SFG1690 V6

Environmental and Social Assessment with Management Plan

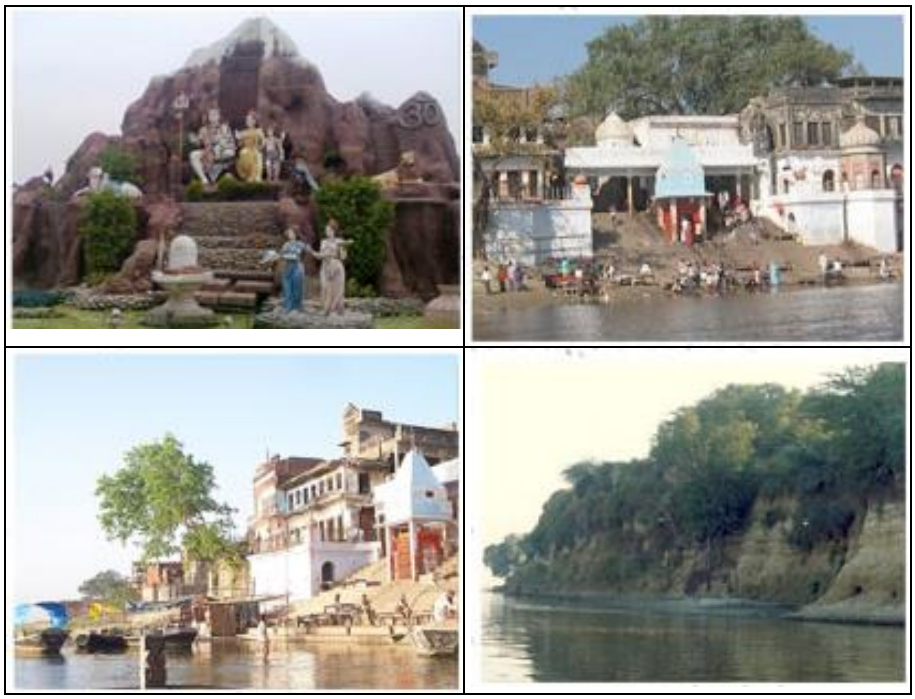
Sewerage Work at

Bithoor Town, Kanpur Nagar (U.P.)

Under

National Ganga River Basin Authority (NGRBA)

Ministry of Water Resources, River Development & Ganga Rejuvenation, New Delhi



Clockwise from top: Valmiki Ashram, Brahmavart Ghat, Patthar Ghat, Dhruva Teela

Ganga Pollution Control Unit, Uttar Pradesh Jal Nigam

June, 2015

Table of Contents

List of Tables

List of Figures

1.0 EXECUTIVE SUMMARY

The Government of India has given Ganga the status of a National River and has constituted the National Ganga River Basin Authority (NGRBA) on 20th February 2009, for the comprehensive management of the river. The main objective of the NGRBA is to ensure effective abatement of pollution and conservation of the river Ganga by adopting a river basin approach for comprehensive planning and management. In regards to this initiative, under pollution abatement programme NGRBA proposes sewerage works for Bithoor Town, Kanpur.

Bithoor town located about 25 km northwest from Kanpur Nagar is situated at the left bank of river Ganga. It is situated between latitude 26o 45' north and longitude 800 10' East. Bithoor is one of the important religious places of Uttar Pradesh and is famous as Bavan Ghaton ki Nagari (city of 52 Ghats). The major problem of pollution in River Ganga in the Bithoor town is due to direct discharge of wastewater. There is no sewerage system in the town. In addition to this, Bithoor receives a large number of pilgrims, who take holy bath and offer prayers in large religious congregations resulting in substantial pollution. Within the goal of NGRBA Mission, it is envisaged that no untreated municipal or industrial waste will be allowed to flow into river Ganga or its tributary by the year 2020. Thus, in order to keep river Ganga clean, it has been proposed to provide a full coverage of piped sewerage system and treatment of the entire sewage by the sewage treatment plant based on waste stabilisation pond technology for the town.

As per the Environmental and Social Management Framework (NGRBA, 2011), the implementation of such river pollution mitigation projects under the NGRBP is anticipated to encounter a variety of environmental and social issues/problems. Therefore the study of environment and social sector is required for analyzing the impacts of proposed project and suggesting the management plans to handle any negative impacts. The Environmental and Social Assessment with Management Plan (ESAMP) report was prepared by Ganga Pollution Control Unit, Uttar Pradesh Jal Nigam and the report was vetted through Department of Civil Engineering, Jamia Millia Islamia, New Delhi.

The social status of the residing community. Information and data presented in this section is based on field surveys, stake-holder interaction/consultation and secondary data collection which majorly include the Detailed Project Report (DPR) of proposed sewerage work, report by Nagar Nigam, Water/ Air/ Noise quality monitoring report, City census data and others. The information on the baseline environmental conditions forms the basis to analyse the probable impacts of the proposed project vis-à-vis the present background environmental quality of the core study area.

The baseline environmental monitoring for noise quality was conducted through primary survey to at strategic locations considering various project components like construction of STP, SPS, laying of sewer line etc. The baseline noise levels helps in understanding the existing noise level so that necessary monitoring mechanism and safeguard measures can be formulated for the possible impacts from the project on noise quality during the construction and operation stages of the project.

