

# Semi-Annual Environmental Monitoring Report

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Reporting Period: January to June 2015

IND: North Eastern Region Capital Cities  
Development Investment Program – Tranche 1  
Project City: Gangtok, Sikkim State

Prepared by State Investment Program Management and Implementation Unit for the Government of Sikkim and the Asian Development Bank.

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## ABBREVIATIONS

ADB	- Asian Development Bank
BTA	- Bridging Technical Assistance
CC	- Construction Contractor
DOC	- Date of Completion
DOS	- Date of Start
DSMC	- Design, Supervision and Management Consultant
EA	- Executing Agency
EARP	- Environmental Assessment & Review Procedure
EHS	- Environmental Health and Safety
EIA	- Environmental Impact Assessment
EO	- Environmental Officer
GLSR	- Ground Level Service Reservoir
Gol	- Government of India
GRC	- Grievance Redress Committee
IA	- Implementing Agency
IEE	- Initial Environmental Examination
IPCC	- Investment Program Coordination Cell
IPEC	- Investment Program Empowered Committee
MoUD	- Ministry of Urban Development
MFF	- Multi-tranche Financing Facility
MLD	- Million Liters per Day
Mn	- Million
NEA	- National Executing Agency
NERCCDIP	- North Eastern Region Capital Cities Development Investment Program
NSC	- National level steering committee
PAP	- Project Affected Person
PD	- Project Director
PMMC	- Program Management & Monitoring Consultants
PPTA	- Project Preparatory Technical Assistance
SEA	- State level Executing Agency
SR	- Service Reservoir
UD&HD	- Urban Development and Housing Department

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## **I. INTRODUCTION**

### **A. Background**

1. North Eastern Region Capital Cities Development Investment Program (NERCCDIP) is being undertaken for improvement of existing infrastructure, environmental quality and access to basic urban services of Gangtok Municipal Corporation area. The NERCCDIP's objective is to improve the urban environment and promote reforms for sustainable, efficient, and responsive urban service delivery. The various Program components are Water supply, Sewerage and Sanitation, and Municipal Solid Waste Management infrastructure.

2. With an overall objective of sustainable urban development, the NERCCDIP is being implemented in the five capital cities - Gangtok, Aizawl, Kohima, Gangtok and Shillong. NERCCDIP will be implemented over a six year period beginning in 2009, and is funded by a loan via the Multitranchise Financing Facility (MFF) of the Asian Development Bank (ADB).

3. In Gangtok, capital city of Sikkim, the Executing Agency (EA) for the program is the Urban Development and Housing Department (UD&HD) of the Government of Sikkim (GoS); and the Implementing Agency (IA) is the State-level Investment Program Management and Implementation Unit (SIPMIU), created within the UD&HD, specifically for the Investment Program implementation. At central level Investment Program Coordination Cell (IPCC) is established in MOUD. IPCC is responsible for overall management of the Investment Program and is supported by Program Management & Monitoring Consultants (PMMC).

4. The Water Supply subproject of Gangtok under Tranche-1 (Loan No. 2528 IND) was classified as Category B as per the ADB Environmental Policy, and accordingly IEE report was prepared during PPTA/BTA and was approved by the ADB. During the implementation stage, the IEE was updated and reapproved by the ADB.

5. Environmental Management Plan: An EMP which addresses the potential impacts and risks identified by the environmental assessment was included in the IEE report. The level of details and complexity of the EMP and the priority of the identified measures and actions are commensurate with the Project's impact and risks. The EMP was part of bidding and contract documents. The IEE has been disclosed in the ADB and SIPMIU websites.

