, 2,000 hawkers are estimated to be directly or indirectly affected during the work. About 30% of shops and hawkers could be temporarily disrupted in one way or another during the construction. On this basis, it is estimated that for the whole of the project area, nearly 9,000 small- to medium-sized businesses or shops and over 600 street hawkers or vendors could be temporarily affected. As much as possible, temporary economic impacts will be minimized or mitigated through good traffic management planning and implementation, night works, and maintaining access to shops during the construction period. However, when the economic impacts cannot be avoided, a resettlement plan (RP) following ADB SPS (2009) on involuntary resettlement safeguards will have to be prepared. To address these issues, appropriate mitigation measures will be developed in the resettlement plan (RP).

10. The following mitigation measures are proposed to avoid and/or reduce the impacts to businesses during linear pipe works:

- (i) Provide at least 1-2 weeks advance notice to the community along the stretch and conduct awareness campaigns in coordination with contractor, DSC, and community participation consultant. Distribute project information.
- (ii) Maintain access to avoid disturbance to residents and businesses by providing planks and leaving spaces for businesses and residents to maintain access.
- (iii) Manage traffic flows as per traffic management plan prepared by the contractor in coordination with local authorities and communities, and conduct works at night where possible (Appendix 10).
- (iv) Limit amount of time when trenches are open, and complete works quickly where lots of businesses are located.
- (v) Avoid full street closure to extent possible.
- (vi) Provide employment opportunity to the affected people.
- (vii) Place the Kathmandu Upatyaka Khanepani Limited (KUKL) phone hotline in visible areas. Make the community fully aware of the grievance mechanism and provide contact information of the Project Implementation Directorate (PID) and KUKL branch offices.
- (viii) Contractors will assist vendors and hawkers in shifting to alternative locations.

11. **Business survey.** In order to estimate the scale of temporary impacts during construction and to come up with a budget for compensation, a survey of businesses was undertaken in July 2012 to determine the daily income from different types of business and hawkers in the core city areas of proposed sewerage pipeline works. The sample survey was conducted in different core areas of Kathmandu Metro and Lalitpur Submetro. The problematic areas like Jamal, Thamel, Putalisadak, Tripureshowr, Thapathali Shantinagar, Pepsicola, Koteshowr in Kathmandu Metro and Alkhu (Patan), Bakhumbal, Chakupat, Bagaldola, Mangal bazaar, Satdobato, and Godawari Chowk of Lalitpur Submetro were

selected for the survey. A total of 77 shops of 28 different types and 13 hawkers of 5 different types were randomly interviewed in different parts of the valley. In selecting the shops to be interviewed, different categories such as large, medium, and small were chosen on both minor and major roads.

12. Table 1 summarizes the sample of occupants within selected proposed sewerage pipeline work in the valley.

13. **Daily income estimates for permanent shops.** The shopkeepers were usually hesitant in providing information on daily turnover or profit from their businesses. The questionnaire used for interviewing the shopkeepers and hawkers is provided in Appendix 2. Based on the survey of 76 permanent shops in the sewerage pipeline area, the average daily income of shops surveyed after deducting rent is NRs. 1,194 per day (approximately \$14).<sup>3</sup> This information was then used to estimate the compensation cost in case of disruption to business caused by road closures during laying and rehabilitation of sewer lines in the project area.

**Table 1: Business Survey of Permanent Shops in the Proposed Sewerage Rehabilitation and New Sewerage Pipeline Laying Area**

S.N	Metro/Municipality	Location Address	Type of Business	Owner/Tenant	No. of Persons Employed	Average Daily Profit (NRs.)
1	Kathmandu Metro	Khariko Bot, Shantinagar-34	Tailoring	Tenant	2	700
2	Kathmandu Metro	Babuchiri Chowk Shantinagar-34	Construction materials	Owner	3	500
3	Kathmandu Metro	Kumud Devkota Marga, Shantinagar-34	General store	Tenant	2	500
4	Kathmandu Metro	Kumud Devkota Marga, Shantinagar-34	Cyber cafe	Tenant	3	400
5	Kathmandu Metro	Nogendra kanch Chowk, Shantinagar-34	Small hotels/ restaurants	Tenant	1	300
6	Kathmandu Metro	Namuna Marga, Pepsicola-35	Bangles	Owner	2	NA
7	Kathmandu Metro	Namuna Marga, Pepsicola-35	Fruits	Tenant	2	500
8	Kathmandu Metro	Namuna Marga, Pepsicola-35	Clothes/ ready-made garments	Tenant	1	500
9	Kathmandu Metro	Namuna Marga, Pepsicola-35	Vehicle repair	Tenant	4	NA
10	Kathmandu Metro	Pepsi planning, Pepsicola-35	Vegetables	Tenant	1	400
11	Kathmandu Metro	Pepsi planning, Pepsicola-35	Medicine	Tenant	1	3,000
12	Kathmandu Metro	Namuna Marga, Pepsicola-35	Electrical goods	Tenant	1	1,000
13	Kathmandu Metro	Namuna Marga, Pepsicola-35	Small hotels/ restaurants	Tenant	2	1,500
14	Kathmandu Metro	Namuna Marga, Pepsicola-35	Vegetables and fruits	Tenant	1	4,000
15	Kathmandu Metro	Sairam Chowk, Pepsicola-35	Clothes/ ready-made garments	Tenant	2	1,000
16	Kathmandu Metro	Sairam Chowk, Pepsicola-35	Vegetables and fruits	Tenant	1	3,000

<sup>3</sup> The exchange rate is \$1= NRs 85.00

S.N	Metro/Municipality	Location Address	Type of Business	Owner/ Tenant	No. of Persons Employed	Average Daily Profit (NRs.)
17	Kathmandu Metro	Tripureshowr	General stores	Owner	1	1,000
18	Kathmandu Metro	Tripureshowr	Others	Owner	2	NA
19	Kathmandu Metro	Tripureshowr	Flowers	Tenant	NA	NA
20	Kathmandu Metro	Tripureshowr	Paintings	Tenant	3	400
21	Kathmandu Metro	Tripureshowr	Vehicle repair	Tenant	2	7,000
22	Kathmandu Metro	Tripureshowr	Small hotels/ restaurants	Tenant	1	1,500
23	Kathmandu Metro	Tripureshowr	General stores	Owner	1	500
24	Kathmandu Metro	Tripureshowr	Vehicle repair	Tenant	3	1,000
25	Kathmandu Metro	Tripureshowr	Small hotels/ restaurants	Owner	5	1,000
26	Kathmandu Metro	Tripureshowr	<i>Pau bhandar</i>	Tenant	2	2,500
27	Kathmandu Metro	Tripureshowr	Small hotels/ restaurants	Tenant	2	2,000
28	Kathmandu Metro	Tripureshowr	General stores	Tenant	2	3,000
29	Kathmandu Metro	Tripureshowr	Clothes/ readymade garments	Tenant	2	1,000
30	Kathmandu Metro	Putali Sadak, Ramshah Path	Electrical goods	Tenant	2	5,000
31	Kathmandu Metro	Putali Sadak, Ramshah Path	Photo studio	Owner	3	500
32	Kathmandu Metro	Putali Sadak, Ramshah Path	Clothes/ ready-made garments	Tenant	1	8,000
33	Kathmandu Metro	Putali Sadak, Ramshah Path	Others	Tenant	2	NA
34	Kathmandu Metro	Putali Sadak, Ramshah Path	General stores	Tenant	2	3,500
35	Kathmandu Metro	Putali Sadak, Ramshah Path	Medicines	Tenant	2	5,000
36	Kathmandu Metro	Putali Sadak, Ramshah Path	Electrical goods	Owner	1	7,000
37	Kathmandu Metro	Putali Sadak, Ramshah Path	Clothes/ ready-made garments	Owner	3	NA
38	Kathmandu Metro	Putali Sadak, Ramshah Path	Newspaper Seller	Owner	2	NA
39	Kathmandu Metro	Putali Sadak, Ramshah Path	General stores	Owner	2	NA
40	Kathmandu Metro	Putali Sadak, Ramshah Path	Books/ stationeries	Owner	3	NA
41	Kathmandu Metro	Putali Sadak, Ramshah Path	Books/ stationeries	Owner	2	NA
42	Kathmandu Metro	Jamal Road, Jamal -1	Clothes/ ready-made garments	Tenant	1	2,000
43	Kathmandu Metro	Jamal Road, Jamal -1	General stores	Owner	1	NA
44	Kathmandu Metro	Jamal Road, Jamal -1	Fruits	Tenant	2	300
45	Kathmandu Metro	Jamal Road, Jamal -1	Bags	Owner	2	1,000
46	Kathmandu Metro	Jamal Road, Jamal -1	Bags	Owner	1	500
47	Kathmandu Metro	Jamal Road, Jamal -1	Clothes/ready-made garments	Owner	1	4,000
48	Kathmandu Metro	Jamal Road, Jamal -1	Gas	Owner	1	500
49	Kathmandu Metro	Jamal Road, Jamal -1	Mobile shops	Tenant	1	800
50	Kathmandu Metro	Jamal Road, Jamal -1	Mobile shops	Owner	2	NA

S.N	Metro/Municipality	Location Address	Type of Business	Owner/Tenant	No. of Persons Employed	Average Daily Profit (NRs.)
51	Kathmandu Metro	Kantipath	Books/ stationeries	Owner	3	NA
52	Kathmandu Metro	Tridevi Marga, Thamel -29	Photo studio	Owner	3	NA
53	Kathmandu Metro	Tridevi Marga, Thamel -29	Clothes/ ready-made garments	Owner	3	NA
54	Kathmandu Metro	Tridevi Marga, Thamel -29	Bangles	Owner	3	NA
55	Kathmandu Metro	Tridevi Marga, Thamel -29	Clothes/ ready-made garments	Owner	2	NA
56	Kathmandu Metro	Tridevi Marga, Thamel -29	Bangles	Owner	1	NA
57	Kathmandu Metro	Tridevi Marga, Thamel -29	Ornaments	Owner	1	NA
58	Kathmandu Metro	Tridevi Marga, Thamel -29	Clothes/ ready-made garments	Owner	3	NA
59	Kathmandu Metro	Tridevi Marga, Thamel -29	Others	Owner	2	2,000
60	Kathmandu Metro	Tridevi Marga, Thamel -29	Books/ stationeries	Owner	1	300
61						NA
62	Lalitpur Sub- Metro	Satdobato chowk	Utensils	Tenant	1	500
63	Lalitpur Sub- Metro	Satdobato chowk	Grocery	Tenant	2	500
64	Lalitpur Sub- Metro	Sahid Sukraraj Marga, Bakhumbal-11	Electrical goods	Owner	1	3,000
65	Lalitpur Submetro	Sahid Sukraraj Marga, Bakhumbal-11	Tailoring	Tenant	2	300
66	Lalitpur Submetro	Sahid Sukraraj Marga, Bakhumbal-11	Clothes/ ready-made garments	Tenant	1	500
67	Lalitpur Submetro	Sahid Sukraraj Marga, Bakhumbal-11	Bathroom fittings	Owner	1	2,000
68	Lalitpur Submetro	Sahid Sukraraj Marga, Bakhumbal-11	General Stores & Vegetables	Tenant	2	1,000
69	Lalitpur Submetro	Olkhu -11, Patan	Others	Tenant	1	500
70	Lalitpur Submetro	New Chakupat, Lalitpur-22	General stores	Owner	2	700
71	Lalitpur Submetro	Chakupat, Lalitpur-22	Others	Tenant	1	100
72	Lalitpur Submetro	Chakupat 73, Lalitpur-22	Tailoring	Owner	1	400
73	Lalitpur Submetro	Chakupat, Lalitpur-22	Small hotels/ restaurants	Tenant	2	800
74	Lalitpur Submetro	Chakupat, Bagaldol, Lalitpur-22	Medicine	Tenant	3	600
75	Lalitpur Submetro	Mangal Bazar	Bangles	Owner	2	800
76	Lalitpur Submetro	Mangal Bazar	Shoes	Tenant	3	900
77	Lalitpur Submetro	Mangal Bazar	Shoes	Tenant	2	900

14. **Daily income estimates for hawkers**, Based on the survey of 14 hawker stalls in the sewerage network rehabilitation area, the average daily income of hawkers surveyed is NRs. 427 per day (or approximately \$5 per day). Since they were doing their business on the footpath (government-owned area), they did not have to pay rent.

**Table 2: Business Survey of Hawkers in the Proposed Sewerage Rehabilitation and New Sewerage Pipeline Laying Area**

S.N	Location	Type of Merchandise	Site Occupancy		Permanent/ Temporary/ Mobile	Daily Profit	Means of Selling the Product
			Frequency	Full/Half Day			
1	Sairam Chowk, Pepsicola-35, Kathmandu	Vegetables	Every day	Half day	Mobile	100	Footpath
2	Satdobato, Lalitpur	Vegetables	Every day	Half day	Mobile	200	Footpath
3	Satdobato chowk	Chatpata	Every day	Full day	Mobile	400	Footpath
4	Satdobato/ Godawari chowk	Chatpata	Every day	Full day	Mobile	200	Footpath
5	Mangal Bazar, Kwalkhu, Lalitpur	Vegetables	Most days	Full day	Mobile	200	Footpath
6	Mangal Bazar, Kwalkhu, Lalitpur	Vegetables	Every day	Full day	Permanent	700	Footpath
7	Mangal Bazar, Kwalkhu, Lalitpur	Vegetables	Every day	Half day	NA	600	Footpath
8	Jamal road, Darbar Marga, Jamal -1	Clothes	Every day	Full day	Permanent	300	Footpath
9	Kantipath, Jamal-30	Other	Every day	Full day	Mobile	NA	Footpath
10	Kantipath, Jamal-30	Other	Every day	Half day	Mobile	NA	Footpath
11	Kantipath, Jamal-30, near Nachghar	Clothes	Every day	Full day	Permanent	400	Footpath
12	Kantipath, Jamal-30	Bags	Every day	Full day	Mobile	1,200	Footpath
13	Kantipath, Jamal-30	Fruits	Every day	Full day	Mobile	400	Footpath

15. **Impact on indigenous people.** The Government of Nepal has identified 59 ethnic groups as indigenous people or nationalities and classified them in five major categories: endangered, highly marginalized, marginalized, disadvantaged, and advanced. About 57% of the valley population is indigenous (census 2001), of which 41% are the prominent inhabitants and termed as advanced IPs, of which majority are traditionally involved in trade, commerce, and business and the rest considered marginalized and disadvantages. The number of endangered and highly marginalized households is very insignificant (census 2001). There has been much controversy regarding the definition of IPs. However, social scientists are of the view that only highly marginalized and endangered groups identified by the National Federation of Disadvantaged and Indigenous Nationalities (NFDIN) should be defined as IP.

**Table 3: Indigenous Population in the Metropolitan Area and Municipality of Kathmandu Valley (%)**

Metro/Submetro / Municipality	Newar	Sherpa	Gurung	Tamang	Magar	Limbu	Rai	Tharu	Others*	Total
Kathmandu Metro	31.8	3.2	3.2	5.7	3.2	Very insignificant	2.1	1.0	49.8	100
Kirtipur Municipality	55.6	0.4	0.6	3.4	1.9	Very insignificant	0.6	0.4	37.1	100

Metro/Submetro / Municipality	Newar	Sherpa	Gurung	Tamang	Magar	Limbu	Rai	Tharu	Others*	Total
Lalitpur Submetro	50.1	0.0	2.4	5.5	4.2	1.1	2.9	1.1	32.7	100
Bhaktapur Municipality	88.3	0.4	0.2	4.1	0.5	Very insignificant	0.3	0.1	6.1	100
Madhyapur Thimi Municipality	61.1	0.6	0.7	4.5	2.0	Very insignificant	1.2	0.6	29.3	100
<b>Total Average</b>	<b>41.3</b>	<b>2.2</b>	<b>2.7</b>	<b>5.4</b>	<b>3.0</b>	<b>1.5</b>	<b>2.0</b>	<b>0.9</b>	<b>41.0</b>	<b>100</b>

Source: Census 2001, CBS

\*Note: Other includes: Brahmin, Chettri, Muslims, Marwari, Sanyasi, Thakuri, Dalit

16. The project area is highly urbanized. The IP living in the project area have no traditional rights or access to land resources. They have been integrated into mainstream society and culture and have no distinct custom or practices from other non-IP groups. They will not be impacted differently from other groups, and will benefit equally from the project. No impacts on indigenous peoples are anticipated, as the project focuses on construction of the WWTP and expansion of sewerage network in urban areas and laying of interceptors where indigenous and non-indigenous people reside. Indigenous peoples are primarily rural migrants; no impacts to ancestral or customary rights are expected. Sewerage network connections will be provided to all households within the project area, and meaningful, widespread consultations will continue with all communities in the project area. The project would not adversely impact any IP. As a result, no indigenous peoples development plan, indigenous peoples development framework, or specific action is required for the project. The project is classified as category C for indigenous people.

### III. SOCIOECONOMIC INFORMATION AND PROFILE

#### A. Socioeconomic Profile of Kathmandu Valley

17. The Kathmandu Valley includes three districts, namely Kathmandu, Lalitpur, and Bhaktapur. These include 1 metropolitan city, 1 submetropolitan city, 3 municipalities, and 114 VDCs. Kathmandu Metropolitan has the highest population and number of households, followed by Lalitpur and Bhaktapur.