1.1. Portfolio of Investments under NGRBA

The portfolio of investments under the NGRBA program includes the following:

- Sewerage and sanitation systems/sewage treatment plants (new/up gradation)
- Solid Waste Management
- Industrial Pollution Control Initiatives
- River front Management initiatives

These investments in the first phase of program is spread across several cities and/or towns within Ganga main stem states of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal and may be extended to entire Ganga river basin comprising of 11 states in the later phases.

1.2. Sewerage Project for Bithoor Town of Kanpur

The Bithoor town of Kanpur nagar is situated on the left bank of river Ganga. In Bithoor town the major problem of pollution of River Ganga is due to the direct discharge of wastewater being generated by the habitation which flows into the open drains, at present contributing about 1.3 MLD flow. Moreover, Bithoor being one of important Hindu Pilgrimage received a large number of visitors round the year. The Ganga river water quality trend as conducted by Central Pollution Control Board (CPCB) under "Monitoring of Indian Aquatic Resources" programme find that water quality at Bithoor town does not comply with the CPCB standard; moreover, there is an increasing trend of BOD and Feacal Coliform load. There are seven open drains which directly discharge the waste water to the river Ganga. Within the goal of NGRBA Mission, it is envisaged that no untreated municipal or industrial waste will be allowed to flow into river Ganga or its tributary by the year 2020. Under the aegis of NGRBA mission, the UPJN has proposed to cover the entire town by laying sewerage piped network and treatment of entire sewage through STP before discharge into the river Ganga. The total length of the proposed sewerage network is about 32 Kms.

The natural ridge along the eastern side of the town, which is in parallel to the direction of flow of Ganga, divides the town topography into two Zones. Two pumping station has been proposed for Zone-I and Zone-II which shall transport the sewage to the STP through the rising mains. The site earmarked for constructing the proposed sewage treatment plant of 2.6 MLD capacity is in the upstream side near Dhruv Teela of the town.

Considering the density of population, absence of proper sewerage network, proximity to the Ganga river and the point of confluence, it becomes more important to provide sewerage and treatment infrastructure for the area. The major components of the proposed project include:

- 32 km long sewerage network including all required trunk/ branch/ lateral sewer.
- Construction of STP of capacity 2.6 MLD based on waste stabilization pond technology.
- Two sewage pumping stations one of capacity 2.10 MLD to cater to the load of Zone I and another of capacity 0.47 MLD to cater to the load of Zone II.
- Operation and maintenance.

As per DPR, the total cost for the sewerage lines and sewage treatment plant will be Rs. 60.0 crore.

1.3. Policy, Legal and Administrative Framework

The following laws and regulations are application to the environmental aspects of the proposed project:

- Policy and regulatory framework of Govt. of India;
- Environmental Policy of the respective State Governments;
- Legislations applicable to the construction activities;
- Environment and Social Management Framework of NGRBA

The Project is seeking financing from World Bank and hence their environmental and social safeguards are also applicable to this Project.

1.4. Requirement of Environmental Clearance as per EIA notification 14th September 2006:

The proposed project is construction of sewerage system. Since construction of sewage treatment plant does not attract EIA clearance the project will not require Environmental clearance from MoEF/SEIAA.

Other Applicable Legislation:

- The Air (Prevention and Control of Pollution) Act, 1981 and Water Prevention and Control of (Pollution) act, 1974 will be applicable;
- The Noise Pollution (Regulation and Control) Rules, 2000 will be applicable;
- The Ancient Monuments and Archaeological Sites and Remains Act, 1958 is not applicable as such
- Contract Labour (Regulation & Abolition) Act, 1970 shall be applicable
- Minimum Wages Act, 1948 shall be applicable
- Child Labour (Prohibition and Regulation) Act, 2000 shall be applicable
- Forest (Conservation) Act, 1980 is not applicable
- The project also does not fall within 10 km radius of a national park or wildlife sanctuary area.

The methodology adopted for the environmental and social assessment included secondary data analysis, carrying out scoping, survey of the host population and discussion with key stakeholders including government officials and local residents. Based on these outcomes, a screening activity was conducted with the help of the screening checklist format provided in Environmental and Social Management Framework of NGRBA. Thereafter, environmental and social impacts were identified and assessed and a mitigation plan was developed based on the aforementioned.

1.5. Baseline Environmental Condition

As a part of the study, baseline condition was established through physic-chemical and biological sampling in and around the study area. Social study was undertaken to understand the cultural and social status of the residing community. The baseline information forms the basis to analyse the probable impacts of the proposed project vis-à-vis the present background environmental quality of the core study area. In environmental scenario it reflects the status of environmental entities like status of climate, geological features, air quality, water quality, waste management and existing green cover in the study area.

In general 5 km from the STP boundary as well as the area crossing the sewerage line has been considered as Project Influence Area. Within this project influence area the mostly consists of built up and open. There is no such natural sensitive area observed within the project influence area. However man made sensitive locations like temples along the Ghats, some old buildings and few schools are observed.

Meteorology:

The climate in Bithoor town is characterized by hot summer and dryness except in the south west monsoon season. The climate can be divided broadly into four seasons. The period from March to the mid of June is the summer season which is followed by the south-west monsoon, which lasts till the end of September, October and first half of November from the post -monsoon or transition period. The cold season spreads from about the middle of November to February. The climate is of a tropical nature and shade temperature varies from

20°C to 48° C. Rainy season extends from June to September, with the period of maximum rainfall normally occurring during the months of July and August.

Topography: Bithoor Town, Kanpur is located on the south bank of the Ganga River. A characteristic of the geography of Bithoor Town is its proximity to Ganga rivers.