### **B. Project Profile**

6. Tranche-1 of NERCCDIP in Gangtok was focused on water supply improvements. This subproject covered the following:

- (i) Construction of Distribution Network of 17.75 km length for Burtuk Zone-1, 10.57km length for Burtuk Zone-2 and 15.87km length for Chandmari Zone
- (ii) Construction of Pump House and installation of pumps of capacity 1930 lpm for a head of 101m, at Selep Water Treatment Plant
- (iii) Construction of New R.C.C Reservoir of 11.50 LL capacity located at All India Radio (AIR) Transmission Station Road for Burtuk Zone-1 and Chandmari Zone,
- (iv) Supply and Installation of Electromagnetic Flow meters at outlet of Pump house at Selep, outlet of storage reservoir for Burtuk Zone-1 and at outlet of storage reservoir for Chandmari Zone.

7. All the civil works of Tranche-1 subproject were completed by December 2013. Details of the project activities under Tranche-1 (Loan No. 2528 IND) as of June 2015 are presented in the following Table.

**Table 1: Sub Project Details under Tranche-1 (Loan No. 2528 IND)**

Sl. No	Name of Work	Location	Description	Changes if any from approved scope
1.	<b>ADB/SIPMIU/01 of 2011:</b> Supplying and Laying distribution system in Burtuk and Chandmari, construction of pump house, installing pump sets and allied works in Gangtok, Sikkim	Burtuk Zone 1 Burtuk Zone 2 Chandmari Zone GLSR at Bulbuley Pump house at Selep	<p>(i) Distribution system for Burtuk Zone 1:</p> <ul style="list-style-type: none"> <li>• 63mm -3.52 km (HDPE)</li> <li>• 90mm– 2.16 km (HDPE)</li> <li>• 110mm: 0.19 km (HDPE)</li> <li>• 80mm: 0.94 m (DI)</li> <li>• 100mm: 0.61 km (DI)</li> <li>• 150mm: 3.31 km</li> <li>200mm: 4.55 km</li> </ul> <p>(ii) Distribution system for Burtuk Zone 2:</p> <ul style="list-style-type: none"> <li>• 63mm -3.26 km (HDPE)</li> <li>• 90mm– 0.63 km (HDPE)</li> <li>• 80mm: 0.89 m (DI)</li> <li>• 100mm: 1.65 km (DI)</li> <li>• 150mm: 1.14 km (DI)</li> <li>• 200mm: 1.38 km (DI)</li> </ul> <p>(iii) Distribution system for Chandmari Zone:</p> <ul style="list-style-type: none"> <li>• 63mm -3.50 km (HDPE)</li> <li>• 90mm– 0.76 km (HDPE)</li> <li>• 80mm: 0.62 m (DI)</li> <li>• 100mm: 1.9 km (DI)</li> <li>• 150mm: 3.86 km (DI)</li> <li>• 200mm: 0.39 km (DI)</li> <li>• 250mm: 2.15 km (DI)</li> </ul> <p>(iv) Pumping main for Burtuk Zone I and Chandmari Area</p> <ul style="list-style-type: none"> <li>• 200mm: 1.18 km (DI)</li> </ul> <p>(v) Ground level service reservoir (1,150 KL RCC Tank)</p> <p>(v) Pump house</p> <ul style="list-style-type: none"> <li>• Centrifugal pumps (50 HP)</li> </ul> <p>(vi) Electromagnetic full bore meters</p>	Nil

DI- Ductile Iron; HDPE – High Density Poly Ethylene; GLSR - Ground Level Service Reservoir; HP – Horse Power; KL – Kiloliter; km – kilometer; RCC – Reinforced Cement Concrete

8. Civil works under Tranche-1 commenced on December 6, 2011 and the estimated duration of works was 18 months. All the civil works were completed by December 2013.

9. The Semi Annual Environmental Monitoring Report presents the status of sub project implementation, details of compliance with environmental regulations of the Government and policies of ADB, details of compliance with environmental loan covenants, details of complaints received and their redress and the status of compliance with various aspects of EMP as stated in the IEE reports.