**Table 4: Demography of the Project Districts**

S.N	Districts	No. of Households	Population			Household Size
			Total	Male	Female	
1	Kathmandu	469,145	1,740,977	909,786	831,191	3.71
2	Lalitpur	114,443	466,784	237,114	229,670	4.08
3	Bhaktapur	73,084	303,027	154,006	149,021	4.15
	<b>Total</b>	<b>656,672</b>	<b>2,510,788</b>	<b>1,300,906</b>	<b>1,209,882</b>	<b>3.82</b>

Source: Preliminary estimate, Census 2011, CBS

**Table 5: Household Profile in Kathmandu Valley**

S.N	Metro/Municipal	No. of Households	Population			Household Size
			Total	Male	Female	
1	Kathmandu Metropolitan City	277,789	1,006,656	532,728	473,928	3.62

S.N	Metro/Municipal	No. of Households	Population			Household Size
			Total	Male	Female	
2	Lalitpur Submetropolitan city	58,127	223,285	116,082	107,203	3.84
3	Bhaktapur Municipality	19,273	83,893	42,947	40,946	4.35
4	Kirtipur Municipality	21,854	66,070	36,726	29,344	3.02
5	Madhyapur Thimi Municipality	21,758	84,259	43,643	40,616	3.87
	<b>Total</b>	<b>398,801</b>	<b>1,464,163</b>	<b>772,126</b>	<b>692,037</b>	<b>3.67</b>

Source: Compiled from Preliminary Estimate Census 2011, Central Bureau of Statistics.

18. **Social classification.** According to the 2001 Census, the majority of the people living in the valley are Hindus (76%), followed by Buddhists (21%). The percentage of other religions living in the valley is minimal. The households are divided into different ethnic groups, such as Newar, Brahmin, Chettri, Tamang, and Magar. Newar are the prominent inhabitants, followed by Brahmin, Chettri, Tamang, and Magar. These ethnic groups are not at the same level of socioeconomic development.

19. **Age.** The economically active age group between 15 and 44 constitutes about 56% of the valley population. The other main age group is between 5 and 14 years old. Only about 5% of the population is over 60. There are no significant differences in the percentage of age distribution in KUKL service areas.

20. **Health.** The number of health facilities owned by the government or provided by nongovernment organizations (NGOs) and the private sector is relatively better in Kathmandu than in other districts. More health institutions are available in Kathmandu than in Lalitpur and Bhaktapur. In 2010, the population served by the number of health institutions in Kathmandu was less (ratio is 1:14,487) than in Bhaktapur (1:5,944) or Lalitpur (1:4,484). This shows that the number of health institutions is low in comparison to the size of the population in Kathmandu (District Profile 2011).

21. **Education.** The Kathmandu Valley has long been considered the center for higher education in Nepal. In 2010, there were 6,826 high school level and 186 college and university level education institutions. The numbers of students enrolled during the period at the high school and higher education levels were 654,515 and 74,111 respectively (District Profile 2011).

22. **Employment.** The economy of the Kathmandu Valley is based on trade, commerce, and manufacturing industries like carpets and garments. Other economic sectors are agriculture, education, transport, hotels, and restaurants. Tourism is a key component of the valley's economy. However, in the rural areas, the economy is still based on agriculture. Due to the insufficient employment opportunities in the country, the trend of going abroad for employment is growing day by day. The number of people from the valley going abroad for employment has also increased significantly. About 9.1% of the households of urban Kathmandu Valley are receiving remittances, either from within the country or from abroad. The average annual income transfer to these households is NRs. 186,806 per year per household (NLSS 2010/11).

23. **Trade and commerce.** Kathmandu Valley is a center of trade links with India and China (Tibet). According to Economic Survey 2010/11, in the fiscal year 2009/10, Nepal exported 71% of its goods to India and 29% to countries like the USA, the UK, Italy, Germany, Canada, and Japan. The main export commodities are readymade garments, woollen carpet, woollen and pashmina goods, and handicrafts of which most are manufactured in Kathmandu Valley,

whereas Nepal imported 68% of its goods from India and the rest from other countries. The major import items are petroleum products, medicines, electrical goods, gold, transport equipment, and fertilizers. A significant share of imported goods from India and other countries is consumed in the valley. Kathmandu Valley is the entry point for the majority of tourists. In 2009, a total of 602,867 tourists arrived in Nepal, of which more than 80% entered through Kathmandu international airport.

24. **Industries.** Kathmandu Valley has a number of traditional cottage industries like textile (handlooms), bricks and tiles, pottery, handicrafts, wooden furniture and carvings, bamboo crafts, leather crafts, herbal medicines, and traditional art and paintings. The major carpet industries are concentrated in Kathmandu, whereas handicrafts, especially metal crafts, are in Lalitpur district. The Kathmandu Valley's annual industrial output is estimated to be NRs.14.6 billion (\$190 million), nearly 9.4% of the total national industrial output. The industrial sector employment is about 37,500 in Kathmandu Valley, which is 22.1% of the national employment figure in the industrial sector. Similarly, indirect employment in the industrial sector is about 38,900, about 21.9% of the national figure.

25. **Economically active population.** About 53% of the total population in the valley aged 16 and above are economically active (Census 2001). Majority of the population of the Kathmandu Valley are engaged in agriculture and forestry (36%). The other major industries are manufacturing (17%), commerce (16%), construction (4%), and transportation/communication (3%). Table 6 summarizes the economic activities in the urban areas of the Kathmandu Valley. About 34% of households are engaged in small-scale non-farm activities; Lalitpur has the highest percentage (50%), whereas Kirtipur has the lowest (13%). Among the households engaged in non-farm activities, nearly 45% are engaged in trade and business, followed by services (32%) and manufacturing (9%). Nearly 50% of the households in Kirtipur and Kathmandu are engaged in trade and business.

**Table 6: Households Engaged in Non-Farm Economic Activities in Kathmandu Valley**

Municipalities/ Metro /Submetro	Percentage of Households Engaged in Non- Farm Activities	Type of activities				
		Manufacturing	Trade/ Business	Transport	Services	Others
Lalitpur	50.18	13.25	33.22	4.29	42.37	6.86
Bhaktapur	40.83	13.24	38.55	4.26	26.54	17.40
Madhyapur Thimi	35.02	11.39	41.88	4.48	23.26	18.98
Kathmandu	31.57	6.86	49.49	3.49	30.26	9.90
Kirtipur	13.34	9.72	51.42	2.84	22.83	13.19
<b>Total</b>	<b>34.43</b>	<b>9.02</b>	<b>44.66</b>	<b>3.76</b>	<b>32.41</b>	<b>10.14</b>

Source: Population Census 2001 (selected urban tables), Central Bureau of Statistics 2003.

26. **Crops.** In the rural areas of the valley, rice is the main crop of the Kathmandu and Bhaktapur districts, whereas maize is the prominent cereal crop of Lalitpur. The other cereal crops in the project districts are millet, wheat, and barley. Other agricultural produce such as lentil, soya bean, peas, and black gram are the main pulses grown, as well as other pulses, potato, and oil seed.

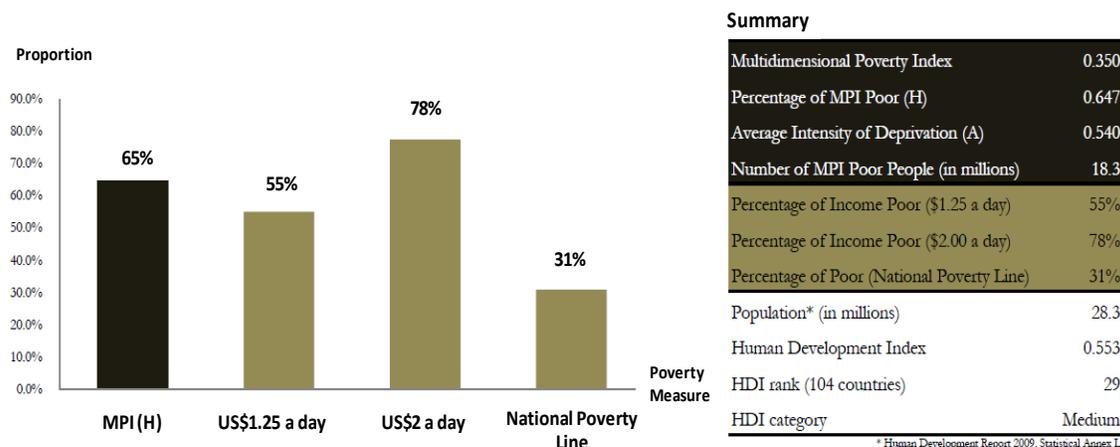
27. **Livestock.** Livestock rearing is the second most important activity after cropping. Most of the households in the rural areas have some connection with animal husbandry for income, food, or draft power. Goats represent the highest number of livestock in Kathmandu Valley, followed by cattle and buffalo, which have a ready market in the local city area.

28. **Poverty.** The National Living Standard Survey 2010–2011 indicates that about 25.16% of the population of Nepal lives below the poverty line. According to the NLSS Survey 2011, an individual is considered poor if his/her per capita total annual consumption is below NRs. 19,261. It has also categorized the food items, non-food items, and expenses required to be above the poverty line. Accordingly, the income required for providing adequate calories (2,220 kilocalorie) each day for an average Nepali to be active is NRs. 11,929.<sup>4</sup> For non-food items, the average income required is NRs. 7,332. The Nepal Living Standard Survey conducted by CBS in 1995–1996, 2003–2004, and 2010–2011 revealed that between the three surveys, there had been substantial decrease in the poverty in Nepal. The survey shows that poverty had decreased faster in the urban areas from 1995–1996 to 2003–2004. Urban poverty has increased from 9.6% to 15.5% from 2003–2004 to 2010–2011, whereas there was substantial decrease of poverty in rural areas.<sup>5</sup> Table 7 shows the changes in the poverty status between the three surveys.<sup>6</sup>

**Table 7: Change in Poverty Between 1995–1996, 2003–2004, and 2010–2011**

Poverty	Population Below the Poverty Line (1995–1996)	Population Below the Poverty Line (2003–2004)	Population Below the Poverty Line (2010–2011)
Nepal (overall)	41.8%	30.9%	25.2%
Rural	43.3%	34.6%	27.4 %
Urban	21.6%	9.6%	15.5%

Source: NLSS-III (2003–2004 ) and (2010-2011)



Source: Oxford Poverty and Human Development Initiative (OPHI). Country Profile Nepal-DHS-2006, July 2010  
<http://ophi.queh.ox.ac.uk> [www.ophi.org.uk](http://www.ophi.org.uk)

29. The Government of Nepal made poverty alleviation one of the major objectives of different plans, especially since Eight Plan (1992–1997), which aimed to reduce poverty and the increasing gap between rich and poor through a number of micro-level programs. However, the

<sup>4</sup> For the food item only, this has been calculated as NRs.11, 929 per person per year (National Planning Commission of Nepal, Nepal Living Standard Survey 2010–/2011).

<sup>5</sup> Key reasons for the reduction in poverty include (a) the significant inflow of remittances, (b) decline in fertility rates, (c) increases in farm wages over the past decade and, importantly, (d) urbanization and the associated increase in high productivity economic activity compared with the lower productive activities of rural areas.

<sup>6</sup> GoN estimates of the extent of poverty in the country is not mirrored by work undertaken by Oxford University Research/UNDP (2010) employing the Multidimensional Poverty Index (MPI), which estimated that 65% of the total population of Nepal lives below the absolute poverty line.

extent of poverty continues to be much more in rural than in urban areas, where the income level is estimated to be 4.6 times higher. As a result, increasing numbers of rural poor migrate to urban areas in the hope of getting employment and a better livelihood. The poverty level in the urban Kathmandu Valley is almost half of the national poverty level (NLSS, 2010–2011). It indicates that about 11.5% of the population of Urban Kathmandu lives below the poverty level with less than NRs 40,933 per capita consumption. Table 8 describes the food poverty and non-food poverty lines of urban Kathmandu.

**Table 8: Poverty Line for Food and Non-Food Items**

S.N	Analytical Domain	Poverty Lines		
		Food	Non-Food	Overall
1	Nepal	11,929	7,332	19,261
2	Urban Kathmandu	<b>14,610</b>	<b>26,323</b>	<b>40,933</b>
3	Urban Hill	11,805	7,772	19,577
4	Urban Tarai	11,743	9,390	21,133

Source: Poverty in Nepal, CBS, Aswin 2065 (2011)

30. According to the 2001 census and the Nepal Human Development Report 2004, the Kathmandu Valley had overall higher development indicators than the national level (i.e. in HDI, HPI, and GDI). Table 9 indicates the human development index in the Kathmandu Valley compared with the national values.

**Table 9: Kathmandu Valley Development Indicators**

Districts	Human Development Index (HDI)	Human Poverty Index (HPI)	Gender-Related Development Index (GDI)
All Nepal	0.471	39.6	0.452
Kathmandu	0.652	25.8	0.635
Lalitpur	0.588	25.0	0.569
Bhaktapur	0.595	29.9	0.578

GDI = Gender-Related Development Index, HDI = Human Development Index, HPI = Human Poverty Index.

Source: Census 2001, Nepal Human Development Report by UNDP 2004.

31. **Informal settlements.** The rapid population growth and increase in poverty has created a number of informal settlements like slums and squatter settlements in Kathmandu Valley. Ten years of insurgency in the country have further increased the number of migrants and displaced citizens in the valley. The people living in these areas are generally low-income groups, and live in very low-quality houses. They are mostly daily wage earners, vendors, vegetable and fruit sellers, and partly skilled laborers, and some are involved in small trade and business activities. In these areas, activities like selling and buying of land and renting of houses and land are being carried out without land tenureship, though these activities are not recognized by the government. These activities have been legitimized socially in recent areas. However, in all three components of the project, the activities will not require the removal of squatters' areas and will not pass through the slum areas. The project corridor will avoid or minimize its impact on these areas.

32. The valley rivers (such as Bagmati, Bishnumati, Dhobikhola, and Manohara) are polluted due to the direct discharge of wastewater by the people living in the city areas, and by the discharge of industrial and manufacturing wastage into the rivers. These rivers have further deteriorated greatly because of encroachers and squatters residing on the riverbanks. These rivers are polluted because of direct discharge of wastewater from households.

33. Until now, the exact number of squatters' households and their population in the valley are not known. Different organizations have different estimates of squatters' households and

their populations. According to the report of HPCIDBC (July 2008), there are 2,844 squatters' households, with 13,243 people living in 45 settlements in the Kathmandu Valley. Out of these, 833 households are living in the settlement along the banks of Bagmati River only. In figures published in August 2010, one of the local newspapers (quoted in UN-HABITAT) estimated that there are 16,953 squatters living in the valley, mainly along the riverbanks of Bagmati, Bishnumati, and Manohara Rivers. The government has estimated that about 14,000 people live as squatters in the valley (*The Daily Kathmandu Post*, January 2012). A survey of slums and squatters in the Kathmandu Valley was conducted by KUKL in 2008. The survey revealed that 8,800 people lived in 1,861 squatters' household in Kathmandu Metropolitan alone. This does not count squatters in other municipalities. Table 10 summarizes the number of slums and squatters' households in the metro, submetro, and municipalities of the valley. According to the survey, there were 39 squatter settlements and 137 slums in the Kathmandu Valley with a population of 40,237, living in 8,846 households (Table 10). UN-Habitat (2009) reports that overall, 30% of houses have a septic system. It also estimated that there are 77,000 septic systems in the valley. Only 35% have a soak pit associated with a septic tank. The remaining tanks presumably discharge septic tank effluent directly into surface flows.

**Table 10: Slums and Squatter Settlements in Kathmandu Valley**

Type of Residence	No. of Households	Total Population	Average Household Size
Bhaktapur Municipality	754	3,274	4.34
Madhyapur Thimi Municipality	382	1,981	5.19
Lalitpur Submetropolitan	391	1,866	4.77
Kathmandu Metropolitan	3,784	16,575	4.38
Kirtipur Municipality	1,674	7,767	4.64
Kathmandu Metropolitan	1,861	8,774	4.71
<b>Total</b>	<b>8,846</b>	<b>40,237</b>	<b>4.5</b>

Source: Mapping of Slums, Squatters, and Stand Posts in Kathmandu Valley updated by LICSU, KUKL, June 2008, AVIYAAN Consulting (P) Ltd.

## **B. Socioeconomic Profile of the Informal Land Users at Gokarna WWTP**

34. The average family size of the informal land user's household in Gokarna WWTP is 6.27. The population of males is more than that of the female members. Newar is the major ethnic group, followed by Magar, Tamang, Lama and the Chettry. Out of 69 members of the total households, 16 are illiterate, of which 12 are female. Only 3 persons have been found studying at campus level or have graduated from university. The major occupation of the householders is wage earner/laborer. About 15 members of the households are engaged in daily wage labor, similar numbers of females are engaged in house work, 4 persons are engaged in business, and 5 have gone abroad for foreign employment. Nearly 50% of the household members are students. None of the affected households will lose more than 10% of their total income from the land they have occupied for farming at Gokarna. However, according to the Nepal Living Standard Survey 2010–2011, 9 of them are living below the poverty line (an individual is considered poor if his/her per capita total annual consumption is below NRs. 40,933 in Kathmandu Valley).

## C. Gender Considerations

35. The project will provide universal connections even for poor and vulnerable households, including female-headed households. Employment will also be granted to females, with equal pay for men and women. In addition to the measures provided for addressing the gender concerns of the affected households, the resettlement plan will be implemented in consonance with the gender equity and social inclusion (GESI) plan for the project.

36. **Women-headed households.** According to the NLSS survey, 2010–2011, about 21% of the households have been reported as female-headed. In the urban areas, this figure was slightly more than the national average, 23% in 2011.

37. **Literacy.** There is still some difference in literacy between males and females. It was found that about 88% of females were literate, in comparison to 97% of the males.

38. **Economic activity.** About 17% of the women in the project area are housewives. Only 11% of women among the total household members are involved in income-earning activities, compared to 22% of the male members. They are involved particularly in the service sector, trade and business, and labor inside and outside the country. It has been reported that in addition to economic activities outside the home, women are extensively involved in household activities like cooking and cleaning, washing clothes, child care, care of the elderly, etc.

39. **Decision-making.** The women are involved in decision making on household matters like finance, education, health care, purchase of assets, day-to-day household matters, and others.

40. **Ownership.** In most of the developing countries, the family land and household assets are owned by the males. In some cases, both the males and females own land and assets through inheritance. However, in recent years, land ownership has increased in Nepal due to the government policy of 20% rebate or concession on land registration fees while purchasing or transferring land ownership in the name of women.