Geology: The area lies in the Ganga basin which is formed of alluvium of the early quaternary period. There is no hard or consolidated rock exposures are encountered. The main constituents (sand, silt and clay) of alluvium occur in variable proportions in different sections.

Physiography and Soil: The project area falls under active alluvial plain and the soil of the Bithoor Town is characterized by Calcareous alluvial (Ustochrepts Haplaquepts) i.e. it is slightly alkaline. This shows that the alluvium deposit in this region is old alluvium deposit.

Seismicity: The area falls under Seismic Zone-IV as per seismic map of geographical survey of India.

Air Quality: There is no industrial activity. Central Pollution Control Board has two air quality monitoring stations in Bithoor Town, the air quality was found to comply with the CPCB residential air quality standards.

Water Quality: The river Ganga water quality was found to be polluted in terms of E. coli and feacal coliform and do not satisfy the 'bathing water quality standard as per CPCB water quality critera.

Flora and Fauna: Common trees include Tectona Grandis, Dalbergia Sissoo, Terminalia arjuna (arjun), Acacia arabica, Madhuca indica (mahua).

The fauna reported in the area are mainly avifauna (highest diversity) followed by mammals and reptiles. The commonly reported avifauna in the study area are Common crow, Myna, Eagle, Sparrow, Babbler, Pigeon, Cattle Egrets, Red Vented bulbul, Drongo, Sparrow, Indian Roller etc. Migratory birds are also seen to visit the place.

1.6. Socio Economic Profile

Bithoor is a small town with population as per census 2001, is 9652 people with 1652 nos. of households. Town is located very close to Kanpur City therefore most of the gainful employment is in jobs and industries.

Cultural and Heritage Resources: There is no important cultural and heritage resource notified by Archaeological Survey of India around the project influence area but Town is famous for its Ghats

The ESAMP of the project was based on screening checklist method that identifies the impact level of various activities during the construction and operation phases. Various environmental factors such as the presence of eco-sensitive region in and around the project area, clearance of tree cover, improper storage of excavation spoils, flooding of adjacent areas, elevated noise and dust levels, damage to existing utilities were taken as checklist criteria for impact assessment of the project. Social criteria included factors such as requirement for land acquisition, displacement of tribals, loss of livelihood and gender issues.

The present project do not involve any major issues of land acquisition and has an overall positive impact by tapping the wastewater which was earlier polluting the river Ganga. Based on the criteria-wise screening activity and the categorization of potential sub-projects of the NGRBP, the present project of sewerage work in Bithoor Town of, Kanpur which involves 32 km of sewer lines, 2 pumping stations and an STP falls under low impact category.

1.7. Public Consultation

Local people are being adequately consulted as part of the project preparation. Focused group discussions as well as informal discussion with local people as well as project implementation authorities were conducted at different points of time as part of the ESAMP report of the project. Most of the people have welcome the project and their views and suggestion are incorporated in the project and EMP.

While in baseline status of social section, it brings out the status of demographic composition of the population, general land-use feature of the wards and also details of the social survey outcomes at various consultations held in different wards of the sewerage district.

Although there would not be any permanent negative or adverse environmental or social impacts, but will have temporary impacts on water quality, air quality (impact on health), traffic blockages, safety hazards for pedestrians, possible damage to private property, possible interruption in commercial activity, and accidental breakage of other public infrastructure.

Social assessment clearly defines that no issue of land acquisition and livelihood loss is foreseen in the project. Hence, no compensation provision is required. However, if any loss of livelihood would be noticed during implementation of this project, then the affected party will be compensated according to Environment and Social Management Framework (ESMF) guidelines set by the NGRBA. Moreover, some inconvenience caused to the local public has been reported along with the local mitigation plan. One strong suggestion which was identified from consultations was execution of construction work within a scheduled time frame with provision of prior notice to residents, shop-owners. A public grievance mechanism (as prescribed by ESMF of NGRBA) is to be followed. There is a clear mention and highlighting if the social development issues and outcomes in this report. A section chalking out institutional mechanism, capacity building requirements and monitoring and evaluation mechanism is also present.

Phase	Component	Key temporary Impacts	Key Mitigation Measures
Environmental			
Construction Phase	Environmental sensitive areas	There are no environmental sensitive areas in the proposed project area. Further the small residential parks and road side trees, will not be affected, since the sewers will not pass through these areas.	-
	Air quality	Probable increase in the dust levels (RSPM and SPM), during the construction may temporary deteriorate the air quality, causing health problems of respiratory ailments, leading cause for eye, ear, nose and throat infections and related discomfort.	Sprinkling of water at regular intervals to control dust especially places where soil is stockpiled and provision of top cover for vehicles involved in disposal of the excess soil material