10. Monitoring of compliance with EMP is a continuous activity carried out by the DSMC and SIPMIU. Guidelines on general construction EHS measures to be followed / implemented by the Contractor were issued to the Contractor. A reporting format to be filled by the Supervisory staff of DSMC on a monthly basis on compliance with EMP by the Contractor was also implemented. Since all the civil works were completed by December 2013, these formats were not filled during the current reporting period. This report presents the compliance status of the Tranche 1 subproject to the Environmental Management Plan and other legal requirements as on June 2015, and is prepared in compliance with the ADB Policies.

## **II. ENVIRONMENTAL ASSESSMENT AND REVIEW PROCEDURE**

### **A. Environmental Legal Requirements**

11. Following Regulations are currently in force in India that deals with environmental issues that could apply to infrastructure development. Acts and Rules related to monuments and archeological sites are also listed herein.

- (i) The Water (Prevention and Control of Pollution) Act, 1974, amended 1988
  - The Water (Prevention and Control of Pollution) Rules, 1975
  - The Water (Prevention and Control of Pollution) Cess Rules, 1971
- (ii) The Air (Prevention and Control of Pollution) Act 1981, amended 1987
  - The Air (Prevention and Control of Pollution) Rules, 1982
- (iii) The Environment (Protection) Act, 1986, amended in 1991 and including the following Rules/Notification issued under this Act
  - The Environment (Protection) Rules, 1986, including amendments
  - The Municipal Solid Wastes (Management and Handling) Rules, 2000
  - The Hazardous Wastes (Management and Handling) Rules, 1989
  - Eco Sensitive Zone Notification, Doon Valley, 1989
  - The Bio-Medical Waste (Management and Handling) Rules, 1998
  - Noise Pollution (Regulation and Control) Rules, 2000,
  - Wild Life (Protection) Amendment Act, 2002
  - Environmental Impact Assessment Notification, 2006
  - Environmental Standards of Central Pollution Control Board (CPCB)
- (iv) The Indian Wildlife (Protection) Act, 1972, amended 1993
  - The Wildlife (Protection) Rules, 1995
- (v) The Indian Forest Act, 1927
- (vi) Forest (Conservation) Act, 1980, amended 1988
  - Forest (Conservation) Rules, 1981 amended 1992 and 2003
  - Guidelines for Diversion of Forest Lands for Non-Forest Purpose under the Forest (Conservation) Act, 1980

- (vii) Ancient Monuments and Archaeological Sites and Remains Act 1958
- Ancient Monuments and Archaeological Sites and Remains Rules 1959
  - Government of India Notification of 1992 under the above-stated Rules

## B. Compliance with Environmental Regulations

12. The GoI, EIA Notification of 2006 sets out the requirement for Environmental Assessment in India. The water supply improvement subproject under Tranche-1 does not fall under the ambit of the EIA Notification, and therefore does not require environmental clearance.

13. Since the Ground Level Service Reservoir (GLSR) at Bulbuley was constructed in forest land, forest clearance under the Forest (Conservation) Act, 1980 was applicable to the water supply subproject under Tranche-1. Tree cutting permission from the State Forest department was also required for this sub project. These clearances were obtained.

14. Following Table shows the regulatory requirements of subprojects/components under Tranche-1 and the present status of compliance. Copies of Forest Clearance and Tree Cutting permission for GLSR construction were presented in the semi Annual Environmental Monitoring Report for the period, July - December 2013.

**Table 2: Present Status of Environment & Forest and Other Clearances**

Town	Work (Package No.)	Applicable Legislation / Type of Clearance	Clearance given by and date	Conditions	Remarks / Action needed
Gangtok	Storage reservoir (GLSR) for Burtuk and Chandmari wards (ADB/ SIPMIU/01 of 2011)	The GLSR site is located on a forest land; transfer of land from Forest Department to Implementing Agency and permission to construct GLSR was required under the Forest (Conservation) Act, 1980	Director of Forests – Himalayan Zoological Park vide letter dated 30.01.12	There were sixteen conditions	All the conditions have been complied and the details were presented in the Semi Annual Environmental Monitoring Report for the period, July – December 2013.
		Tree cutting permission from the Forest Department was required under the Sikkim Private and other Non Forest land Tree Felling Rules, 2006	Divisional Forest Officer, East Territorial Division vide letter dated 14.03.12	Nil	Nil

GLSR – Ground Level Service Reservoir

### C. Compliance of Environmental Loan Covenants

15. Table 3 shows the environmental safeguard related loan covenants and their compliance status in implementation. All the covenants were complied during implementation.