41. **Participation.** The participation of women in social, political, religious, and community gatherings in Nepal has increased in recent years. It has been reported in the consultations and FGDs that the percentage of females in social and religious gatherings is higher than that of the males, whereas participation of males in community gatherings is much higher than that of females.

## IV. INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

### A. Public Consultation

42. As part of the feasibility studies, an extensive consultation program with key stakeholders was carried out, in line with the requirements pertaining to environment and social considerations of ADB. The tools used for consultations were stakeholder workshops and meetings, interviews, structured questionnaires, and focus group discussions (FGD). These consultations provided inputs for identification of the felt needs of the communities, and the relevant stakeholders.

43. During the business survey, businesses/shops in the different core areas of cities were informed about project activities such as replacement, rehabilitation, cleaning of sewers,

separation of storm water drains and sewers, laying of new sewers, etc. on the main and inner roads of the cities. They were informed about the possible impacts, such as disturbance to the local inhabitants and pedestrians during construction. Business owners and shopkeepers were informed about the possibility of disruption of business, and the survey was a preliminary activity to determine possible profit losses if full closure of the road was required during construction. They were informed that future public consultations and disclosures would be held regarding possible disruption to businesses, and issues of compensation would be discussed. They were also informed that they would receive more information about the project activities during the topographical survey.

44. In Kodku, some community members participated in the FGD/consultation meeting. They were not in favor of the construction of the WWTP at Kodku. Some claimed that they had not received compensation for the land used for Kodku WWTP. The consultant's team followed up with these people, requesting them to sign their names on the minutes of the meeting as proof of their presence in the FGD, but all of them refused. They were also asked to submit their grievances (e.g., not receiving compensation for land) and other issues several times. However, none of them had any documents that could validate their claims. In Dhobighat, proper consultation was not carried out due to social unrest resulting from the conflict between local communities and the government after the resettlement of squatters residing on the banks of Bagmati River in June–July 2012, in a bid to relocate landless squatters into the area. The local community of Dhobighat and the people of Lalitpur municipality made several protests, *chakka jam*, and *bandha* (road closure/ hold off in Nepalese) over a long period of time against the decision of the government to relocate the squatters in Dhobighat. It is recommended that proper consultations, community participation activities, and access to the project information through various means and media be made available, especially in the Kodku and Dhobighat WWTP sites. These should be initiated by KUKL/PID (IA), KVWSMB (assets owner), and MoUD (EA) before and during detailed design and implementation.

## **B. Information Disclosure**

45. Several meetings, consultations, workshops and FGDs were arranged with the stakeholders in different wastewater treatment plant sites and areas for rehabilitation, replacement, and new connections of sewer in different parts of Kathmandu Valley as part of preparation for the project.

46. To provide for more transparency in planning and for further active involvement of displaced persons and other stakeholders, project information will be disseminated through disclosure of resettlement planning documents. The information will be made available at a convenient place, including the offices of PID, KUKL main offices, and municipalities. The summary of the resettlement plan and the entitlements matrix will be translated into the local language. A copy of the resettlement plan will be disclosed on the ADB and project-related websites. The number of people attending the consultations, attendance, photographs, and summaries of consultations are provided in Appendixes 3, 4, and 5.

## **C. Continued Consultation and Participation**

47. The PID will extend and expand the consultation and disclosure process during the detailed design stage and construction period of the project. A community awareness firm will be recruited to ensure ongoing consultations and public awareness during project implementation. The firm will continue the consultations with the affected communities through distribution of leaflets about the project activities and the entitlement matrix, and the project

contact persons for outreach and queries. Intensive consultations will be made in those WWTP areas where people have different opinions on the construction of the WWTP.

48. The community awareness consultant will coordinate with the PID, design and supervision consultant (DSC), and contractors to ensure that communities are made fully aware of project activities at all stages of construction. A community awareness and participation plan was also prepared for the project, and will be implemented by the recruited firm in coordination with the PID and DSC safeguards staff. Community groups such as *to/e* committees and vendor associations will be consulted and made aware of the civil works and project activities prior to construction. A draft of the project information pamphlet has been prepared (Appendix 11) and will be translated into the local language and distributed to the project-affected communities, as well as posted in the public areas.

## V. GRIEVANCE REDRESS MECHANISM

49. A grievance redress mechanism (GRM) will be established by PID, with assistance from DSC, the community awareness consultant, and the contractor, to receive, evaluate, and facilitate the resolution of affected people's concerns, complaints, and grievances about the social and environmental performance of the project. The GRM aims to provide a trusted way to voice and resolve concerns linked to the project, and to be an effective way to address affected people's concerns. The GRM for the project is outlined below, and consists of three levels with timebound schedules and specific persons to address grievances.

50. **First level of GRM.** The first level and most accessible and immediate contact for the fastest resolution of grievances are the contractors and supervision consultants onsite. Prior to construction of any works, the community awareness and participation consultants, DSC, and contractors are to hold local community meetings to notify the local residents and businesses of the temporary disturbance, and to inform them of the project. If a local area committee (*to/e* committee) exists in the area, they should also be informed and made aware of the project. If any complaints arise, the contractors, DSC, and PID can immediately resolve the complaint onsite, and if necessary, with the assistance of the local *to/e* committee. The PID branch offices can also be involved in grievance redress at this stage. The KUKL hotline and PID office phone number will be posted in public areas within the project and construction sites. Any person with a grievance related to the project works can contact the project to file a complaint. The PID branch offices are staffed with a consumer relations officer to field and resolve complaints. The consumer relations officer or branch manager will document the complaint, and immediately address and resolve the issue with the contractor within 1-2 days, if the complaint remains unresolved at the field level. The branch manager may seek the assistance of the DSC safeguards specialists (the environmental specialist or social safeguards specialist) to help resolve the issue. The consumer relations officer or branch manager will notify the PID safeguards unit that a complaint was received, and whether it was resolved. The branch manager will fully document the following information: (i) name of the person, (ii) date of complaint received, (iii) nature of complaint, (iv) location, and (v) how the complaint was resolved.

51. **Second level of GRM.** Should the grievance remain unresolved, the branch manager will forward the complaint to the PID safeguards unit. The person filing the grievance will be notified by the consumer relations officer or branch manager that the grievance was forwarded to the PID safeguards unit. For resettlement issues, the resettlement officer will address the grievance; for environmental issues, it will be the environmental officer. Grievances will be resolved through continuous interactions with displaced persons, and the PID will answer

queries and resolve grievances regarding various issues, including environmental, social, or livelihood impacts. Corrective measures will be undertaken at the field level by the PID safeguards staff within 7 days. The relevant safeguards unit staff will fully document the following information: (i) name of the person, (ii) date of complaint received, (iii) nature of complaint, (iv) location, and (v) how the complaint was resolved.

52. **Third level of GRM.** Should the grievance remain unresolved, the PID project director will activate the third level of the GRM by referring the issue (with written documentation) to the local grievance redress committee (GRC) of the KUKL, who will, based on review of the grievances, address them in consultation with the PID safeguards unit, Project Director, and displaced persons. The GRC should consist of around five persons, including representatives from CBO/NGO, from among DPs and the *tole* committee, from the concerned municipality, from PID, KUKL, and from KVWSMB. A hearing will be called with the GRC, if necessary, where the displaced person can present his or her concerns and issues. The process will promote conflict resolution through mediation. The local GRC will meet as necessary when there are grievances to be addressed. The local GRC will suggest corrective measures at the field level and assign clear responsibilities for implementing its decision within 15 days. The functions of the local GRC are as follows: (i) to provide support to displaced persons on problems arising from environmental or social disruption, asset acquisition (if necessary), and eligibility for entitlements, compensation, and assistance; (ii) to record grievances of displaced persons, categorize and prioritize them, and provide solutions within 15 days; and (iii) to report to the aggrieved parties developments regarding their grievances and the decisions of the GRC. The PID safeguards officers will be responsible for processing and placing all papers before the GRC, recording decisions, issuing minutes of the meetings, and taking follow-up action to see that formal orders are issued and the decisions carried out.

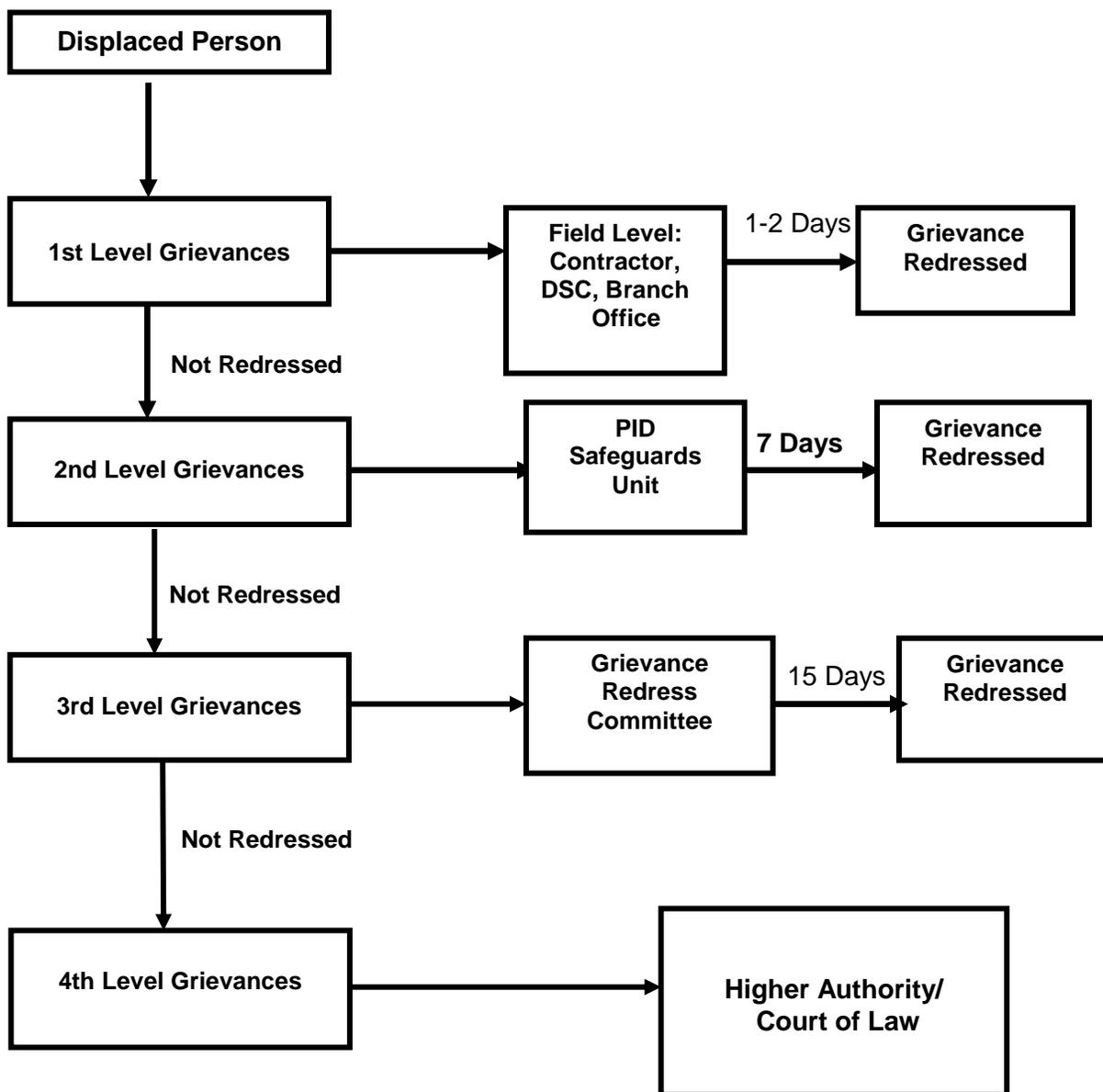
53. **Fourth level of GRM.** In the event that a grievance is not addressed by the contractor, DSC, branch office, PID, or GRC, the displaced person can seek legal redress of the grievance in the appropriate courts, the fourth level of the GRM, which is the formal legal court system. The grievance redress mechanism and procedure is depicted in Figure 2.

54. **GRC Composition.** Below is the composition of GRC members under the project:

- (i) GRC Chairman – PID Director
- (ii) Concerned municipality representative
- (iii) *Tole* community representative as AP's representative
- (iv) Appointed NGO representatives as independent party
- (v) KUKL/ KVWSMB/DSC (as relevant)

55. **ADB Accountability Mechanism.** In the event the established GRM is not in a position to resolve the issue, the affected person can also use the ADB Accountability Mechanism (AM) by directly contacting (in writing) the Complaint Receiving Officer (CRO) at ADB Headquarters or the ADB Nepal Resident Mission (NRM). The complaint can be submitted in any of the official languages of ADB's DMCs. The ADB Accountability Mechanism information will be included in the PID to be distributed to the affected communities, as part of the project GRM.

**Figure 2: Grievance Redress Mechanism (GRM)**



DSC= design and supervision consultant, PID= Project Implementation Directorate.

## VI. POLICY AND LEGAL FRAMEWORK

56. **ADB Safeguards Policy Statement (2009).** The major objectives of ADB's Safeguards Policy Statement are to (i) avoid adverse impacts of projects on the environment and affected people where possible; (ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible; and (iii) help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage environmental and social risks. In addition, the absence of legal title to land should not be a bar to compensation. ADB SPS requires compensation prior to actual income loss. In cases where the standing crops cannot be harvested before the construction, PID will estimate the compensation of loss with the assistance of DSC. The compensation of lost crops should be paid before the mobilization of the contractor. In case of the sewer network construction, where the contractors know which streets will be closed and for how long, compensation can be paid out to the businesses prior to construction. However, given the nature of the temporary impacts and the difficulty in predicting the exact duration of road closure during construction, compensation may be provided to the affected businesses immediately after works are completed for the affected period. The DSC social safeguards specialist will confirm payment made by PID for each business which qualifies under the criteria.

57. **Government of Nepal laws.** It is anticipated that crops and vegetation will be damaged during the construction and laying of interceptors on the bank of rivers. However, the tentative loss of crops can be determined only after the detailed design. If the interceptor goes through the land where crops are cultivated, Land Acquisition Act 2034 (1977) Clause 6 Section 3 and Clause 7 Section 1 will take effect. There is a provision for compensation for the loss or damage of crops, trees, or vegetation during project work.

## VII. ENTITLEMENTS, ASSISTANCE, AND BENEFITS

### A. Eligibility

58. Compensation eligibility for the loss of crops/vegetation due to construction of interceptors is limited by a cut-off date, as set for for this project on the day of beginning of the field survey prior to commencement of civil work. The survey will identify the crop owners on the basis of their land ownership evidence or entitlement, and if they do not possess evidence of entitlement, verification will be made with the neighbors on the authenticity of entitlement. The name of the land or crop owners will be documented. These owners will be eligible for compensation for lost crops, and compensation will be made for the lost income. Similarly, in case of sewerage network, compensation eligibility for the loss of income due to a road likely to be fully closed (no access of to traffic) is limited by a cut-off date, as set for this project on the day of the beginning of the income survey prior to commencement of civil works. Once a contractor confirms a road is likely to be fully closed (no access to traffic), the DSC social safeguards specialist will conduct an income survey of businesses along the relevant sections. The DSC social safeguards specialist may recruit enumerators to assist in this activity. An income survey will serve as the cut-off date. All businesses/owners identified in the project-impacted areas (sections ready for construction) on the cut-off date will be documented and entitled to compensation for their lost income based on the tax record or, in its absence, comparable rates from registered businesses of the same type with tax records. For shops not qualifying under these categories (hawkers, vendors, etc.), there is the option of using the actual income based on survey followed by a verification of the income data based on comparable incomes in the project area.

59. Hawkers or businesses who settle in the affected areas after the cut-off date will not be eligible for compensation. They will, however, be given sufficient advance notice (at least 1 week), and requested to vacate premises and dismantle affected structures prior to project implementation. Contractors will provide shifting assistance to any vendors needing help. The project will recognize both licensed and non-licensed vendors, and titled and nontitled households.

## B. Entitlements

60. The entitlement matrix (Table 11) summarizes the main types of losses and the corresponding entitlements in accordance with ADB policies. In addition to temporary impacts, the entitlement matrix also covers loss of crops and damages to structures during construction.

## C. Determination of Compensation

61. **Income.** Businesses will be compensated for lost income on fully closed streets where customer access to shops is disrupted.<sup>7</sup> Once a contractor confirms a road is likely to be fully closed (with disruption to customer access), the DSC social safeguards specialist will conduct an income survey of businesses along the relevant sections. An income survey will serve as the cut-off date. All businesses identified in the project-impacted areas (sections ready for construction) on the cut-off date will be entitled to compensation for their lost income based on the tax record or, in its absence, comparable rates from registered businesses of the same type with tax records. For shops not qualifying under these categories (hawkers, vendors, etc.), there is the option of using the actual income based on survey followed by a verification of the income data based on comparable incomes in the project area.

62. **Crops.** In case of the loss of income from loss of agricultural crops during construction of the WWTP at Gokarna and laying of interceptors, a field survey will be conducted in the area where agricultural crops are affected. The survey will identify the area of crop plantation, and estimate the crop production and net value of the loss of crops to estimate the loss of income from agricultural production of the households. A summary table of resettlement procedures is presented in Appendix 6.

63. **Compensation procedures.** Paying compensation to the temporarily displaced persons will involve the following steps:

- (i) **Step 1.** Conduct public awareness and information dissemination prior to construction works. This is to be done by the community awareness and participation consultants.
- (ii) **Step 2.** In collaboration with the contractor, the design and supervision consultant (DSC) will identify the interceptor-laying areas, roads which will be fully closed, and estimated period of closure. Two types of disturbance are anticipated from full closure of roads: (a) partial disturbance, where there is no vehicular access, but pedestrian access is maintained; or (b) full disturbance, where there is no vehicular and no pedestrian access.
- (iii) **Step 3.** The DSC social safeguards specialist will then (a) conduct a field survey in the areas for laying of interceptors to find out the total loss of agricultural crops

<sup>7</sup> Compensation is only applicable to fully-closed roads where customer access is disrupted leading to income loss. To the extent possible, contractors will identify these types of roads prior to construction. However, if during construction a road not previously identified for full closure is unexpectedly required to be fully closed, inhibiting customer access, the contractor is to immediately notify the DSC social safeguards specialist and PID so that a rapid income survey can be conducted and compensation paid for period of disruption.

and conduct an income survey<sup>8</sup> of shops along sections of road identified for full closure; (b) update the resettlement plan (identifying income and potential loss based on actual income losses); and (c) send the updated resettlement plan to ADB for review and approval after detailed designs are complete.