Phase	Component	Key temporary Impacts	Key Mitigation Measures
	Noise levels	Increased noise levels due to construction activities like plying of construction vehicles, pumping machines, machinery such as cranes, riveting machines, hammering etc, may cause general disturbances to the human habitations like sleeplessness in case construction activity is extended into the night hours.	Providing curtains or sound barriers (polysheets/ sheets) all around the construction site. Proper maintenance of construction equipment and vehicles
	Water resources	Contamination of nearby water bodies via storm drains (during rainfall) by un-managed construction related material like suspended particles, pollutants like oil, grease, cement etc, There may also be temporary blockage of drains due to unmanaged material and construction debris	Suggestion to ensure proper handling and disposing off construction wastes at identified refusal sites. Proper stock piling of excavated soil and not in any storm drains or any other areas where water would naturally accumulate causing flooding.
Operation Phase	Noise and air quality	No air and noise problem from sewer line as piped network will be implemented. Improper handling and irregular maintenance of operating machines at STP may lead to increased noise and odour nuisance during operation activity causing disturbance to surrounding human habitation	Proper handling and regular maintenance of operating machines at STP including pumps, generators, air diffusers, etc.
	Water environment	Water contamination and temporary flooding due to leakages/ overflows from the sewer lines may cause unhygienic condition	Regular monitoring of sewer line and STP. Suggestion to ensure appropriate repair work in less time period.
Social			
Construction	Livelihood	No impact, as there will be no impact on livelihood of any permanent shop-owners, licensed kiosks	But suggested if noticed during construction, then should be compensated according to ESMF
	Land acquisition	No impact, as no fresh land is required for any construction	-

Phase	Component	Key temporary Impacts	Key Mitigation Measures
	Inconvenience to public	There will be some minor inconveniences to the public due to construction like access to their premises, etc.	Public notice to be circulated, construction should be completed in the given time, debris should be cleared in time
	Health issues- due to dust, noise pollution	During construction dust and noise generated, can cause nuisance to people especially elderly and children, but impact is very limited.	Use of acoustics and water sprinkling

These temporary impacts can be mitigated with appropriate mitigation plans, which have been suggested as well, along with monitoring and evaluation of future projects. EMP cost as given below

Cost information of EMP

Item	Location	Season	Year	Total no. of samples	Unit Cost	Total Cost
Environment Monitoring during Construction Stage						
Air quality Monitoring	2	3		12	7,000.00	84,000.00
Metrological data	1	3		3	5,000.00	15,000.00
Water Quality Monitoring	3	4		24	6,500.00	156,000.00
Noise/vibration	2	3		12	3,000.00	36,000.00
Soil analysis	2	3		12	6,000.00	72,000.00
				Sub total		**3,63,000.**
Environment Monitoring Cost (Operation Stage)						
Air quality Monitoring	2	2		12	7,000.00	84,000.00
Metrological data	1	1		3	5,000.00	15,000.00
Water Quality Monitoring	4	4		48	6,500.00	312,000.00
Noise/vibration	2	2		12	3,000.00	36,000.00
Sludge Monitoring at STP sites	1	4		12	6,500.00	78,000.00
Soil analysis	2	3		18	6,500.00	117,000.00
					Sub-Total	**642000.00**
Control of Dust Generation						**200000.00**
Control of noise and vibrations						**288,000.00**
Prevention of safety hazards to workers						**28,000.00**
Prevention of health hazards due to absence of sanitation and solid waste management facility in labour camps.						
(a)Sanitation						**800,000.00**
(b)Water Supply						**200,000.00**
(c)Dust Bins						**100,000.00**
Use of PPE and PPC					Lump Sum	50,000.00
Environmental mitigation measures including development- plantation around					Lump sum	200,000.00
Training and Awareness programme					Lump sum	12,00,000.00

					Sub Total	1,966,000
					TOTAL	**4071000.00**

However, keeping in view, the temporary disruptions and impacts, it was concluded that the larger environmental value of the project greatly outweighs them. The project is expected to benefit the Bithoor Town, Kanpur City, as the wastewater that currently flows untreated into the Ganga river will be captured, treated and the remainder of the treated effluent will be allowed to flow into the river.

2.0 INTRODUCTION

The river Ganga is one of the prime rivers of India and is declared as the National River of India. The river Ganga has significant economic, environmental and cultural value in India. It flows east through the Gangetic plains of Northern India into the country of Bangladesh. It is the second largest river in the World by discharge. The Ganga Basin which is the largest river basin of the country houses about 40% population of India. The Ganges basin houses over 400 million people and a population density of about 390 inhabitants per square km. The river has immense religious significance and considered as the holy river of the Hindus. Historically too the river is important as many important cities and capitals have been located along its banks. The major cities along the River Ganges are Haridwar, Moradabad, Rampur, Allahabad, Kanpur, Bithoor Town, Kanpur, Varanasi and Rajshahi. The Ganges forms its Delta at the Bay of Bengal. The Ganges travels a distance of 2500 km beginning from the point of origin till she ultimately merges into the ocean.

Despite its importance, extreme pollution stress from increasing population and a large no of floating population pose a great threat to the biodiversity and environmental sustainability of the Ganga, with detrimental effects on both the quantity and quality of its flows. During the course of its journey from the hills to the sea, municipal sewage from large urban centres, trade effluents from industries and polluting waste from several other non-point sources are discharged into the river are the main cause of its pollution.

The Ministry of Environment and Forests (MoEF), GoI has been implementing an ambitious programme of pollution abatement of rivers in India. It started in 1985 with the Ganga Action Plan (GAP). The main objective of GAP was to improve the water quality of Ganga to 'bathing class' standard by preventing the pollution load reaching the river.

