

EXECUTIVE SUMMARY OF ENVIRONMENTAL MANAGEMENT PLAN
OF
COMPOSITE WATER SUPPLY SCHEME FOR SUSTAINABILITY AND QUALITY
IN JORHAT, JORHAT CENTRAL AND JORHAT NORTH WEST DEVELOPMENT
BLOCKS OF JORHAT DISTRICT

1. "The Composite Water Supply Scheme for Sustainability and Quality in Jorhat, Jorhat Central and Jorhat North West Development Block of Jorhat District" in Assam (India), hereby referred to as the Jorhat project, is one of the large multi-village scheme (LMVS) subproject of the World Bank assisted Rural Water Supply & Sanitation Project for Low Income States, which was renamed as the Neer Nirmal Pariyojana (NNP). The program was also simultaneously undertaken in the state of Bihar, Jharkhand and Uttar Pradesh. The Project Development Objectives (PDO) of the NNP program is improved piped water supply and sanitation services for selected rural communities in the target States through decentralized delivery systems and increasing the capacity of the participating States to respond promptly and effectively to an eligible crisis or emergency.
2. Altogether, seven large Multi-village schemes (subprojects) were proposed for execution in Hailakandi, Kamrup (Metro), Sivasagar, Bongaigaon, Sonitpur, Morigoan including this project in Jorhat district under NNP in Assam along with sanitation services and solid liquid waste management (SLWM) schemes in the project command areas.
3. Government of Assam's Public Health Engineering Department (PHED) is the executing agency. The State Project Management Unit (SPMU), Neer Nirmal Pariyojana, Assam (NNP, Assam), headed by the Project Director is the Implementing Agency and is in-charge of overall execution and technical supervision, monitoring and financial control of all activities under the program. The District Project Management Units (DPMUs) in the project districts are headed by District Project Managers. The DPMUs are responsible for the day-day activities of project implementation in the fields and are under the administrative control of SPMU, Assam. Grievance Redressal facilities is provided in the official website: <https://phennp.assam.gov.in> of SPMU, NNP, Assam. The Executive Engineer (PHE), Jorhat Division is the District Project Manager of DPMU, Jorhat for the Jorhat project.
4. The SPMU will have Safeguards Compliance and Monitoring unit, managed by the Environment and Social & Communication Specialist to ensure mitigation of negative environmental and social impacts due to the subprojects, if any. Similarly, dedicated officers and specialists are entrusted at the DPMU level. The Environment Specialist is responsible for implementation and monitoring of the subproject Environmental Management Plan (EMP) during the implementation and O&M phases with reviews by the World Bank.

5. World Bank requires the consideration of environmental issues in all aspect of its operation as described in the World Bank's Environmental Safeguards policy for all the subprojects.
6. The Jorhat project (subproject) will provide piped water supply at the rate of 70 lpcd 24x7 to cover the complete area of Jorhat, Jorhat Central and Jorhat North West Development Blocks of Jorhat district. A total of 1045 habitations in 163 villages of 33 Gaon Panchayats of these development blocks shall benefit from the project. The project district suffers from water quality problems of excess iron, arsenic and fluoride. The number of households with piped water supply coverage is also low. The project will have an intermediate capacity of 28.2 MLD in 2025 and ultimate design capacity of 38.6 MLD in 2045. Household water meters for volumetric rate tariffs will be provided for effective demand management and water conservation. The infrastructure improvement will be supported by awareness campaigns to promote water conservation, sustainability and cost recovery objectives. The mighty Brahmaputra river will be the source of raw water of the project.
7. The major components of the project, includes 1) Raw water intakes with Floating Barge and other associated works, 2) Raw and Clear water pumping / feeder mains and other associated works, 3) Water Treatment Plants and other associated works, 4) 42 Elevated Service reservoirs, 5) Installation of DG Sets and other associated works, 6) Zonal Distribution systems and other associated works.
8. The project is categorized as an **Environmental Category -2** project based on study of Environmental Data Sheet (EDS) and Categorization of impacts. Such projects will have medium adverse environmental impacts and an Environmental Management Plan (EMP) is mandatory. EMP prepared for this subproject, assesses environmental impacts and provides mitigation and monitoring measures to ensure no significant impacts as a result of the project. Construction works will be completed in 36 months.
9. The project sites are mostly PHED owned lands and Govt. owned lands for which land transfer documents have been obtained. These identified sites avoid forests and other eco-sensitive areas. The felling of trees, mostly wild plants and shrubs for site clearances are limited and few in numbers. These are required mostly in the Intake sites and along pipeline routes. Treated water will be pumped to the ESRs and then flow by gravity to the different distribution zones. Raw and clear water pumping mains, feeder mains, zonal distribution systems will be laid along the right of way (ROW) of existing roads and highways to minimize the felling of trees. Pipelines will also be laid across railway crossings, along and across National Highways, APWD roads. Necessary permissions as required will be taken from the competent authorities.
10. Regardless of these actions, there will still be impacts on the environment when the infrastructure is built and when it is operating. During the construction phase, adverse impacts mainly arises because of invasive nature of trenching and

excavations, legality of the sources of construction materials used like sand, coarse stone aggregates, bricks, etc., movements of heavy vehicles and construction equipment, particularly near to residential areas, loading and unloading of construction materials at different construction sites, emissions of DG Gensets, construction waste generations and nature of its disposal, health issues and insanitary conditions in labour camps, safety and precautionary issues in construction sites, traffic snarls and noise pollution issues during laying of pipelines along roads with high traffic, etc.

11. Once the project is operating, most of the facilities / units will operate with routine maintenance, which should not affect the environment. Leaks in pipelines will need to be repaired from time to time, but environmental impacts will be much less than those during the construction phase, as the works will be infrequent, affecting small areas only. However, precautionary and safety issues will always be present during disinfection of filtered water by gaseous chlorine and its storage, running of DG sets by petroleum fuels and its storage as both are hazardous in nature. Safe disposal of effluent sludge and regular monitoring of quality of treated water and maintaining sanitary, hygienic environment always near all project components, sites are also important issues.

12. The EMP proposed and developed for the project will include (i) mitigation measures for significant environmental impacts during implementation, (ii) effective environmental monitoring program during O & M phase and the responsible entities for mitigation, monitoring and reporting, (iii) public consultation as and when required and information disclosure; and (iv) effective grievance redress mechanism. The EMP is a dynamic document and will be up-dated as and when required to include new environmental issues cropping up later during construction and O&M phases.

13. The most noticeable long-term benefits due to the project are (i) increases access to treated water supply, (ii) reduction in time of collecting water and (iii) reduction in vulnerability to water borne diseases.

14. Therefore, the Jorhat project (subproject) is unlikely to cause significant adverse impacts. The potential adverse impacts that are associated with design, construction, and during operation & maintenance phases can be taken care of without difficulty through proper engineering design and incorporation or application of recommended mitigation measures and procedures of the EMP.