- (iv) **Step 4.** After ADB approval of the revised resettlement plan, the DSC social safeguards specialist will distribute identity cards with compensation amount to the displaced persons (Appendix 6).
- (v) **Step 5.** Displaced persons can then collect payment at PID office or onsite, based on PID discretion.
- (vi) **Step 6.** PID will issue checks to displaced persons based on survey record and identity card prior to construction works (if feasible). All payments will be recorded for accounting purposes, with the signature of the displaced person to verify payment made. The project director will closely monitor payments with PID accounting office.

#### D. Vendor Shifting Assistance

64. Vendors requiring temporary shifting during the construction period will be notified in advance and allowed to salvage all materials for temporary shifting to alternative location. They will be allowed to return to the original location after construction is declared complete. Vendor assistance will involve the following steps:

- (i) **Step 1** - identification of impacted vendors based on detailed design by DSC social safeguards specialist and PID safeguards unit, in coordination with contractor
- (ii) **Step 2** - notification of vendors at least 2-3 weeks in advance; consultation with local vendor associations if any
- (iii) **Step 3** - identification of alternative location nearby for affected vendors to continue their business
- (iv) **Step 4** - assistance by contractor to shift to new location and return to original location after construction works are completed, or or provision of maximum of 2 days' cash as shifting allowance

#### E. Project Benefits

65. The project will support the delivery of much-needed wastewater management services to Kathmandu citizens. The project will support KUKL in expanding its services through the construction of new, environment-friendly, and modern WWTPs, laying of interceptors, cleaning existing sewers, rehabilitation of existing combined sewers, separation by laying new sanitary sewers, separation by laying new storm water drains, and expanding sewer connection services in its service area, where affected businesses and citizens are among the beneficiaries. Moreover, the project will employ local people during implementation.

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<sup>8</sup> Compensation is based on lost income based on the tax record or, in its absence, comparable rates from registered businesses of the same type with tax records. For shops not qualifying under these categories (hawkers, vendors, etc.), there is the option of using the actual income based on survey, followed by a verification of the income data based on comparable incomes in the project area.

**Table 11: Entitlement Matrix**

Type of Loss	Entitled Person	Description of Entitlement and Implementation Procedures	Remarks	Responsible Institution
<b>1. Crops and trees</b>				
1.1 Loss of crops and trees	<ul style="list-style-type: none"> <li>• Titleholder</li> <li>• Tenant</li> <li>• Crops owned by encroachers/squatters/non-titleholders</li> </ul>	<ul style="list-style-type: none"> <li>• Advance notice of 3 months to harvest their crops.</li> <li>• Compensation at net value of the next harvest where harvesting is not possible</li> <li>• Compensation for loss of future harvest at net value of 3 times the harvest for seasonal crops</li> <li>• Compensation for loss of fruit trees for average fruit production for next 15 years to be computed at current market value</li> <li>• Compensation for loss of wood-trees at current market value of wood (timber or firewood, as the case may be)</li> </ul>	<ul style="list-style-type: none"> <li>• Compensation for loss of agricultural crops at current market value of mature crops, based on average production</li> </ul>	PID, assisted by contractor and DSC
<b>2. Loss of houses and other structures</b>				
2.1 Permanent loss of house and other structures	<ul style="list-style-type: none"> <li>• Titleholder</li> <li>• Tenant</li> <li>• Landless squatters/encroachers/non-titleholders</li> </ul>	<ul style="list-style-type: none"> <li>• Compensation for full or partial loss of house at replacement cost</li> <li>• Owners of affected structures will be allowed to take/reuse salvageable materials for rebuilding/rehabilitation of structures without deducting any cost</li> <li>• In case of relocation, transfer allowance to cover shifting (transport plus loading/unloading) household goods and materials will be paid, based on actual cost or current market price.</li> <li>• Every displaced household will receive 3 months' rental equivalent cash assistance.</li> <li>• Rights to salvage materials from structures</li> <li>• Additional assistance for vulnerable households as described in section 4.3</li> </ul>	<ul style="list-style-type: none"> <li>• Replacement cost of affected structures at market value will be determined by CDC.</li> </ul>	PID, assisted by contractor and DSC
<b>3. Community facilities and resources</b>				
3.1 Government and community structures, infrastructures	<ul style="list-style-type: none"> <li>• Local community</li> <li>• Local government</li> <li>• Informal settlers/squatters on government land</li> </ul>	<ul style="list-style-type: none"> <li>• Restoration of affected community buildings and structures to at least their original condition, or replacement in areas identified in consultation with affected communities and relevant authorities</li> <li>• Where damages do occur to government</li> </ul>	<ul style="list-style-type: none"> <li>• Extreme care should be taken by the contractors to avoid damaging any properties during constructions.</li> <li>• Compensation for the losses will be borne by the</li> </ul>	PID, assisted by contractor and DSC

Type of Loss	Entitled Person	Description of Entitlement and Implementation Procedures	Remarks	Responsible Institution
		property as a result of construction works, the cost of restoring to at least their original condition will be the responsibility of the project.	project. • Community structures include roads, inner roads, temples, foot paths/trails, culverts, and water points.	
3.2 Loss of access to water supply, public wells, sewerage network/sanitation and sanitation facilities (public/private toilets, solid waste collection points, etc.)	Private persons and community that own the water points and sanitation	<ul style="list-style-type: none"> <li>• Advance announcement to the households prior to construction/flow disturbance and appointing alternative source</li> <li>• Immediate replacement and restoration of the affected facilities</li> </ul>	<ul style="list-style-type: none"> <li>• The time gap between the construction of new system and transfer from the old system should be minimized.</li> <li>• Alternative sources of water and sanitation facilities should be made available during the construction period (such as supply through water tanker, mobile toilets, increased frequency of solid waste collection)</li> </ul>	Contractor
<b>4. Loss of income and livelihood</b>				
4.1 Temporary loss of income from business	<ul style="list-style-type: none"> <li>• Titleholder</li> <li>• Licensed and non-licensed vendors, and titled and non-titled households/tenant</li> </ul>	<ul style="list-style-type: none"> <li>• Businesses are entitled to compensation for each day of disturbance on fully-closed roads. An income survey will serve as the cut-off date. All businesses identified in the project-impacted areas (sections ready for construction) on the cut-off date will be entitled to compensation for their lost income based on the tax records, or for shops not qualifying under these categories (hawkers, vendors etc.), there is the option of using the actual income based on survey ,followed by a verification of the income data based on comparable incomes in the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• An income survey prior to construction will serve as the cut-off date.</li> <li>• Ensure that the project will avail of the temporary relocation areas for the mobile vendors during civil works.</li> </ul>	PID, assisted by contractor and DSC
4.2 Temporary loss of access to the commercial location	<ul style="list-style-type: none"> <li>• Titled and nontitled holders of business operations; licensed or non-licensed vendors,</li> </ul>	<ul style="list-style-type: none"> <li>• Mobile hawkers and vendors will be assisted by contractors in moving to alternative locations during the period of construction, or will be given cash provision of maximum 2</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	PID, assisted by contractor and DSC

Type of Loss	Entitled Person	Description of Entitlement and Implementation Procedures	Remarks	Responsible Institution
	and titled and nontitled households/tenants	days shifting allowance		
4.3 Vulnerable persons	<ul style="list-style-type: none"> <li>Female-headed, elderly, disabled, and below poverty line HHs (the annual poverty line data is NRs. 40,933 per capita/year)</li> <li>Displaced household that lose more than 10% of total income</li> </ul>	<ul style="list-style-type: none"> <li>Cash assistance for 90 days at the Kathmandu wage rate of NRs. 250 per day</li> <li>One-time economic rehabilitation grants of NRs. 10,000 for restoring their livelihoods</li> <li>Vulnerable persons entitled to preferential employment under the project</li> </ul>	Vulnerable persons to be identified during income survey	PID, assisted by contractor and DSC
4.4 Livelihood rehabilitation assistance	<ul style="list-style-type: none"> <li>Permanently economically displaced persons/families who lose more than 10% of total income regardless of their status on the affected land</li> <li>Below poverty line HHs (the annual poverty line data is NRs 40,933 per capita/year)</li> <li>Displaced households</li> </ul>	<ul style="list-style-type: none"> <li>Cash assistance for 90 days livelihood support at NRs 250 per day</li> <li>Special assistance of NRs. 10,000 to the displaced vulnerable persons for restoring their livelihoods</li> <li>Employment during the construction activities if they desire</li> </ul>	<p>Economically displaced families in Gokarna WTP</p> <p>Permanently displaced vendors/hawkers to be determined after detailed design is finished</p> <p>Informal land users in the interceptor corridors</p>	PID, assisted by contractor and DSC

DSC = design and supervision consultants, PID = Project Implementation Directorate.

## VIII. INCOME RESTORATION AND REHABILITATION

66. Incomes of displaced persons will be compensated based on replacement value of losses, as detailed in the entitlement matrix. If the DPs are vulnerable, an additional cash assistance of 90 days at the local labor rate and a special assistance of NRs. 10,000 will be provided to the vulnerable DPs for restoring their livelihoods. Vulnerable people will be identified through an income survey conducted by the DSC. Preferential employment on the project construction will be offered to the vulnerable displaced people, displaced people, and then only to local people.

## IX. RESETTLEMENT BUDGET AND FINANCING PLAN

67. This chapter provides cost estimates for the resettlement plan (RP) activities under the current loan. As the project will not require relocation of houses and business or community facilities, no private land acquisition will occur. Impacts and losses as a result of this project are expected for local businesses, hawkers, and crop holders. Local inhabitants and pedestrians will suffer temporary impacts due to the project. Further, some agricultural crop losses are expected as a result of construction and laying of interceptors on the banks of rivers. People will be given notice to harvest before the construction. They will be compensated if pre-harvesting is not possible. The following compensation costs are very tentative and calculated for budget purposes.

### A. Business Disruption Allowances

68. **Businesses and shops.** It has been assumed that there will be no full closure of shops during construction, although full closure to vehicles is expected in some places. Partial disruption in the business is expected in some places. There is less chance of the need to close shops. However, the RP has made provisions for compensation for losses during the construction period.

69. It is not possible to indicate the exact number and types of businesses that will actually be severely affected during the laying of the transmission line. A detailed survey and collection of data on 100% of the affected businesses and hawkers will be conducted during construction by PID, with assistance from DSC's resettlement/social expert.

70. For budget purposes, it has been roughly estimated that about 30% of the total shops in the sewerage network area will suffer partial disruption of business during construction. It means that about 9,000 shops will be affected in the whole project area. The average profit per day of one business for 3 days is NRs. 1,194. Multiplied by the number of days (3) and total number of shops (9,000), this adds up to a total income loss of NRs. 32,238,000 (\$379,270).

71. **Hawkers.** With regards to hawkers, their business is very small and easily movable from one place to another, so the owners may not suffer a lot for temporarily moving from their original place. On the other hand, there are several alternative areas along the existing road where they can be relocated. For budget purposes, it has been estimated that about 600 hawkers will be affected in the whole project area. The average profit per day of 1 hawker for 3 days is NRs. 427. Multiplied by the number of days (3) and total number of hawkers (9600), this adds up to a total income loss of NRs. 768,600 (\$9,042).

72. Total project cost estimate for compensation for the disruption of private businesses amounts to NRs. 33,006,600 (\$388,312).

## B. Crop Damage Compensation

73. The actual loss of crops/vegetation during the construction of interceptors and WWTP at Gokarna is not known at the moment. However, it has been assumed that about 2 ha and 0.8 ha of agricultural farm will be disrupted during the construction of interceptors and of the WWTP at Gokarna, respectively.. So for budget purposes, it has been estimated that 1 ha of land will produce 5,500 kg of rice for one season's crop for 2 years (5,500 x NRs. 36/kg x 2), for a total of NRs. 400,000 worth of crop production. Multiplied by the area of agricultural farm (2.8 ha), this adds up to NRs. 1,120,000 (\$13,200) worth of rice production. For vegetable production, it is estimated that 1 ha of land will produce NRs. 100,000 equivalent in vegetables, for a total of NRs. 840,000 (\$9,890) worth of vegetable production.

74. **Rehabilitation assistance.** The total rehabilitation assistance and compensation for 11 economically displaced families of Gokarna WWTP is estimated to be NRs. 357,500 (\$4,200).

75. **Contingencies.** A contingency amount of 10% of the total compensation cost has been added, which will be used for vulnerable DPs and other unseen losses.

76. **Total cost estimate.** The total resettlement budget for the current loan is in Table 12.

**Table 12: Summary of Estimated Resettlement Costs**

S.N.	Item	NRs	US\$
1	Business disruption allowances	33,006,600	388,312
2	Crop losses	1,960,000	23,090
3	Rehabilitation assistance for 11 families of Gokarna WWTP	357,500	4,200
3	Contingencies (10% of the cost of compensation)	3,532,410	41,560
	<b>Total</b>	<b>38,856,510</b>	<b>457,162</b>

(Note: 1 US\$ = NRs. 85)

77. The government will make available, or instruct MoUD and KUKL to make available, necessary budgetary and human resources to fully implement the resettlement plan.

## X. INSTITUTIONAL ARRANGEMENTS

78. The MoUD will be the executing agency responsible for overall strategic planning, guidance, and management of the project, and for ensuring compliance with loan covenants. As part of institutional reforms under the ongoing loans, three water and wastewater organizations were created—Kathmandu Valley Water Supply Management Board (KVWSMB), the asset owner; Kathmandu Upatyaka Khanepani Limited (KUKL), the asset operator and service provider; and Water Supply Tariff Fixation Commission (WSTFC), the regulator. KVWSMB will continue to discharge its responsibilities as asset owner of water supply and wastewater systems and by monitoring of performance of KUKL, as provided in the lease and license agreement between KVWSMB and KUKL. KUKL will be the implementing agency, and the existing PID in KUKL will be responsible for (i) project planning, implementation, monitoring, and supervision; (ii) reporting to KUKL Board of Directors, MOUD, and ADB; and (iii) coordination of all activities in the project (Appendix 7). The experience of PID, KUKL in implementing Kathmandu Valley Water Supply Improvement Project (ADB 2776-NEP) will be useful in taking advance action for the project.

79. **Project Implementation Directorate (PID).** PID has already established a safeguards unit staffed with environmental, social, and legal specialists. At the moment, only one social

officer is working in the unit. The other two legal and environmental officers require mobilizing as soon as possible to look into the safeguards issues for ongoing and upcoming ADB projects. Some engineers working in PID are also familiar with the social safeguards. PID safeguard unit will be responsible for the implementation of the RP, with the assistance of DSC and CAPC. However, to strengthen the institutional capacity and manage the safeguard issues, a 2-day training/orientation on ADB SPS (2009) management and other issues related to land acquisition and resettlement is required of those involved in resettlement and rehabilitation for the projects in PID. The training/orientation will help in understanding the importance and position of resettlement activities in the project planning, designing, and implementation stage. This will be carried out by the resettlement specialist (RS) of DSC. The training sessions will focus on:

- (i) socioeconomic survey and census of DPs;
- (ii) principles and procedures of land and acquisition of other assets (structures, trees/vegetation, etc.), and loss of income due to the project;
- (iii) public consultation and participation;
- (iv) entitlements, compensation, and assistance disbursement mechanisms;
- (v) grievance redressal mechanism; and
- (vi) resettlement data management, etc.

80. **Design supervision consultant.** The RS of DSC will be responsible for conducting field surveys, updating the RP, and resolving grievances at the local level and assisting the PID, social safeguard unit in resettlement activities and implementation of the RP. RS, DSC will also assist in updating and keeping data in an efficient manner. More specifically, RS, DSC will perform the following activities:

- (i) inform affected persons of entitled compensation and methods of receiving compensation payment;
- (ii) deploy local supervisors and enumerators and, if necessary, hire an NGO to conduct a survey of persons affected by the project components, i.e WWTP, interceptors, sewer extension and replacement, etc.;
- (iii) assist PID in grievance resolution;
- (iv) identify vulnerable persons and recommend additional assistance to them; and
- (v) keep and update all resettlement activity records and submit a monthly resettlement implementation progress report to PID, KUKL.

81. **Community awareness and participation consultant.** The CAPC has already been mobilized in PID to assist the three design supervision consultants in implementing the Kathmandu Valley Water Supply and Sewerage Development Project. This consultant can be requested to look after this project, or a new CAPC can be mobilized to look into the safeguard issues. The community awareness consultants are responsible for (i) disseminating information on project activities, including poverty alleviation components, wastewater management, and environmental and social issues, such as resettlement entitlements, through various media means; (ii) creating awareness of preventive care to avoid any health-related hazards; (iii) informing the local residents, businesses, and agricultural crop owners about the temporary disturbances and loss of standing crops due to the construction activities of the project; and (iv) assisting in resolving complaints that arise, as well as in the filing of the complaints, etc.

82. Institutional roles and responsibilities are detailed in Table 13.

**Table 13: Institutional Roles and Responsibilities**

S.No.	Activities	Responsibility
<b>Project initiation stage</b>		
1	ADB website disclosure	ADB
2	Disclosure of summary resettlement plan in local language	PID/DSC
3	Finalization of WWTP, interceptors, and sewer network	PID/DSC
4	Update resettlement plan based on detailed design and send to ADB for review and approval prior to contract award. This will be done after identifying and finalizing the alignment and detailed survey of the affected persons.	PID/DSC
5	Prepare and submit RP implementation report to ADB before the start of civil work	PID/DSC
6	Meetings at community/household level with displaced persons	Contractor/DSC/community awareness participation consultant
7	Establish GRC	PID/ DSC
<b>Resettlement plan updating and implementation</b>		
8	Contractor to identify roads for full closure	Contractor
9	Detailed income survey and affected vendors/hawkers on streets identified for full closure and preparation for temporary relocation/shiftings areas for the affected vendors	DSC
10	Consultant to identify the alignment of laying interceptors	Contractor/DSC
11	Detail census of the likely loss of crops due to the construction of interceptors and WWTP at Gokarna	DSC/ NGO
12	Calculation of compensation and entitlements	PID
13	Awarding of checks for compensation	PID
14	Contractor to begin works	PID/Contractor
15	Grievances redressal	PID/DSC
16	Internal monitoring	PID

ADB = Asian Development Bank, WWTP= wastewater treatment plant, DSC = design and supervision consultants, PID = Project Implementation Directorate.