16. Tranche-1 subproject was classified as Category B as per the ADB Environmental Policy, and accordingly IEE report was prepared during PPTA/BTA and was approved by the ADB. During this implementation stage, the IEE was updated and reapproved by the ADB.

**Table 3: Compliance of Environmental Loan Covenants**

S. No	Project Specific Covenants (Environmental)	Status / Issues
1	<p>GOI and the States will ensure that the design, construction, operation and implementation of all sub-project facilities is carried out in accordance with the environmental assessment and review procedures and Initial Environmental Examinations (IEEs) for core sub-components agreed upon between the Government and ADB, and complies with the Government's environmental laws and regulations and ADB's Environment Policy (2002).</p> <p>Any adverse environmental impacts arising from the construction, operation and implementation of sub-component facilities will be minimized by implementing the environmental mitigation and management measures, and other recommendations specified in environmental assessment reports (e.g., IEEs). The Government will ensure environmental requirements will be incorporated in bidding documents and civil works contracts. . Issuance of bid documents will be made after review and clearance of IEE/EIA by ADB and SEIAA or MOEF.</p> <p>GOI will prepare and submit annually to ADB an environmental monitoring report that describes progress in implementation of the EMP and EARP and issues encountered and measures adopted; and compliance with the relevant assurances and loan covenants</p>	<p>IEE approved by ADB, disclosed in public, and included in bid document and contract.</p> <p>Clearances obtained as per applicable regulations.</p> <p>Semi-annual environmental monitoring report is being submitted to ADB</p>

ADB – Asian Development Bank; EARP – Environmental Assessment & Review Procedures; EIA – Environmental Impact Assessment; IEE – Initial Environmental Examination; MOEF – Ministry of Environment and Forest; SEIAA – State Environmental Impact Assessment Authority

### D. Environmental Organization and Management

17. The main agencies involved in managing and implementing the subproject are:

- (i) **Ministry of Urban Development (MOUD)** - The national-level Executing Agency (NEA) for the Investment Program;
- (ii) **Investment Program Coordination Cell (IPCC)** – It is established in MOUD. IPCC is responsible for overall management of the Investment Program in the city and they include social/environmental safeguard specialists whose tasks include monitoring Program implementation and reviewing and screening the subprojects submitted by State in accordance with subproject selection criteria, including the environmental provisions;



- (iii) **State Investment Program Management and Implementation Unit (SIPMIU) –** It was established in SEA and headed by a Program Director (PD). SIPMIU will oversee the Program's environment and resettlement planning. This includes the preparation of all documentation needed for decision-making, contracting, and supervision of work and providing progress-monitoring information to the PD;

The SIPMIU shall comprise of a Safeguards and Social Cell staffed with an Environmental Officer (EO). The EO shall be responsible for implementing the environmental safeguard provisions in the project including (i) ensuring environmental criteria for subproject selection in the EARP are followed, (ii) ensuring mitigation requirements are in contractor bidding documents, and (iii) liaising with various Central and State government agencies on compliance matters. The SIPMIU will appoint and manage Construction Contractors (CC) to build elements of the infrastructure who are required to submit Environmental Implementation Plans (EIPs) for SIPMIU approval

- (iv) **Design, Supervision and Management Consultant (DSMC) -** The SIPMIU is assisted by the DSMC, who is responsible for design the infrastructure, manage tendering of contracts, and supervise the construction process;

An Environmental Specialist (ES) in the DSMC is responsible for addressing the environmental issues in the project components during design and implementation. The ES will ensure all mitigation requirements are in contractor bidding documents and EIPs, and will supervise the effective implementation of environmental provisions during construction. In addition, the ES will assist the SIPMIU on the procurement needs and other project implementation aspects and shall play a central role in ensuring capacity building on environmental management of the SIPMIU, Contractor and Line Departments through capacity development support and training.