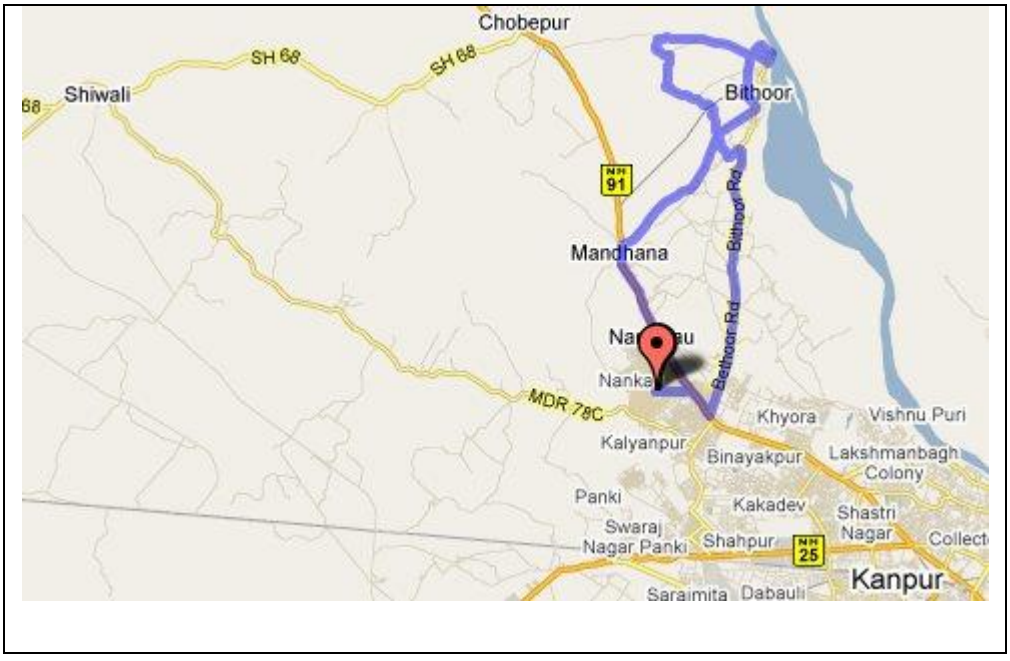


Figure 2-1 *Map showing location of Bithoor town*

To give a fresh impetus to pollution abatement of River Ganga and its tributaries, a major initiative under the National Ganga River Basin Authority (NGRBA) has been started. The current programmes include treatment of municipal from large urban centres before municipal sewage find its way into the river. Following approaches have been adopted for effective implementation of river-Ganga-cleanup-activities:

- Establishing a basin-level, multi-sectoral framework for addressing pollution in the river (including national/state policies and river basin management institutions);
- Making relevant institutions operational and effective (e.g. with the capacity to plan, implement and manage investments and enforce regulations); and,
- Implementing a phased program of prioritized infrastructure investments (with emphasis on sustainable operations and mobilization of community support)

2.1. The Ganga River Basin Project

The Government of India (GoI) constituted the National Ganga River Basin Authority (NGRBA), on 20th February 2009, for the comprehensive management of the river. The NGRBA is a planning, financing, monitoring and coordinating body of the centre and the states. The Authority has both regulatory and developmental functions. The NGRBA will adopt a river-basin approach and has been given a multi-sector mandate to address both water quantity and quality aspects. The Authority will take measures for effective abatement of pollution and conservation of the river Ganga in keeping with sustainable development needs which includes:

- Development of a river basin management plan;
- Regulation of activities aimed at prevention, control and abatement of pollution in Ganga to maintain its water quality, and to take measures relevant to river ecology and management in the Ganga basin states;
- Maintenance of minimum ecological flows in the river Ganga;
- Measures necessary for planning, financing and execution of programmes for abatement of pollution in the river Ganga including augmentation of sewerage infrastructure, catchment area treatment, protection of flood plains, creating public awareness;
- Collection, analysis and dissemination of information relating to environmental pollution in the river Ganga;
- Investigations and research regarding problems of environmental pollution and conservation of the river Ganga;
- Promotion of water conservation practices including recycling and reuse, rain water harvesting, and decentralised sewage treatment systems;
- Monitoring and review of the implementation of various programmes or activities taken up for prevention, control and abatement of pollution in the river Ganga;
- Issue directions under section 5 of the Environment (Protection) Act, 1986 for the purpose of exercising and performing these functions and for achievement of its objectives.

Building on the high-level dialogue with GoI on Ganga, The World Bank has been formally requested to provide long-term support to NGRBA, through several phases of substantive financing and knowledge support. The initial emphasis of the specific investments under the first project will focus on main stem of Ganga flowing through five basin states of Bihar, Jharkhand, Uttar Pradesh, Uttarakhand and West Bengal. Specifically, pollution abatement programs in cities on the banks of these States which would include a range of municipal investments such as sewer networks, waste water treatment facilities, industrial pollution control measures, river front management and solid waste disposal in the river through improved management in these cities and other required supportive improvements. This is expected to be enabled through several phases of substantive financing and knowledge support. The first project of such several phases of support aims at:

i) Establishing and operationalizing central and state level NGRBA institutions capable of planning and implementing a multi sectoral river water quality improvement program and;

ii) Reducing pollution loads into the river through selected investments.