## XI. IMPLEMENTATION SCHEDULE

83. Detailed design of WWTP packages will begin in mid-2013, while design of the interceptors package and sewer network will begin in the third quarter (Q3) of 2013. Construction is scheduled to commence in mid-2014, to be completed by mid-2018. All resettlement plans are to be updated during detailed design, and reviewed and approved by ADB prior to contract award. The major activities to be carried out during the period include: (i) detailed design and survey of three components; (ii) finalization of alignment and project influence area; (iii) census survey of affected people; (iv) compensation determination and distribution of compensation; (v) formation of grievance redress committee; and (vi) dissemination of information, public consultation, and distribution of the summary of RP in the Nepali language. Table 14 provides the tentative RP implementation schedule:

**Table 14: Implementation Schedule of the Resettlement Plan**

S.N	Activities	Time Period	Responsibility
1	Recruitment of supervision consultant (SC)	Q2 2013	PID, KUKL
2	Detailed design and survey	Q3 2013–Q3 2014	Consultant/ CAPC
3	Finalization of project influence area and identification of affected people	Q3 2013–Q3 2014	Consultant/ CAPC
4	Conduct census survey	2014	Consultant/ CAPC
5	Dissemination of information, public consultation, distribution of summary of RP in Nepali language	Q3 2013 to continue	PID/DSC/CAPC
6	Formation of grievance redress	2014	PID/DSC/CAPC

<b>S.N</b>	<b>Activities</b>	<b>Time Period</b>	<b>Responsibility</b>
	committee		
7	Finalize the list of affected people and the total compensation and rehabilitation cost	2014	PID/DSC
8	Notice to collect compensation	2014	PID/DSC
9	Distribution of compensation	2014	PID/DSC

## **XII. MONITORING AND REPORTING**

84. The DSC is to submit quarterly reports to PID, while the PID will submit semiannual monitoring reports to ADB. Further, PID is also responsible for submitting RP implementation reports to ADB, with the assistance of the DSC social development consultant, to get approval to start the civil works. After the approval from ADB, the construction works can start. If any unanticipated environmental and/or social risks and impacts arise during construction, implementation, or operation of the project that were not considered in the resettlement plan, the government is to promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan. The PID will report any actual or potential breach of compliance with the measures and requirements set forth in the resettlement plan promptly after becoming aware of the breach.

85. The internal monitoring by PID will include: (i) administrative monitoring to ensure that all compensation as per the resettlement plan is paid, implementation is on schedule, and problems are dealt with on a timely basis. Sample monitoring indicators are given in Appendix 8.

86. Monitoring will also include the following:

- (i) consultations with displaced persons;
- (ii) issues raised through the grievance redress mechanism;
- (iii) status of compensation amounts and all assistance; and
- (iv) progress of the resettlement plan implementation.

## REFERENCES

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- 10) Ministry of Physical Planning and Works and Kathmandu Upatyaka Khanepani Limited. 2011. *Nepal: Kathmandu Valley Water Supply and Wastewater System Improvement, Resettlement Framework*. GoN for the Asian Development Bank.

**APPENDIX 1**  
**PROHIBITION NOTICE OF CONSTRUCTION OF ANY STRUCTURES ON THE RIGHT OF WAY (ROW) OF THE RIVERS OF KATHMANDU VALLEY BY THE HIGH POWERED COMMITTEE FOR INTEGRATED DEVELOPMENT OF THE BAGMATI CIVILIZATION (HPCIDBC)**

(Notice published on 19 Asadh 2069 (3 July 2012) in the government daily newspaper *Gorkhapatra*)

This prohibition notice covers construction of any structures within the Right of Way (RoW) on the following banks of rivers in Kathmandu Valley:

1. Bagmati, Bishnumati, and Manohara rivers—20 m from either side of the banks of the rivers
2. Dhobikhola River—areas as fixed by the Dhobikhola project and 9 m from either side of the banks of the river in non-project areas
3. Nakkhu River-12 m from either side of the bank of the river
4. Balkhu, Karmanasa, Kodku, Sangle, and Mahadev rRvers—12 m from either side of the banks of the rivers
5. Samakhusi, and other rivers flowing in the valley—4 m from either side of the banks of the rivers



नेपाल सरकार

## अधिकार सम्पन्न वाग्मती सभ्यता एकीकृत विकास समिति गुह्येश्वरी, काठमाण्डौको

### सूचना ! सूचना !! सूचना !!!

काठमाण्डौ उपत्यका नगर विकास समितिले निर्धारण गरेको 'काठमाण्डौ उपत्यका भित्रका नगरपालिका र नगरोन्मुख गा.वि.स. हरूमा गरिने निर्माण सम्बन्धी मापदण्ड '२०६४' को परिच्छेद २ को प्रकरण नं. ११ र सोही परिच्छेदको प्रकरण ६.२ को देहाय १ र २ मा नेपाल सरकार (मन्त्रिपरिषद) बाट मिति २०६५/०८/०१ मा भएको संशोधित निर्णय अनुसार खोला किनारामा निर्माण गर्ने सम्बन्धमा देहायको खोलाको नापीको नक्साबाट कायम रहेको छेउवाट दायाँ बायाँ देहायका दूरी छोडी मात्र निर्माण गर्न पाइने कानूनी प्रावधान रहेको व्यहोरा सबैमा जानकारीको लागि अनुरोध गरिन्छ ।

#### देहाय

१. वाग्मती, विष्णुमती र मनोहरा खोलामा २०/२० मीटर
२. धोविखोलाको हकमा धाविखोला आयोजना भएको स्थानमा प्रोजेक्टको प्लानिङ अनुसारको दूरी र प्लानिङ बाहेकका स्थानमा ९/९ मीटर
३. नख्खु खोलामा १२/१२ मीटर
४. बल्खु, कर्मनासा, कोडकु, साङ्गले र महादेव खोलामा १०/१० मीटर
५. करखुसी खोलामा ६/६ मीटर
६. टुकुचा, सामाखुसी, र उपत्यकामा वगने अन्य खोलामा ४/४ मीटर र कुनैपनि खोला खोल्सी र राजकूलो छोप पाईने छैन ।
७. हनुमन्ते खोला वगने नगरोन्मुख गा.वि.स. हरूमा समेत खोलाको किनारवाट २० मीटर छाडी निर्माण गर्न पाइने साथै मापदण्डको परिच्छेद २ को प्रकरण नं.६.२ को देहाय १ र २ मा रहेको FAR १.२५ को सट्टा १.५ कायम गर्ने। उपरोक्त मापदण्ड कायम राखी यस समितिको मिति २०६९/०२/२५ को १७३औं बोर्ड बैठकको निर्णयबाट वाग्मती नदीको विभिन्न स्थानमा देहाय बमोजिम वहाव क्षेत्र (नदीको भित्री भाग) निर्धारण भएको छ । साथै काठमाण्डौ उपत्यकाका अन्य नदीहरू विष्णुमती, मनोहरा, धोवीखोला, नख्खुखोला, बल्खु, कर्मनासा, कोडकु, साङ्गले, महादेवखोला, करखुसी खोला, टुकुचा, सामाखुसी, हनुमन्ते लगायत अन्य खोलासमेतको बहाव क्षेत्र निर्धारण हुने क्रम जारी रहेकोले नदीहरूको वहावक्षेत्रमा प्रतिकुल असर पर्ने कार्य नगर्नु नगराउनु हुन समेत सम्बन्धित सरोकारवाला निकाय, व्यक्ति, संघ/संस्थालाई यसै सूचनाद्वारा जानकारी गराइन्छ ।

**वाग्मती नदीको देहायको स्थानमा देहाय बमोजिम वहावक्षेत्र (नदीको भित्री भाग) निर्धारण गरिएको छ ।**

- (क) सुन्दरीजल-गोकर्ण ब्यारेजसम्म २० मीटर,
- (ख) गोकर्ण-ब्यारेज-जोरपाटी पुलसम्म ३५ मीटर एवं जोरपाटी पुलगुह्येश्वरी खण्डमा ४० मीटर,
- (ग) हालको वाग्मतीनदीको वहावलाई नै आधार मानी तीलगंगा-शंखमूल खण्डमा न्यूनतम ३० मीटर,
- (घ) शंखमूलदेखि विष्णुमती नदीको संगमसम्म न्यूनतम ६० मीटर र
- (ङ) विष्णुमती दोभान तथा सोभन्दा तल्लो तटीय क्षेत्रमा न्यूनतम ८० मीटर

यो सूचनालाई बेवास्ता गरी उक्त वहाव क्षेत्र एवं मापदण्ड विपरित कुनै प्रकारको कार्य गरे गराईएको पाइएमा कानून बमोजिम कारवाही भैजाने व्यहोरा समेत अवगत गराइन्छ ।

July 3, 2012 (Anech 19, 2069) Gorkhapatra (जोर्खापत्र दैनिक)

**APPENDIX 2: SAMPLE FORM FOR RAPID INCOME SURVEY FOR BUSINESSES**  
Kathmandu Valley Wastewater Management Project  
**Questionnaire for**  
**BUSINESSES/SHOPS SURVEY**

**Part A: Identification**

<b>Name of AP</b>		<b>Surveyed by</b>	
Name of road		Nature of business	Mobile/permanent
Location address		Type of road	Minor/major
Date of survey		Data edited by	

**Part B: Business**

General store	Grocery	Clothes/ ready-made garments	Small hotels/ restaurants	Medicine	Mobile shops	Books/ stationery	Cyber cafe
01	02	03	04	05	06	07	08
Sweets	Utensils	Construction materials (cement, rods)	Tailoring	Vehicle repair	Newspaper sellers	Vegetables	fruits
09	10	11	12	13	14	15	16
Meats (chicken/fish/buffal o)	Bathroom fittings	Ornaments	Electrical goods	Shoes	Bangles	Others (specify)	
17	18	19	20	21	22	23	

Is the business operator the owner or a tenant owner?

How many people are employed in the business? \_\_\_\_\_

If the operator is a tenant, how much rent does he pay per month? NRs. \_\_\_\_\_

What is the average profit from the business per day (before payment of rent)? NRs \_\_\_\_\_

**Vulnerability:**

**Should the business operator or hawker be considered vulnerable? Yes/No**

Reason for vulnerability (give details of income, physical vulnerability, etc):

Gender	Disabled	Poverty	Minority	Other (state)
01	02	03	04	05

**Hawkers:** Location of hawker: \_\_\_\_\_ Type of merchandise (tick)

Fruit	Vegetables	Fish	Hot food	Books and Stationery	Clothes	Shoe repair	Other (state type)
01	02	03	04	05	06	07	08

Is the hawker mobile or permanent? Mobile = 1; Permanent = 2

How often does the hawker occupy this site?

Every day	Most days	1-2 days/week	< 1 day/week	Full day	Half day
01	02	03	04	05	06

Does the hawker pay anyone to allow him to use this site? Yes = 1; No = 2

How much does he pay per day? \_\_\_\_\_

Who does he pay? \_\_\_\_\_

What is the hawker's average profit per day (total, before paying for use of the site)? \_\_\_\_\_

**APPENDIX 3**  
**SAMPLE OF CONSULTATION/FOCUS GROUP DISCUSSION ATTENDANCE**

**A. Gokarna WWTP**

काठमाडौं उपत्यका नातवारण सुधार आयोग  
Attendance sheet of Participants: TA-7936  
Focus Group Discussion  
Proposed Wastewater Treatment Plant  
SITE  
Gokarna Ward No. 6  
Place: Gokarna VDC, Ward No-6 Date: 17 July, 2022

S.No	Name (वार्ड)	Sex (लिंग)	Sign (हस्ताक्षर)
1	Ramjee Shrestha	Male	
2	Wilson Shrestha	Male	
3	Sailesh Shrestha	male	
4	Kam Sharan Shrestha	male	
5	गोर्खा	म	
6	Hari Das Shrestha	male	
7	Ram Suman Shrestha	"	
8	Ram Shrestha	"	
9	Sita Ram Gauran	ss	
10	Ramie Shrestha	ss	
11	Raju Shrestha	"	
12	Gauri Shrestha	"	

Agenda of the Meeting at Proposed Gokarna WWTP

Meeting Agenda

- 1) गौरीगंगा नदी नदी 6 मा. आयुनिड फीडरपाती प्लांट निर्माण, विस्तार गर्ने सम्बन्धमा
- 2) WWTP प्लांटस्यार गर्दा आउतसक्ने सम्स्याहरू
- 3) पर्त सक्ने प्रभाव (Impact Analysis) विवेचन र समाधानका उपारहरू बारे

निर्णयहरू

- Agenda 1 मा समावेश गर्दा Waste water treatment system को लक्ष्य निम्न छिदीने गर्ने निर्णय गर्नुपर्ने
- 1) River bed treatment system नदई Split गर्दा wetland system वा community base मा गर्ने
  - 2) यसका अा sewerage लक्ष्य गुहेली मा प्रसार गर्ने
  - 3) ठाउँको अपुज को कारण हलो मात्र राख्न नसकिने
- 2) सो काम को लागि बागुदामीड सहभागीता हुनु पर्ने







## E. Consultative Workshop, Kathmandu

## CONSULTATIVE STAKEHOLDER WORKSHOP

KATHMANDU VALLEY URBAN ENVIRONMENT IMPROVEMENT PROJECT  
ADB TA 7936

Participant list

Date: 14/8/2012  
Day Tuesday

Sno	Name	Designation/Organization	Contact No	Email	Remarks
1.	Anil Bhodra Kharel	DDP / KVKL PID	9841227056	anilkharel@hotnail.com	
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33	Raja Ran Patil	Water & Engineer	98711-28328	rajapatil@unicef.org	GH
33	Bhuvit Bahadur K	H.P. CIDBC	9741083766	bhuvitbahadur@unicef.org	GH
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40	Guram P. Shora	Pris. Dh	9851055149	guramp@unicef.org	GH
41	Rupendra Sin	KUVEIP		rupendra@unicef.org	GH

No.	Biijaya M. Sivallan - KVIC	9841329505	biijayam@kivimit.com	Ann
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59	Sushela Chand Support Engineer / PPTA			
50	Iman Mahajan Tecnun (lead of BRBIP PPTA)	9805077391		
51	Vic Hobanoff Tecnun			
52	Mina Bady Tecnun			
53	Hanna Pelkonen Tecnun	9851156055	hanna.pelkonen@redhat.com	

**APPENDIX 4  
PHOTOGRAPHS**

1. Consultations/Focus Group Discussions with Stakeholders

Miscellaneous (WWTP sites, sewer line, etc.)

**APPENDIX 4: Photographs of Consultations/Focus Group Discussions**



Consultation/FGD at Sallaghari WWTP, Bhaktapur Municipality



Consultation/FGD at Kodku WWTP, Lalitpur Submetro



Consultation/FGD at Gokarna WWTP, Kathmandu Metro



Consultation/FGD at Gokarna WWTP, Kathmandu Metro



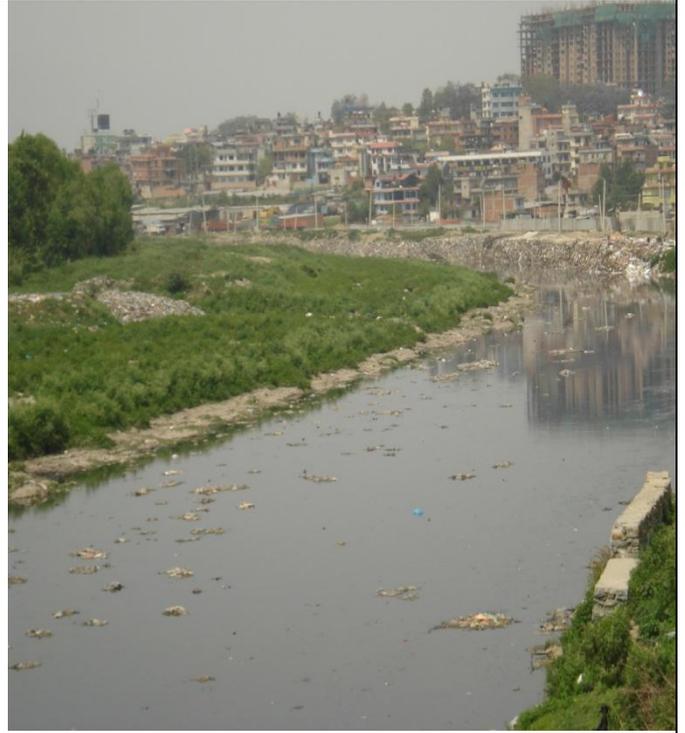
Consultations/FGD at Khasi Bazar, Kirtipur Municipality