18. A grievance redress mechanism has been established in SIPMIU. Minor grievances of affected persons (APs) will first be brought to the attention of the implementing NGO / Resettlement Officer (RO) of SIPMIU. Grievances not redressed within 30 days by the NGO or RO will be brought to the grievance redress committee (GRC), established in SIPMIU. Major grievances will be directly brought to the GRC. The GRC was constituted vide UD&HD notification dated 25.01.2012. The GRC notification for Gangtok was presented as Annexure in the previous Semi Annual Environmental Monitoring Report. The GRC comprise the Investment Program Director, Officer of Land Revenue Department, Project Manager – SIPMIU, Resettlement Officer of Social / Resettlement Unit – SIPMIU, Representative of Implementing NGO, and representative (male / female) from APs. The GRCs will continue to function throughout the project duration. The GRC will meet every month, determine the merit of each grievance, and resolve grievances within a month of receiving the complaint; failing which the grievance will be addressed by the Investment Program Empowered Committee (IPEC). The IPEC would meet as often as necessary at the request of the Project Director. Grievance not redressed by the IPEC will be referred to the appropriate courts of law. All costs involved in resolving grievances will be borne by the SIPMIU. The SIPMIU through the DSMC will keep records of all grievances received including: contact details of complainant, date that the complaint was received, nature of grievance, agreed corrective actions and the date these were effected, and final outcome. No grievances were received during the reporting period.

### **III. EMP COMPLIANCE STATUS**

19. This section presents the compliance status of Environmental Management and Monitoring Plans of tranche-1 subproject under implementation.

20. Under this subproject, all civil works have been completed. No environmental quality monitoring was conducted during the construction period. The Contractor had not prepared any Environmental Implementation Plan. He was following the EMP, which is part of the IEE and Contract document. In addition to that, guidelines on general construction EHS measures to be followed / implemented by the Contractor were issued to the Contractor.

21. A reporting format to be filled by the Supervisory staff of DSMC on a monthly basis on compliance with EMP by the Contractor was implemented. Since all the civil works were completed by December 2013, these formats were not filled during the current reporting period. Details of compliance of EMP and OH&S norms by the Contractor were presented in the Semi Annual Environmental Monitoring Report for the period, July – December 2013. Health and safety training was given to the Contractor's Supervisors by the Environmental Expert of ADB on 13.11.2013. Instruction was given to the Contractor to conduct training to all his personnel.

#### **IV. OBSERVATIONS, RECOMMENDATIONS AND ACTIONS TAKEN**

22. As presented in this report, all the civil works of tranche-1 of this Investment Program was completed by December 2013 and the subproject was implemented in compliance with the loan covenants, subproject selection criteria and overall EARF. However, the Contractor was not complying with most of the occupational health and safety measures and community health and safety measures suggested in the EMP. Strict instructions were given to the Contractor to comply with the mitigation measures suggested in the EMP. Training on health, safety and environment was given to the Contractor by the Environmental Expert of ADB on 13.11.2013. No ambient air quality monitoring and water quality monitoring was conducted by the contractor during the construction period. As per the observations / comments received on February 27, 2015 from ADB on the Semi Annual Environmental Monitoring Report for the period, January – June 2014, no action has to be taken for the Tranche-1 report except disclosing the report to affected people. Accordingly, English version of the previous Semi Annual Environmental Monitoring Report has been disclosed in the SIPMIU website, <http://sipmiugangtok.org/reports.html>. Translation of the report to Nepalese, the local language is being carried out and it will also be published in the website.