The activities financed under this component are grouped under the following sub-components:

(a) Sub-component A: NGRBA Operationalization and Program Management

(b) Sub-component B: Technical Assistance for ULB Service Providers

(c) Sub-component C: Technical Assistance for Environmental Regulators

a. Sub Component A: NGRBA Operationalization and Program Management

This sub-component is aimed at supporting the nascent operational institutions established for implementing the NGRBA program at the central and state levels on a full time basis. Key NGRBA program management activities included under this sub-component are described below :

(a) Enhancing Ganga Knowledge Resources

(b) Communications and Public Participation

(c) Innovative Pilots

(d) Program of Action for Carbon Credits

b. Sub component B: Technical Assistance for ULB Service Provider

The long term operation and maintenance of the NGRBA-funded assets is the responsibility of the ULBs and local service providers, and this sub-component is aimed at providing assistance that can gradually enable them to take on their role.

c. Sub-component C: Technical Assistance for Environmental Regulator

This sub-component is aimed at addressing the key constraints faced by the CPCB and SPCBs related to their functions regarding the Ganga. The subcomponent will support:

(a) Capacity building of the CPCB and SPCBs

(b) Up-gradation of Ganga Water Quality Monitoring System

2.2. Purpose and Scope of EIA

The present project will be implemented by NGRBA and for that assistance has been sought from World Bank. According to screening study and as per NGRBA's framework the project falls under high impact category and hence an EIA study is required along with specific EMP.

The scope of the EIA study has been finalized based upon the project screening and categorization and is given below:

- Project screening and scoping;
- Project categorization considering the OP: 4.01 (Environment Assessment);
- Assessment of existing sewage disposal and proposed improvement mechanism for restricting sewage and other trade effluent disposal;

- Detailed assessment of natural habitats in and around the project site;
- Assessment of air and noise quality in the viscinity of the project area ;
- Assessment of water quality along the river stretch;
- Preparation of study area maps for an immediate vicinity of 5 km from of the project site.
- Assessment of physical and cultural Resources along the project stretch and assessment of potential beneficial and adverse impact on such resources from the project;

2.3. Structure of the Report

This report deals with the Environment Assessment with Management Plan for the Sewerage works for Bithoor Town, Kanpur. It rolls out the baseline status of the existing sewage situation and analyzes the situation if the proposed project is implemented, with its possible implications and to negate those implications management plan is advised which is as per the Environment and Social Management Framework. The present EIA report has been arranged in following chapters:

Introduction This chapter describes briefly describes the project, Portfolios of Investments, the ESMF and need of EIA study
Project Description: Project description is discussed pertaining to the proposed sewerage project Bithoor Town of Kanpur. This chapter provides insight into the various component of the proposed project.
Policy, Legal and Administrative Framework This Chapter captures the policy and legal framework of government of India as well the policies of World Bank that are applicable to the project.
Description of Environment Description of the baseline environmental condition including the baseline conditions of river water quality, terrestrial and aquatic ecology, air, noise and soil quality are briefly described in this chapter.
Analysis of Alternative This chapter describes the alternatives considered in the project towards improving the project.
Public Consultation This chapter briefly describes the consultation measures carried out with the various sections of common public in and around the project area and the suggestions provided under the consultation are documented.
Environmental Impacts and Mitigation Measures This chapter provides details of the potential impacts from the project on various environmental factors and mitigation measures proposed for the construction and operation stage
Environmental Management Plan This chapter envisages the requirement of Environmental Management Plan including the monitoring and supervision framework for the implementation of EMP along with the budget for implementing EMP
Conclusion and Recommendation This chapter provides the conclusion about the implementation of the project and provides necessary recommendations

3.0 PROJECT DESCRIPTION

3.1. About the City

Bithoor Town, Kanpur city lies on the 26°45' North latitude and 80° 10' East longitude. Bithoor is a very small town of Uttar Pradesh having population of around 11000 people situated on the bank of Ganga on Kanpur-Kannauj Road, about 25 Kms upstream from the main city, Kanpur. It is very famous religious centre in the Northern India. According to Hindu Mythology it is the birth place of God Ram's son Lav and Kush the son of God Ram were born in Bithoor. The historic town of bithoor, once famous by the Bavan Ghaton ki Nagari, (city of 52 Ghats) is left with only 29 Ghats. Out of 29 Ghats, most beautiful is the Patthar Ghat built by the Raja Tikaitrai. The other important Ghats of Bithoor is the Kalvari Ghat, Other notable sites at Bithoor are the Tripura Sundri temple,Shivanda Ashram, Gyaneshwar Mahadev temple, Janki temple, Pantha Devi temple and Sri Gayatri Dham. Bithoor receives tourists and pilgrims in huge numbers, who take holy bath and offer prayers in large religious congregations.