Public notice for participation in the consultations/FGD



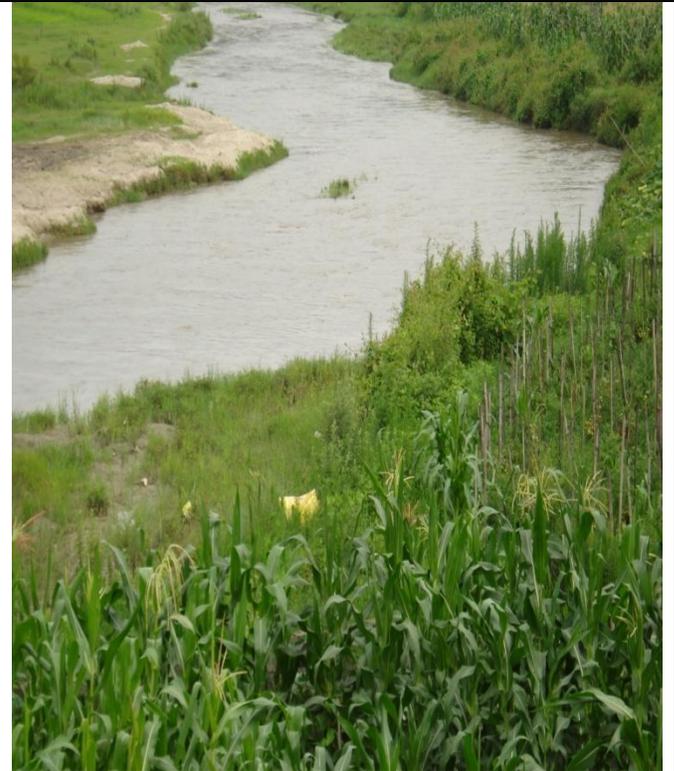
A view of the solar photovoltaic (PV) system installed at Dhobighat WWTP, which occupied 0.75 ha of land allocated for WWTP



A view of Bagmati River from Dhobighat, Lalitpur Submetro



Crop plantation along the banks of Manohara River, where laying of interceptors has been proposed (1)



Crop plantation along the banks of Manohara River, where laying of interceptors has been proposed (2)

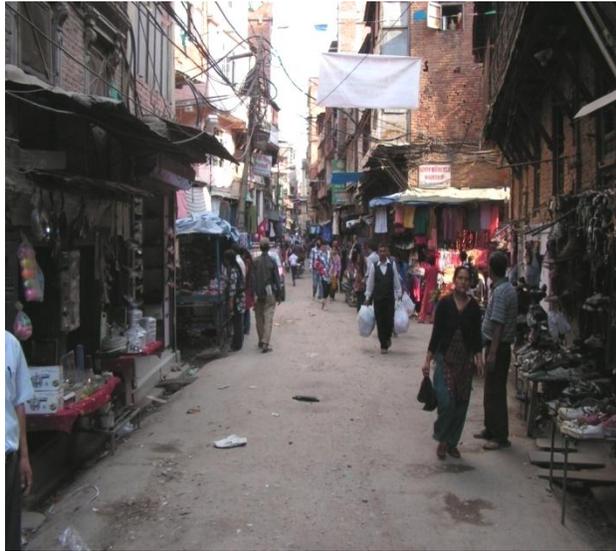


A view of proposed Khokana WWTP, Khokana VDC, Lalitpur District



Another view of proposed Khokana WWTP, where agricultural farming and trees/vegetation exist

**Example of Proposed Area for New Laying, Extension, Replacement, and Rehabilitation of Sewer**



**Teuda:** One of the busiest market areas of Kathmandu Metro where rehabilitation and replacement of sewerage pipeline has been proposed



**Ason:** Other market area of Kathmandu Metro where rehabilitation and replacement of sewerage pipeline has been proposed



**Teuda:** Another part of the market area of Kathmandu Metro where rehabilitation and replacement of sewerage pipeline has been proposed



A typical house in the Kathmandu urban areas where separation by laying new sanitary sewer has been proposed

**APPENDIX 5: SUMMARY OF CONSULTATIONS, MEETINGS, WORKSHOPS, AND FOCUS GROUP DISCUSSIONS HELD**

Date	Location	No. of Participants	People Who Attended	Topics Discussed	Issues Raised
26 March 2012	Guheshori, Kathmandu	6	Project manager and senior officers of HPCIDBC; PPTA team	Scope and objectives of PPTA 7936 and PPTA-43448; ongoing activities of HPCIDBC; BAP implementation	Consultation on how to move the project forward and the problems likely to be encountered during implementation
19 April 2012	Lalitpur Municipality, Pulchowk, Lalitpur	4	Environment and Drainage Section Chiefs, Lalitpur Municipality; PPTA team	Scope and objectives of PPTA-7936; ongoing activities and problematic areas of Lalitpur Municipality	Consultation on how to solve likely problems on sewerage areas during implementation
19 April 2012	Kathmandu Metropolitan City, Bagdurbar, Kathmandu	4	Concerned division chiefs of Kathmandu Municipality and PPTA team	Scope and objectives of PPTA-7936; ongoing activities and FGD on problematic areas of Kathmandu Metropolitan City	Consultation on how to solve likely problems on sewerage areas during implementation
20 April 2012	Libali, Bhaktapur	5	Ex-Mayor and Engineers of Bhaktapur Municipality, PPTA Team	Scope and objectives of PPTA -7936; ongoing activities and FGD on problematic areas of Bhaktapur Municipality; vision on wastewater management	Consultation on how to solve likely problems on sewerage areas during implementation
20 April 2012	Madhyapur Thimi Municipality, Thimi	4	Engineer and community development officer of municipality, PPTA team	Scope and objectives of PPTA-7936; ongoing activities and FGD on problematic areas of Madhyapur Thimi Municipality	Consultation on how to solve likely problems on sewerage areas during implementation
24 April 2012	Kitipur Municipality, Kirtipur	3	Municipality engineer, PPTA team	Scope and objectives of PPTA-7936; ongoing activities and FGD on problematic areas of Kirtipur Municipality, Kirtipur	Consultation on how to solve likely problems on sewerage areas during implementation
26 April 2012	Falcha, Kathmandu	17	Representatives from municipalities of Kirtipur, Lalitpur, Bhaktapur, Madhyapur Thimi, and Kathmandu, KVWSMB, KUKL, PID, PPTA team	FGD on identification of project Intervention areas in different municipalities	Identification of various problematic areas for project consideration
31 May 2012	Anamnagar	6	CBP team leader, GIS expert, PPTA team	Ongoing activities of CBP team, status of sewer networks, GIS activities in KUKL, Anamnagar, Kathmandu	Consultation regarding the status of sewer network, GIS
22 June 2012	Singhadurbar	13	MoUD, HPCIDBC, PID, KUKL,	Meeting on coordination on the wastewater sector, Singhadurbar,	Coordination problems with different stakeholders in the

Date	Location	No. of Participants	People Who Attended	Topics Discussed	Issues Raised
			Kathmandu Metropolitan City, KVWSMB, PPTA	MoUD, Kathmandu	wastewater sector
28 June 2012	WWTP site, Sallaghari	14	Local people, local politicians, farmers, teachers	Positive and negative impact of the wastewater treatment plant construction, local community's response to the project	Foul smells when the plant was in operation, the necessity of building a boundary wall around the WWTP to stop local youths for negative activities, proper design of sewer
29 June 2012	Kodku, Lalitpur	15	Local people, local politicians, farmers, teachers	Positive and negative impact of wastewater treatment plant construction, local community response to the project	Not willing to allow the land to be used for treatment plant, since the land was not used for the said objective for almost 36 years; foul smell; fertile land should be used for agricultural production, not for WWTP
29 June 2012	Anamnagar	15	PID, KUKL, BDA, stakeholders	Ongoing activities of DSC under HPCIDBC, design criteria of sewer lines, KUKL, Anamnagar	About designing criteria of sewer lines
9 July ,2012	Ta Dhoka Purnchandi Lalitpur	12	Local people, local politicians, farmers, teachers	Positive and negative impact of sewerage network construction, community response to the project, willingness and affordability, KUKL/municipal service	Public participation in project implementation, implementing agency
10 July 2012	Maru Dhoka Kathamndu	12	Local people	Positive and negative impact of the sewerage network construction, community response, willingness and affordability	Community participation in project Implementation, agency involved in implementation
13 July 2012	Kritipur , Khashibazar	11	Local people, farmers, housewives	Positive and negative impact of sewerage network construction, community response, willingness and affordability, design issues, KUKL/municipal service, separation of storm water and sewerage	Community participation in project implementation, awareness programs for community with regards to waste water management, better services
16 July 2012	Jagritinagar, Kathmandu (slum area)	20	Residents of area, housewives	About project, source of income for livelihood, access to water supply and sanitation, need for action, connection Issues	Any livelihood training program for women. employment opportunities in the project
16 July 2012	Kritipur , Panga, Lachi	11	Local people, local politicians, farmers,	Positive and negative impact of sewerage network construction,	Community participation in project Implementation, sewerage design

Date	Location	No. of Participants	People Who Attended	Topics Discussed	Issues Raised
			teachers	community response to the project, willingness and affordability	
17 July 2012	Gokrna VDC Ward No. 6	15	Local people, local politicians, farmers, teachers	About the proposed WWTP, local community response to the project	Not open to construction of modern treatment plant, chronic sewerage problems, problems relating to sewer pipe-laying on the existing roads (several pipes in Melamchi, telecommunication lines, etc.), small decentralized type (VETIVER system of wastewater treatment) will be better, community involvement in project
18 July 2012	Shantinagar, Baneshwor, Kathmandu	10	Local people, shopkeepers, Local politicians, teachers	Positive and negative impact of sewerage construction, community willingness and affordability design issues, KUKL/municipal service, separate system for storm water and sewerage	Community participation in project implementation, implementing agency, better/improved service
19 July 2012	Tholo Byasi, Bhaktapur	20	Local people, shopkeepers, local politicians, teachers	Positive and negative impact of sewerage network construction, community response towards project, willingness and affordability, separation of storm water and sewerage system, design issues, KUKL/municipal service	Community participation in project implementation, implementing agency better/improved service
20 July 2012	Purano Jagati, Bhaktapur (poor households)	14	Local people, farmers, housewives	About project, access to water supply and sanitation, need for action, connection issues	Need for livelihood training program for women, employment opportunities in the project
14 August 2012	Hotel Everest Sheraton	51+	Government line agencies, JICA, ADB/NRM officials, representatives from municipalities, HPCIDBC, KUKL, PID	Project interim reports including existing sewerage management, sewerage network, WWTP, GIS, institutional and capacity building issues, resettlement, gender and social issues	Construction of water supply and sewerage pipelines at the same time, existing storm water and sewerage discharge in one pipeline, existing electric supply for WWTP operation, necessity for construction of septic tank in each house, discharge of

Date	Location	No. of Participants	People Who Attended	Topics Discussed	Issues Raised
					wastewater directly into the river, coordination problem between different sectors involved in wastewater management and implementation
10 October 2012	Affadol, Ward No. 4, Lalitpur	4	Chairman, advisor of Affadol area improvement and conservation committee, other community members	Construction of modern WWTP in Dhobighat, positive and negative impact of WWTP construction, further consultation plan with the large number of stakeholders, local community response to the project	Not interested to consult with project personnel and not willing to allow the land to be used for for WWTP, since the land was not used for the said objective at the time of acquisition; foul smells; land should be used for other purposes like bus terminal, vegetable market, etc.

**APPENDIX 6: SUMMARY PROCEDURES FOR RESETTLEMENT PLANNING**

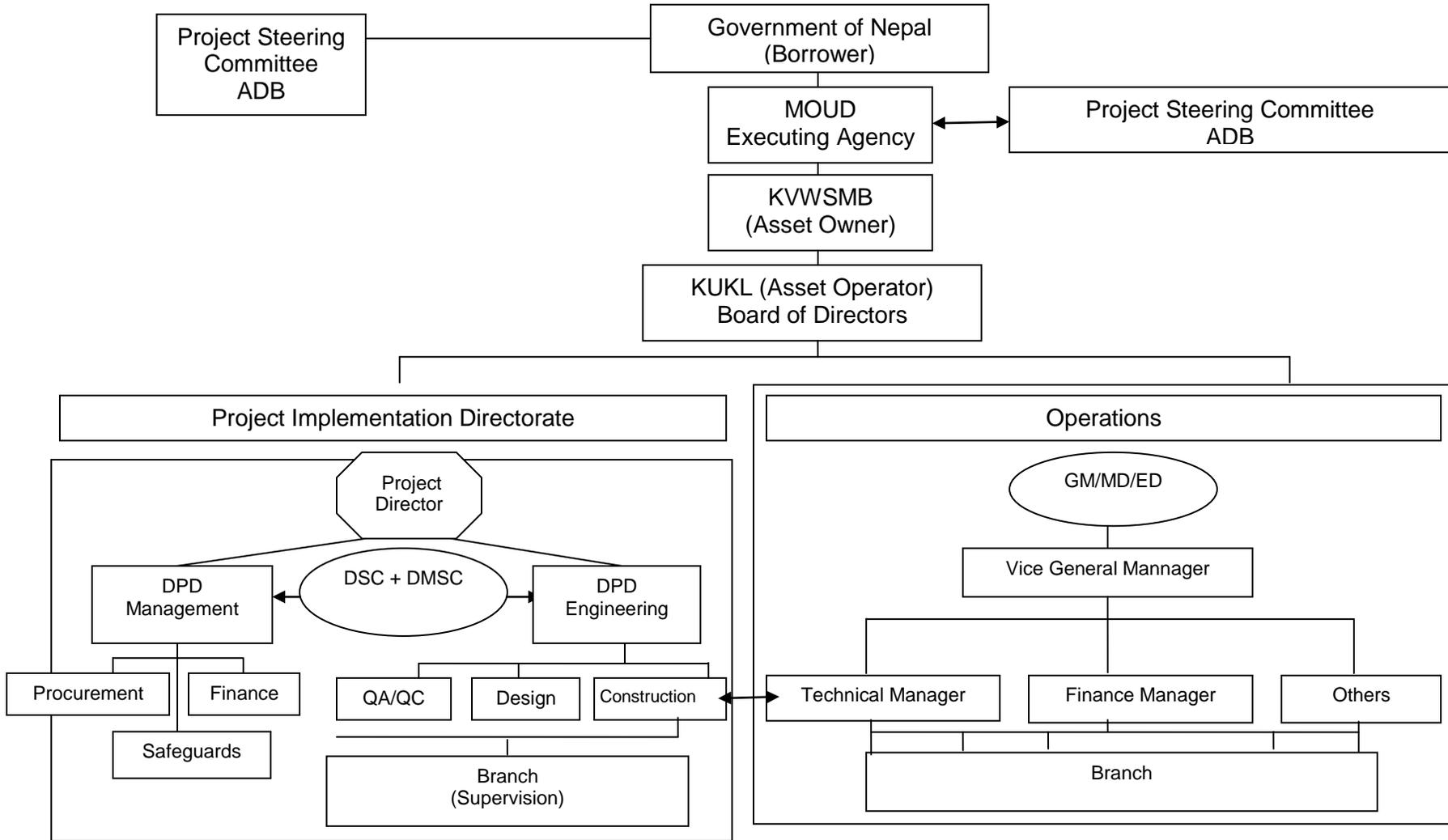
Stage	Activity	Resources	Responsibility
<b>Detailed design</b>	<p>The scope of resettlement impact should be limited to small-scale temporary reductions in business income if customer access is impeded. Towards this end, carry out the following:</p> <ul style="list-style-type: none"> <li>(i) Identify roads that will experience full closure during construction.</li> <li>(i) Estimate duration of full closure and extent of potential impacts and losses.</li> <li><b>(ii)</b> Conduct complete census of all affected households based on detailed design, and identify the final affected households (permanent and temporary impacts).</li> <li><b>(iii)</b> Distribute identification cards to project affected households to receive their entitlement.</li> <li>(v) Establish the project cut-off date for IR impacts entitlement.</li> </ul>	<p>Detailed designs prepared by contractors</p>	<p>Contractor, checked by design and supervision consultant (DSC) social specialist</p>
	<p>(vi) Conduct income survey on roads to be fully closed to identify affected businesses and crop owners who will suffer crop losses while laying the interceptors, and to determine extent of impacts and compensation amounts.</p>	<p>Income survey questionnaire (see sample in resettlement plan)</p>	<p>DSC social specialist (with help from hired enumerators)</p>
	<ul style="list-style-type: none"> <li>(vii) Based on survey, prepare a list of affected persons and calculate their compensation. This is the basis for the resettlement plan budget.</li> <li>(viii) Validate and/or update business survey results for income.</li> <li>(ix) Screen for vulnerable households.</li> </ul>	<p>Income survey questionnaire/tax records</p>	<p>DSC social specialist</p>
	<p>(x) Submit updated resettlement plan for the IR impacts components to ADB and PID for review, confirmation, and disclosure on ADB and PID website.</p>		<p>DSC social specialist</p>
	<p>(xi) Conduct public consultation of resettlement plan and entitlements.</p>		<p>DSC social specialist</p>
	<b>Preconstruction</b>	<p>(xii) Provide advanced notice (at least 1-2 weeks) to affected persons.</p>	
<p>(xiii) Pay compensation to affected persons based on resettlement plan before loss occurs (i.e., before construction begins).</p>			<p>Project Implementation Directorate (PID) (supported by DSC social specialist)</p>
<p>(xiv) Ensure receipt of payments.</p>			<p>PID (supported by DSC social specialist)</p>

Stage	Activity	Resources	Responsibility	
	(xv) PID will record the payments in their own accounts register.		PID	
	(xvi) Ensure that PID received approval to start the civil works from ADB.		PID	
<b>Construction</b>	(xvii) Ensure all mitigation measures from IEE (i.e., providing planks and boards across trenches, etc.) are incorporated into construction contract.	See IEE	DSC/PID	
	(xviii) Implement all mitigation measures during construction, including required safety and access measures (i.e., planks and boards).		Construction Contractor	Table in Section II.A (Table 2, page 12)
	(xix) Monitor construction activities and ensure contractors are implementing all safety and mitigation measures, and maintaining access to businesses.	See IEE	DSC DSC/PID	

**APPENDIX 7: SAMPLE IDENTIFY (ID) CARD FOR ENTITLED PERSONS**

SAMPLE IDENTITY CARD (NON-TITLE HOLDERS)																						
NAME OF THE SUBPROJECT: CRDP															DATE:							
Sl. No.	Address:	Property Identification Number	Name of Head of the Entitled Family and Members	Relationship with the Family	Age (years)	Sex (M/F)	Occupation	Monthly Income	Vulnerable / Non-vulnerable	Total Affected Area in m <sup>2</sup>	Type of Loss	Type of Structure	Displaced / Non Displaced	Compensation Total Cost of Structure	Allowances -1 (Shipping)	Allowances - 2 (Transitional)	Allowances - 3 (Income Restoration-Training)	Allowances - 4 (Vulnerable)	Total Allowances	Total Amount Compensation + Allowance	Remark	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
1	PHOTOGRAPH																					
<b>TOTAL =</b>																						

**APPENDIX 8: PROJECT IMPLEMENTATION ARRANGEMENTS**



ADB = Asian Development Bank, DPD = Deputy Project Director, DSC = design and supervision consultants, GM/MD/ED = General Manager/Managing Director/Executive Director, KVWSMB = Kathmandu Valley Water Supply Management Board, KUKL = Kathmandu Upatyaka Khanepani Limited, MOUD = Ministry of Physical Planning and Works, QA/QC = quality assurance and quality control.

**APPENDIX 9: SAMPLE MONITORING INDICATORS**

<b>S. N.</b>	<b>Resettlement Plan Activities</b>	<b>Progress</b>	<b>Remarks</b>
<b>A. Preconstruction activities and resettlement plan activities</b>			
1	Assessment of new resettlement impacts due to changes in project design (if required)		
2	Preparation/updating of resettlement plan(s) based on final detail design		
	Disclosure of updated resettlement plan to affected people and communities		
3	Submission for review and approval of the final/ updated resettlement plan from ADB		
4	Approval to start the civil works from ADB		
5	Disclosure of approved final RP(s) in ADB and EA websites		
6	Establishment of grievance redress committee		
7	Verification of displaced persons census list; assessment on compensation and assistance, and readjustment		
	Preparation/selection of the temporary relocation sites for the hawkers		
<b>A. Resettlement plan implementation</b>			
1	Payment of compensation to displaced persons		
2	Special measures for vulnerable groups		
3	Reinstallation of public utilities		
4	Records of grievance redressal		
5	Temporary relocation of hawkers and vendors		
<b>C. Social measures during construction as per contract provisions</b>			
1	Prohibition of employment or use of children as labor		
2	Prohibition of forced or compulsory labor		
3	Ensure equal pay for equal work to both men and women		
4	Implementation of all statutory provisions on labor like health, safety, welfare, sanitation, and working conditions		
5	Maintenance of employment records of workers		

ADB = Asian Development Bank, PID = Project Implementation Directorate.

## **APPENDIX 10: TRAFFIC MANAGEMENT PLANNING (TMP)**

### **A. Principles for TMP around the Sewer Network Construction Sites**

1. One of the prime objectives of this TMP is to ensure the safety of all the road users along the work zone and to address the following issues:
  - (i) the safety of pedestrians, bicyclists, and motorists traveling through the construction zone;
  - (ii) protection of the work crew from hazards associated with moving traffic;
  - (iii) mitigation of the adverse impact on road capacity and delays to the road users;
  - (iv) maintenance of access to adjoining properties; and
  - (v) addressing issues that may delay project works.

### **B. Operating Policies for TMP**

2. **Figure 1** illustrates the operating policy for TMP of the sewer networks.

#### **1. Analyze the impact due to street closure**

3. Apart from the capacity analysis, a final decision to close a particular street and divert the traffic should involve the following steps:

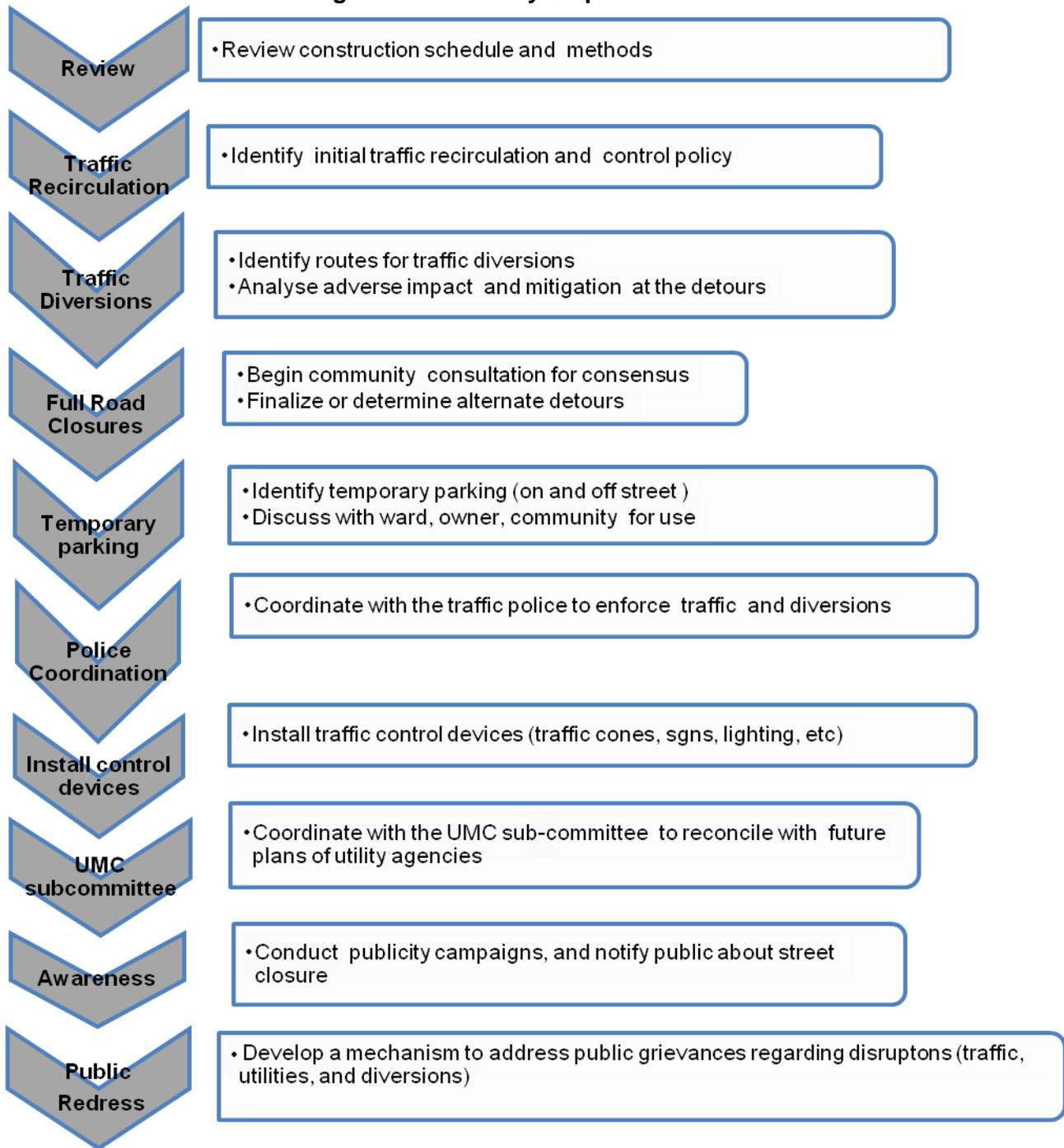
- (i) approval from the ward office or community to use the local streets as detours;
- (ii) consulting with businesses, community members, traffic police, Department of Roads, etc. regarding the mitigation measures necessary at the detours where the road is diverted during the construction;
- (iii) determining the maximum number of days allowed for road closure, and incorporation of such provisions into the contract documents;
- (iv) determining if additional traffic control or temporary improvements are needed along the detour route;
- (v) considering how access will be provided to the worksite;
- (vi) contacting emergency service, school officials, and transit authorities to determine if there are impacts to their operations; and
- (vii) developing a notification program for the public so that the closure is not a surprise. As part of this program, the public should be advised of alternate routes that commuters can take or will have to take as a result of the traffic diversion.

4. If full road closure of certain streets within the area is not feasible due to inadequate capacity of the street or public opposition, the full closure can be restricted to weekends, with the construction commencing on Friday night and ending on Sunday morning prior to the morning peak period.

#### **2. Increase public awareness and notifications**

5. As per discussions in the previous sections, there will be travel delays during the construction, as is the case with most construction projects, albeit on a reduced scale if utilities and traffic management are properly coordinated. There are additional grounds for travel delays in the area, as most of the streets lack sufficient capacity to accommodate additional traffic from diverted traffic as a result of street closures to accommodate the work.

**Figure A10.1: Policy Steps for the TMP**



6. The awareness campaign and prior notification of the public will be a continuous activity which the project will carry out to compensate for the above delays and minimize public claims as a result of these problems. These activities will take place sufficiently in advance of the time when the roadblocks or traffic diversions take place at the particular streets. The reason for this

is to allow sufficient time for the public and residents to understand the changes to their travel plans. The project will notify the public about the roadblocks and traffic diversion through print, TV, and radio media. In addition, the project, in collaboration with the utility management coordinator, will also seek the assistance of the ward office, local clubs, and others to post the public notice regarding street closure and traffic diversions in the future.

7. The utility management coordinator will also conduct an awareness campaign to educate the public about the following issues:

- (i) traffic control devices in place at the work zones (signs, traffic cones, barriers, etc.);
- (ii) defensive driving behavior along the work zones; and
- (iii) reduced speeds enforced at the work zones and traffic diversions.

8. It may be necessary to employ a road safety education specialist to design an appropriate program for road safety, and to conduct the awareness programs.

9. The campaign will cater to all types of target groups, i.e. children, adults, and drivers. Therefore, these campaigns will be conducted in schools, civic centers, and community centers. In addition, the project will publish a brochure for public information. These brochures will be widely circulated around the area and will also be available at the KUKL project directorate, offices of both the contractor and the consultant, and the contractor's site office. The text of the brochure should be concise to be effective, with a lot of graphics. It will serve the following purpose:

- (i) explain why the brochure was prepared, along with a brief description of the project;
- (ii) advise the public to expect the unexpected;
- (iii) educate the public about the various traffic control devices and safety measures adopted at the work zones;
- (iv) educate the public about the safe road user behavior to emulate at the work zones;
- (v) tell the public how to stay informed or where to inquire about road safety issues at the work zones (website, name, telephone, mobile number of the contact person; and SMS service or traffic information on FM Radio, e.g. Ujyalo FM Station); and
- (vi) indicate the office hours or relevant offices.

### **3. Install traffic control devices at the work zones and traffic diversion routes**

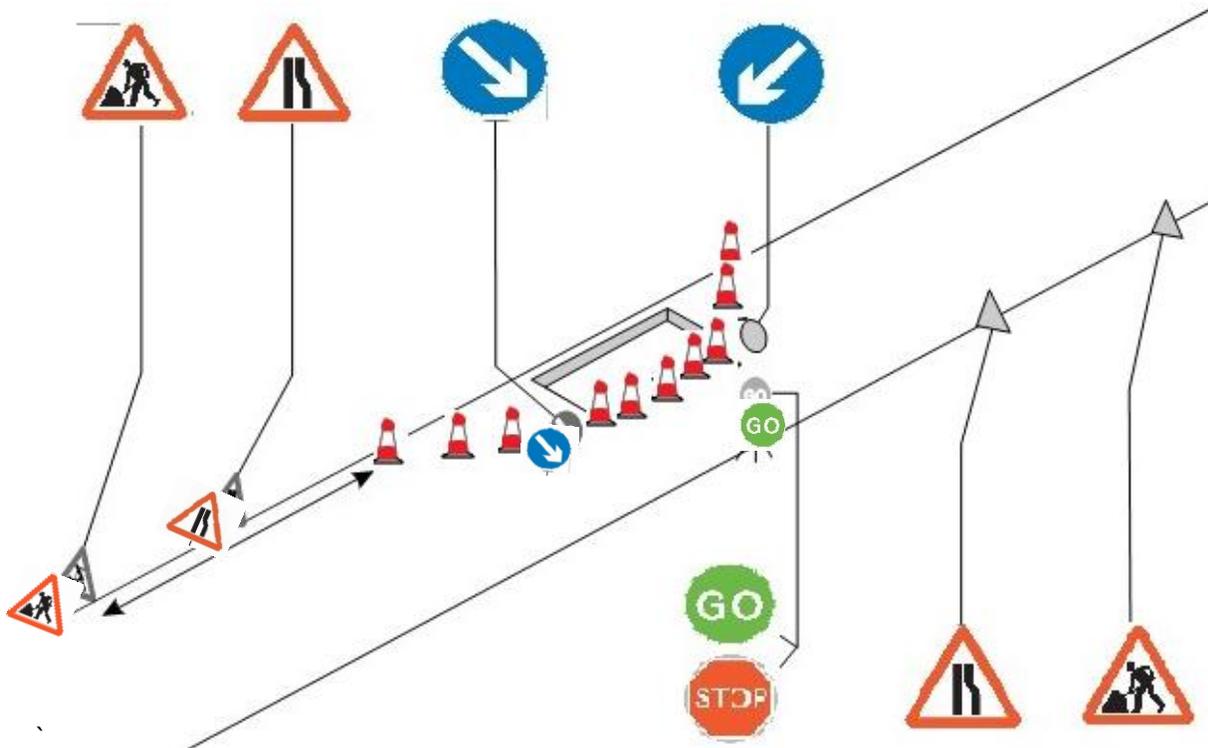
10. The purpose of installing traffic control devices at the work zones is to delineate these areas to warn, inform, and direct road users about a hazard ahead, and protect the former as well as the workers. As proper delineation is a key to achieve the above objective, it is important to install good traffic signs at the work zones.

11. Procedures for installing traffic control devices at any work zone vary, depending on road configuration, location of the work, construction activity, duration, traffic speed and volume, and pedestrian traffic. Work will take place at both minor and major streets such as Pashupati Sadak and the Dhumbarahi-Chabahil section of Ring Road. As such, the traffic volume and road geometry vary, with the latter requiring more elaborate settings. However, regardless of where the construction takes place, all the work zones should be cordoned off, and traffic shifted away at least with traffic cones, barricades, and temporary signs (temporary "STOP" and "GO"). The work will closely follow the guidelines outlined in the DOR Traffic Sign Manual 1997 (which

includes the DOR 1996 document “Safety at Roadwork”) and other literature available in this respect.

12. Figure A10.2 illustrates a typical set-up for installing traffic control devices at the work zone of the area.

**Figure A10.2 Basic Layout for Delineation of a Work Zone (small area)**



Note:  
The Road Narrows Ahead warning-sign shown are only required to cordon the DNI work-zones at Pashupati Sadak and Ring Road (Chabahil- Dhumbarahi section)

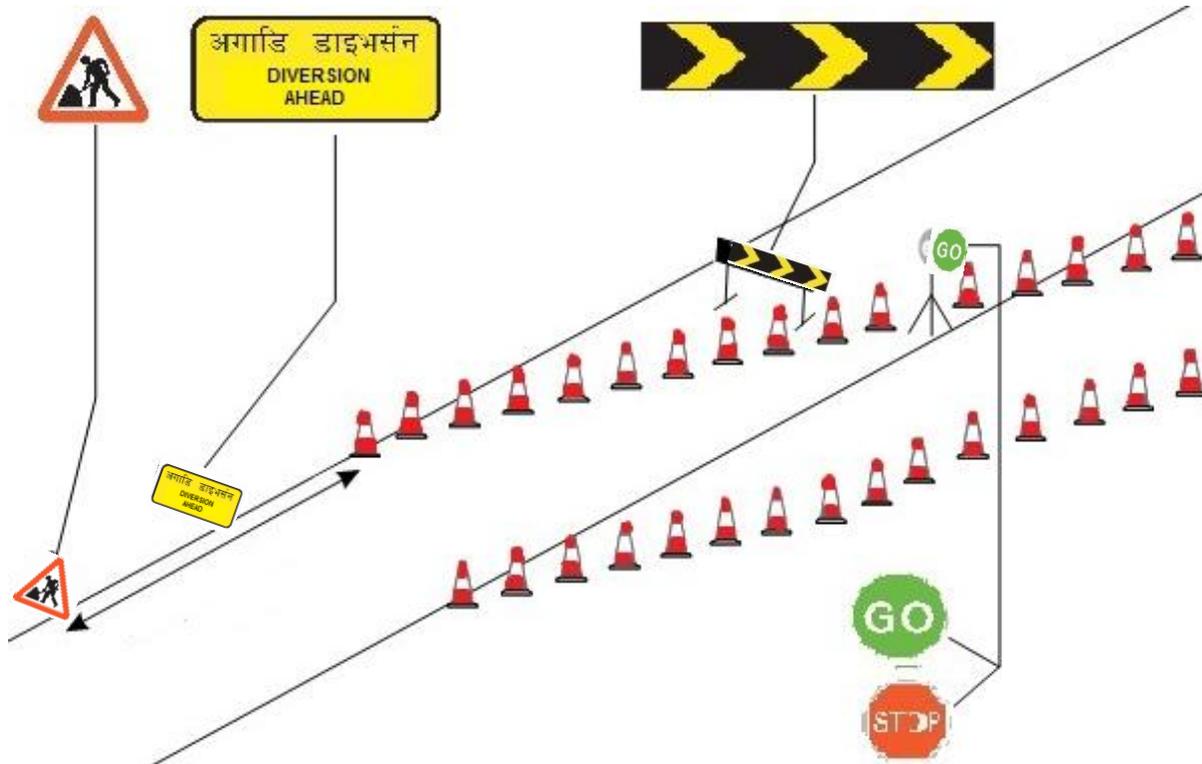
Source: DOR Traffic Sign Manual; Volume I; August 1997; Kathmandu, Nepal.

13. The work zone should take into consideration the space required for a buffer zone between the workers and the traffic (lateral and longitudinal) and the transition space required for delineation, as applicable. For the DNI works, a 30-cm clearance between the traffic and the temporary STOP and GO signs should be provided. In addition, at least 60 cm is necessary to install the temporary traffic signs and cones. Figure A10.2 clarifies that the "ROAD NARROWS" warning sign is only necessary at the DNI works zones along Pashupati Sadak and the Ring Road section, where high traffic speeds are likely during the off-peak hours and at night. All the temporary traffic signs should be reflectorized, especially for the works to be conducted during nighttime, as per the DOR Traffic Sign Manual 1997.