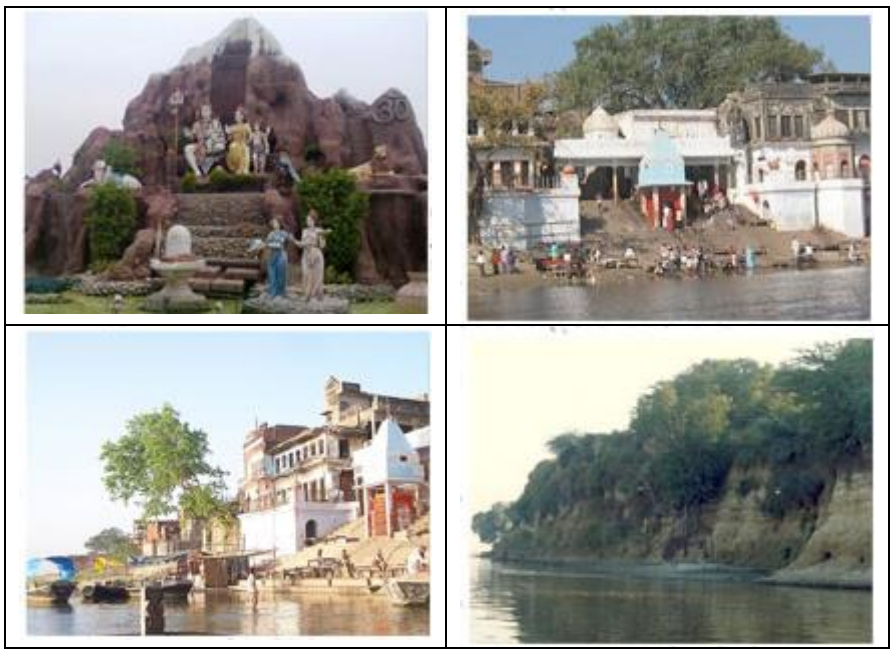


Figure 3-1: *Clockwise from top: Valmiki Ashram, Brahmavart Ghat, Patthar Ghat, Dhruva Teela*

3.2. NECESSITY OF SEWERAGE SYSTEM:-

Bithoor is an important town from the perspective of prevention of pollution from point and non-point sources within Ganga basin as it is situated on the banks of Ganga river (Figure 3.2). Ganga river has been identified as one of the most polluted river from Kanpur to Varanasi. Bithoor is the town of Kanpur district and contributes the pollution load which is mainly from Municipal sewage on river Ganga. Bithoor receives tourists and pilgrims in huge numbers, who take holy bath and offer prayers in large religious congregations.

At present the town has no sewerage system. With the present population (2011) of 11,181 sewage discharge has been estimated to stands about 1.3 MLD, open drains are acting as sewers during the dry weather flow. Whereas, in the monsoon, the same infrastructure is serving the dual purpose i.e. as sewers and drains. Thus making the situation worst for the local public. It is noteworthy that although some people have constructed small septic tanks in their houses, at most of the places/ localities, all households are discharging their sewage/ sullage through open drains into the nallas which flow towards the Ganga river. Untreated discharge of wastewater of the town is contributing pollution in the river Ganga affecting the

river ecology, aquatic life and poor aesthetics. The situation is further aggravated as all the solid waste is also being disposed off into these public drains. Due to the encroachment and dumping of solid waste causes silt deposition, the solid waste does not only obstruct the flow but due to the putricible organic matter present in sewage/ waste (which is biodegradable), causes septic condition resulting in foul odour and fly nuisance making the surrounding highly unhygienic. In addition to the same, the solid waste settles into the drains causing siltation which further have reduced the carrying capacity of drains. Water logging in open/ low lying area is a common phenomenon in the city.

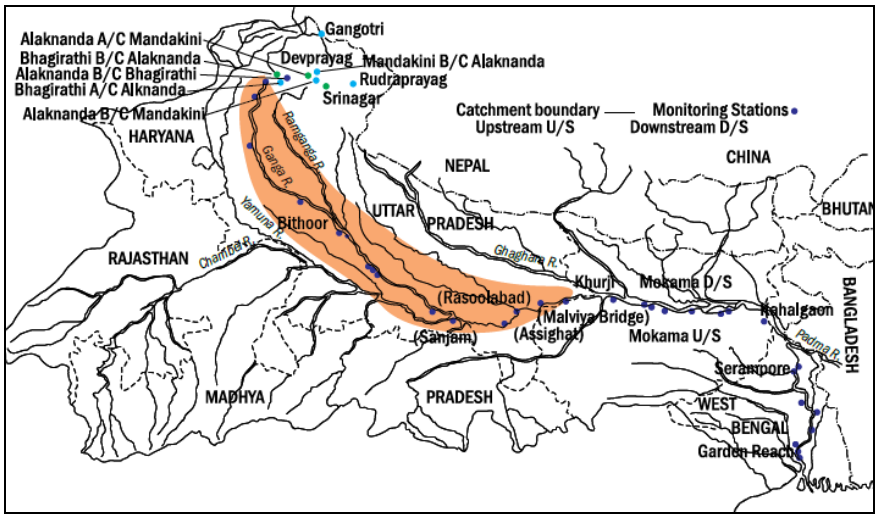
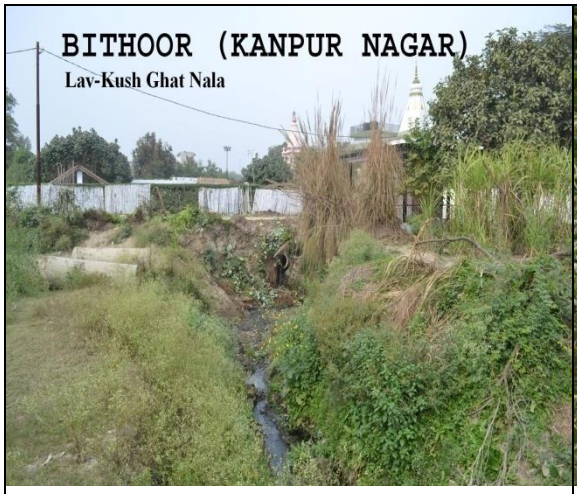


Figure 3-2 *Map showing course of Ganga through Bithoor town*

National Mission clean Ganga envisages that no untreated municipal or industrial effluent shall be allowed to flow into river Ganga or its tributary by the year 2020. Thus in order to keep our holy river Ganga clean, a full fledged sewerage system for the town Bithoor is utmost nexessary.