14. All the traffic diversions should be properly delineated through proper "DIVERSION AHEAD" and "ROADWORK AHEAD" signs, as indicated in Figure A10.3. In addition, the "B46" temporary warning sign for sharp bends used at the temporary diversion should be in place after

the start of the taper of the traffic cones. Flashing beacons should be installed at the entry to the work zone and traffic diversion for night constructions, or if backfilling of the DNI trench does not take place after the completion of a day shift.

**Figure A10.3 Basic Layout for Delineation of a Work Zone (Small Area)**



Source: DOR Traffic Sign Manual; Volume I; August 1997; Kathmandu, Nepal.

15. Traffic police should regulate traffic away from the work zone and enforce the traffic diversion resulting from full street closure in certain areas during construction. For the DNI and BDS works, one personnel is necessary at each entry to the diversion from both directions. These personnel should be equipped with reflective jackets at all times, and have traffic control batons (preferably the LED type) for regulating the traffic during nighttime.

16. In addition to the delineation devices, all the construction workers should wear fluorescent safety vests and helmets in order to be visible to motorists at all times. There should be provision for lighting beacons and illumination for night construction. In light of the ongoing load-shedding problem in Nepal, it is practical to use solar powered LED lights, which are energy efficient, wherever feasible.

**APPENDIX 11: DRAFT PROJECT INFORMATION PAMPHLET**

**PROJECT INFORMATION BOOKLET**

Kathmandu Valley Wastewater Management Project (KVVMP)

Government of Nepal (GoN)

Ministry of Urban Development (MoUD)

Kathmandu Upatyaka Khanepani Limited (KUKL)

Project Implementation Directorate (PID)

Funded by

Asian Development Bank

**INFORMATION**

For affected persons and users on their entitlements and compensation for loss of income or impact for public needs

**PROJECT COMPONENTS:**

Rehabilitation/upgrading of wastewater treatment plant

Laying and cleaning of interceptors in different bank of rivers

Rehabilitation, replacement, and expansion of sewerage networks

**November 25, 2012**

## **A. General Project Information**

1. The proposed Kathmandu Valley Wastewater Management Project (the project)<sup>1</sup> will support the ongoing efforts of the Government of Nepal towards improving the wastewater services in Kathmandu Valley. The project will invest to maximize the efficiency and effectiveness of existing wastewater sector infrastructure and service provision provided or planned, to restore, establish, and extend wastewater services in Kathmandu Upatyaka Khanepani Limited (KUKL) service areas in order to improve the water quality in urban rivers, tributaries, and ecosystems. The project will complement the past and ongoing Asian Development Bank (ADB) projects.<sup>2</sup> The resultant synergy is expected to lead to increased efficiencies, greater improvement in wastewater service delivery, and improved health and quality of life for inhabitants of Kathmandu Valley.

2. **Project components.** The project includes three major components; (i) rehabilitation/upgrading or construction of new wastewater treatment plants (WWTP) in already existing WWTP sites in different locations in the Kathmandu Valley; (ii) construction of interceptor sewers; and (iii) improvement in the wastewater network system (rehabilitation, replacement, laying of new sewers, etc.). The description of different components under this project is given below.

3. **Wastewater treatment plant (WWTP).** The works will include the rehabilitation/upgrading or construction of a new WWTP at Kodku (Patan), Sallaghari (Bhaktapur), Dhobighat (Kathmandu), Guheshowri (Kathmandu), and Gokarna (Kathmandu). The WWTP will be constructed or rehabilitated in the existing WWTP sites owned by the government.

4. **Interceptors.** The total length of the interceptor/collector will be approximately 101 km, excluding new interceptors to be laid along Bagmati River. The work includes the cleaning of existing interceptors and the laying of new ones in the RoW, as fixed by the High Powered Committee for Integrated Development of the Bagmati Civilization (HPCIDBC) on the banks of the following rivers of Kathmandu Valley:

- (a) Cleaning of existing interceptors (Kathmandu)
  - Left bank of Bishnumati from Dhalko to Teku
- (b) Laying of new interceptors
  - Kathmandu**
    - Right bank of Bagmati from Dhobighat WWTP to Manohara
    - Both banks of Bishnumati from Bagmati confluence to Mahadev Khola
    - Both banks of Dhobikhola from Bagmati confluence to Mahankal
    - Right bank of Manohara from Bagmati confluence
  - Lalitpur**

<sup>1</sup> The project is being prepared through PPTA 7936-NEP: Preparing the Kathmandu Valley Urban Environment Improvement Project, approved in December 2011. The work of PPTA started in March 2012 and draft final report was submitted in September 2012.

<sup>2</sup> Loan 1820-NEP (SF): Melamchi Water Supply Project was approved on 21 December 2000 and became effective 28 November 2001. Loans 2058/2059-NEP (SF): Kathmandu Valley Water Services Sector Development Program were approved 18 December 2003 and became effective 7 December 2004.

- Left bank of Bagmati from Khokana to Dhobighat WWTP
- Left bank of Bagmati from Dhobighat WWTP to Manohara confluence

#### **Bhaktapur**

- Left bank of Khasyangkhusung Khola unril Sallaghari WWTP
- Right bank of Hanumante from Sallaghari to Hanumanghat WWTP
- Left bank of Hanumante from Sallaghari WWTP

#### **Madhyapur Thimi**

- Left bank of Manohara from Bode Dhunchapakha to Hanumante confluence
- Right bank of Hanumante from Manohara confluence

### **B. Rehabilitation and expansion of sewerage network**

5. The total length of the sewer network including different activities in Kathmandu Metropolitan, Lalitpur Submetropolitan, and Bhaktapur and Lalitpur municipality, is about 500 km. The works include neighborhood sewer improvement and combined system separation, which includes: (i) rehabilitation of 126 km of sewer and replacement of about 40 km of old brick sewers and 13.5 km of lateral sewers; (ii) expansion of service coverage by laying about 151 km of new sewer; (iii) connecting new customers; (iv) separation of the combined sewer system into sanitary and storm water, wherever possible (initial assessment of about 109.5 km); and (v) cleaning of about 55.5 km of sewer blockage.

6. Construction work for the different project components in the area is expected to begin in mid-2014. It is envisaged that there will be short-term disruption of the business, causing loss of income from businesses and agricultural crops, while laying and upgrading sewerage pipelines in the core city areas and interceptors on the banks of rivers. To compensate for these losses, the provisions of relevant Government of Nepal laws and of ADB Policy on Social Safeguards will be adopted. These include the preparation of a resettlement plan (RP) providing data on impacts and affected families, and indicating in detail how the impacts will be compensated or rehabilitated. The summary of the RP in Nepali language will be available in KUKL, Project Implementation Directorate (PID) office for perusal.

7. Every effort will be made to minimize the likely temporary disturbance to the business, informal land users, and pedestrians and local community through good traffic management, planning, and implementation. The project will ensure that no person will be disadvantaged as a result of WWTP upgrading, laying of interceptors, and sewerage network upgrading and extension. Arrangements have been made to ensure that economically displaced people will be entitled to compensation for any loss of income and livelihood.

8. This booklet summarizing the provisions of the RP is given to all the families whose crops and income are affected by the project. The objective of this booklet is to inform them of the essential compensation and rehabilitation policy included in the RP, and of a number of basic issues relative to how the compensation and rehabilitation program of the project will operate.

## 1. Preparatory Actions for Identifying Loss of Income for Public Needs

9. The first step in this procedure is a field survey of the affected businesses and their loss of their income from full closure of the road during construction. Similarly, a field survey will be conducted in the interceptor laying areas and in the WWTP, where persons are affected and will lose income from their agriculture crops.

10. It is mandatory that the resettlement team interview every affected household in order to clarify the data on the present owner or land user. This is to ensure that all impacts are compensated, irrespective of title. The resettlement team will be handling you this brochure as they begin their work. It is important that you fully and honestly explain your income from business and the net value of crop production from the affected land, its uses, and information about your family. This is so that they can accurately assess the entitlements and compensation due you.

11. The project has declared a cut-off date of XXX 2013. If anybody encroaches into the project area, begins new activities, or builds structures, they will not be entitled to compensation or any other form of resettlement assistance.

## 2. Project Timetable

12. Project construction is likely to commence in XXX 2013. You might see people in the area beginning XXXX, however, because detailed technical surveys will need to be conducted for sewerage network design, rehabilitation, upgrading, cleaning, and replacement, interceptors construction, and the upgrading of existing wastewater treatment plant or construction of new ones. Once the construction contractor knows exactly where the route/alignment will go, the resettlement team of PID/design supervision consultant (DSC) will talk to each person who will be affected and lose their income from business or from crops, and explain what will happen in more details A brief timetable at present is as follows:

	Sewerage network extension	Laying of interceptors	New construction/upgrading of WWTP
Resettlement team develops resettlement plan			
Resettlement team comes to review resettlement plan			
Resettlement team comes to pay compensation due			
Construction commences			
Construction finishes			

## 3. Principles for Compensation and Rehabilitation

13. Principles for the compensation/rehabilitation of families affected by the project are as follows:

- (i) The cut-off date for identifying affected lands, families, and people is XXX 2013, when the resettlement survey will begin and any affected people along the proposed project routes will be informed.
- (ii) The loss of income from the business and loss of agricultural crops will be minimized as far as possible during construction.

- (iii) There will be temporary loss of income from business and crops. Compensation and assistance will be provided prior to any construction commencing.
- (iv) All affected persons (identified before the cut-off date) will receive compensation, even if they are without title or formal recognition. This includes temporary business/residential structures, informal agricultural activities, or temporary business use.
- (v) All construction over public RoW—footpaths, driveways, and roads—will be undertaken rapidly and without undue delay to avoid inconvenience to business and residences.
- (vi) A defined grievance procedure has been established. When a business owner or land user does not agree with a decision regarding compensation, it may not be exercised before the dispute is resolved judicially. In addition, any person who feels that they are in any way worse off can take their grievance to the highest level, at the cost of the project.
- (vii) Vulnerable groups, including female-headed households, the poor, disabled, or families with significant numbers of elderly members will receive additional support, assistance and compensation to ensure that they are not severely affected.

## **B. Compensation Entitlements**

14. All families residing in affected areas and holding affected assets or incomes before the eligibility cut-off date for the project, XXX 2013 (the date of the impact survey), will be entitled to compensation and/or rehabilitation for their losses. This provision includes all owners of affected trees/crops, structures, farmers and informal land users as detailed in Table 1 below.

15. Valuation of loss of income will be undertaken by PID/KUKL with the assistance of DSC and concerned ministries such as the Ministry of Agriculture and the Ministry of Urban Development.

**Table A11: Entitlement Matrix**

Type of Loss	Entitled Person	Description of Entitlement and Implementation Procedures	Remarks	Responsible Institution
<b>1. Crops and trees</b>				
1.1 Loss of crops and trees	<ul style="list-style-type: none"> <li>Titleholder</li> <li>Tenant</li> <li>Crops owned by encroachers/squatters/non-titleholders</li> </ul>	<ul style="list-style-type: none"> <li>Advance notice of 3 months to harvest their crops</li> <li>Compensation at net value of the next harvest where harvesting is not possible</li> <li>Compensation for loss of future harvest at net value of 3 times the harvest for seasonal crops</li> <li>Compensation for loss of fruit trees for average fruit production for next 15 years to be computed at current market value</li> <li>Compensation for loss of wood-trees at current market value of wood (timber or firewood, as the case may be)</li> </ul>	<ul style="list-style-type: none"> <li>Compensation for loss of agricultural crops at current market value of mature crops, based on average production</li> </ul>	PID, assisted by contractor and DSC
<b>2. Loss of houses and other structures</b>				
2.1 Permanent loss of house and other structures	<ul style="list-style-type: none"> <li>Titleholder</li> <li>Tenant</li> <li>Landless squatters/encroachers/non-titleholders</li> </ul>	<ul style="list-style-type: none"> <li>Compensation for full or partial loss of house at replacement cost</li> <li>Owners of affected structures will be allowed to take/reuse salvageable materials for rebuilding/rehabilitation of structures without deducting any cost</li> <li>In case of relocation, transfer allowance to cover shifting (transport plus loading/unloading) of household goods and materials will be paid based on actual cost or on current market price.</li> <li>Every displaced household will receive 3 months' rental equivalent cash assistance.</li> <li>Rights to salvage materials from structures</li> <li>Additional assistance for vulnerable households as described in section 4.3</li> </ul>	<ul style="list-style-type: none"> <li>Replacement cost of affected structures at market value will be determined by CDC.</li> </ul>	PID, assisted by contractor and DSC
<b>3. Community facilities and resources</b>				
3.1 Government and community structures, infrastructures	<ul style="list-style-type: none"> <li>Local community</li> <li>Local government</li> <li>Informal settlers/squatters on government land</li> </ul>	<ul style="list-style-type: none"> <li>Restoration of affected community buildings and structures to at least their original condition, or replacement in areas identified in consultation with affected communities and relevant authorities</li> </ul>	<ul style="list-style-type: none"> <li>Extreme care should be taken by the contractors to avoid damaging any properties during construction.</li> <li>Compensation for the losses</li> </ul>	PID, assisted by contractor and DSC

Type of Loss	Entitled Person	Description of Entitlement and Implementation Procedures	Remarks	Responsible Institution
		<ul style="list-style-type: none"> <li>Where damages do occur to government property as a result of construction works, the cost of restoring to at least their original condition will be the responsibility of the project.</li> </ul>	<p>will be borne by the project.</p> <ul style="list-style-type: none"> <li>Community structures include roads, inner roads, temples, foot paths/trails, culverts, and water points.</li> </ul>	
<p>3.2 Loss access to water supply, public wells, sewerage network/sanitation and sanitation facilities (public/private toilets, solid waste collection points, etc.)</p>	<p>Private persons and community that own the water points and sanitation</p>	<ul style="list-style-type: none"> <li>Advance announcement to the households prior to construction/flow disturbance and appointing of alternative source</li> <li>Immediate replacement and restoration of the affected facilities.</li> </ul>	<ul style="list-style-type: none"> <li>The time gap between the construction of new system and transfer from the old system should be minimized.</li> <li>Alternative sources of water and sanitation facilities should be made available during the construction period (such as supply through water tanker, mobile toilets, increased frequency of solid waste collection)</li> </ul>	<p>Contractor</p>
<p><b>4. Loss of income and livelihood</b></p>				
<p>4.1 Temporary loss of income from business</p>	<ul style="list-style-type: none"> <li>Titleholder</li> <li>Licensed and non-licensed vendors, and titled and nontitled households/tenant</li> </ul>	<ul style="list-style-type: none"> <li>Businesses are entitled to compensation for each day of disturbance on fully-closed roads. An income survey will serve as the cut-off date. All businesses identified in the project-impacted areas (sections ready for construction) on the cut-off date will be entitled to compensation for their lost income based on the tax records, or for shops not qualifying under these categories (hawkers, vendors etc.), there is the option of using the actual income based on survey followed by a verification of the income data based on comparable incomes in the project area.</li> </ul>	<ul style="list-style-type: none"> <li>An income survey prior to construction will serve as the cut-off date</li> <li>Ensure that the project will avail of the temporary relocation areas for the mobile vendors during civil works.</li> </ul>	<p>PID, assisted by contractor and DSC</p>
<p>4.2 Temporary loss of access to the commercial location</p>	<ul style="list-style-type: none"> <li>Titleholders and non-titleholders of business operations; licensed or</li> </ul>	<ul style="list-style-type: none"> <li>Mobile hawkers and vendors will be assisted by contractors in moving to alternative locations during the period of construction, or</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<p>PID, assisted by contractor and DSC</p>

Type of Loss	Entitled Person	Description of Entitlement and Implementation Procedures	Remarks	Responsible Institution
	non-licensed vendors, and titled and nontitled households/tenants	will be given cash provision of maximum 2 days of shifting allowance.		
4.3 Vulnerable persons	<ul style="list-style-type: none"> <li>Female-headed, elderly, disabled, and below poverty line HHs (the annual poverty line data is NRs. 40,933 per capita/year)</li> <li>Displaced household that lose more than 10% of total income</li> </ul>	<ul style="list-style-type: none"> <li>Cash assistance of 90 days at the Kathmandu wage rate of NRs. 250 per day</li> <li>One-time economic rehabilitation grants of NRs. 10,000 for restoring their livelihoods</li> <li>Vulnerable persons entitled to preferential employment under the project</li> </ul>	Vulnerable persons to be identified during income survey	PID, assisted by contractor and DSC
4.4 Livelihood rehabilitation assistance	<ul style="list-style-type: none"> <li>Permanently economically displaced persons/families who lose more than 10% of total income regardless of their status on the affected land</li> <li>Below poverty line HHs (the annual poverty line data is NRs. 40,933 per capita/year)</li> <li>Displaced households</li> </ul>	<ul style="list-style-type: none"> <li>Cash assistance for 90 days livelihood support at NRs. 250 per day</li> <li>Special assistance of NRs. 10,000 to the displaced vulnerable persons for restoring their livelihoods</li> <li>Employment during the construction activities if they desire</li> </ul>	<p>Economically displaced families in Gokarna WTP</p> <p>Permanently displaced vendors/hawkers to be determined after detailed design is finished</p> <p>Informal land users in the interceptor corridors</p>	PID, assisted by contractor and DSC

DSC = design and supervision consultants, PID = Project Implementation Directorate.

**C. Grievance and Redress Mechanism**

16. If you have any questions about the project, you can ask the DSC, resettlement specialist (RS), community awareness and participation consultant (CAPC), PID, Safeguard Unit, and any member of the project, since various team members will be visiting this area off and on throughout the project duration of approximately 5 years.

17. The project wants to ensure that you receive full compensation if you are affected by its different components. If you feel that you have not received full and fair compensation, you may complain to your local grievance redress committee. If your grievance is not addressed within 30 days, you may approach the Complaint Receiving Officer (CRO) at ADB Headquarters, the ADB Nepal Resident Mission (NRM), or the appropriate court of law for a resolution to your dispute.

**Contact details:**

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