3.3. Existing Sewerage Facilities in Bithoor Town, Kanpur City

With the population of around 11000 it is one of the most popular religious centres in the Northern India. There exists a network of small and medium size drains in the town, basically to cater the storm water and domestic waste water. The whole drainage meet to River Ganga through seen nos of Nalas namely Kalvari Ghat Nala, Lakshman Ghat Nala ,Bramhavat Nala, Goodhari Ghat Nala, Peshwa Nala, Bhunna Nala and Luvkush Nala. Presently the whole waste water discharge of city is flowing into the river through these Nalas. Major Nalas carrying sewage to river Ganga in Bithoor town is shown in the Figure 3.3.



Lav- Kush Ghat Nala

Kalwari Ghat Nala

Brahamvat Ghat Nala

Bhumni Nala

Figure 3-3 *Photographs showing condition of Sewerage System of Bithoor Town*

3.4. Necessity of this project

Bithoor Town, Kanpur city is experiencing growth with corresponding increase in economic and commercial activities. There is influx of population both floating and fixed. The fixed load is due to existing settlements in the town and floating load is due to its being a popular religious place in North India many people visiting the town.

The Ganga river water quality trend as conducted by Central Pollution Control Board (CPCB) under “Monitoring of Indian Aquatic Resources” programme find that water quality at Bithoor town does not comply with the CPCB standard; moreover, there is an increasing trend of BOD and Feacal Coliform load (figure 3-4 & 3.5).

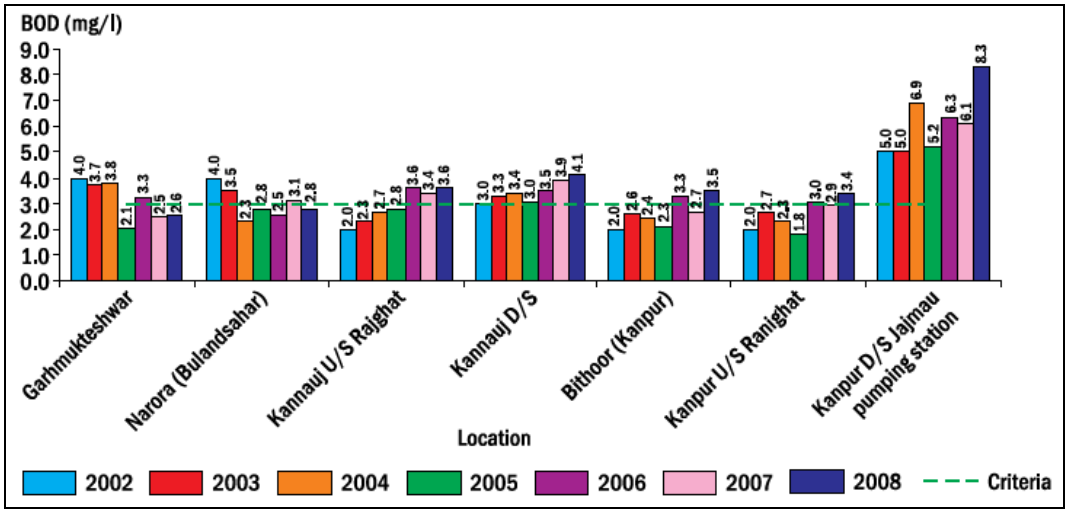


Figure 3-4 *Increasing trend of BOD in the River Ganaga (source: Ganga Water Quality Trend, CPCB, 2009).*

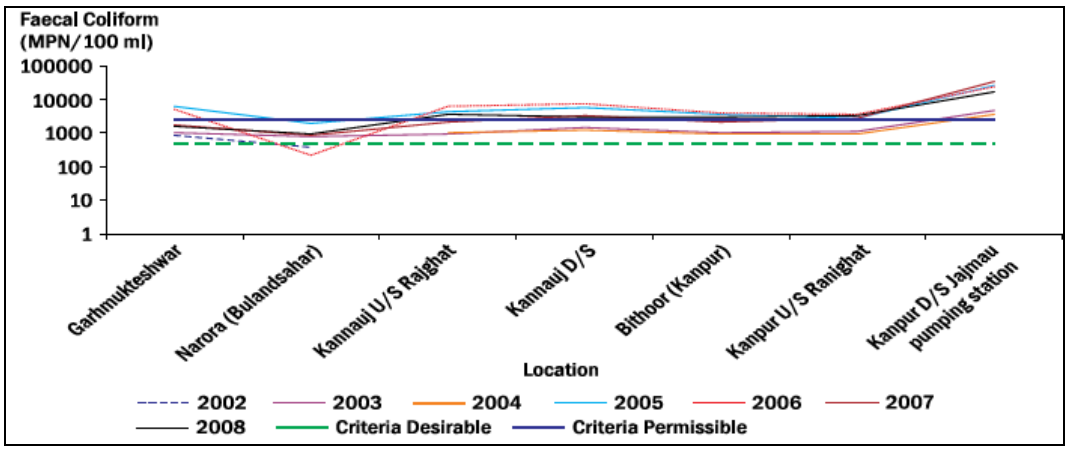


Figure 3-5 *Trend in faecal coliform in the River Ganaga (source: Ganga Water Quality Trend, CPCB, 2009).*

For these reasons, it is imperative that an efficient and effective sewage collection, treatment and disposal system be quickly installed to allow Bithoor Town, Kanpur to meet the health and sanitation needs of the population and to prevent the direct discharge of sewage in the river Ganga.

The population growth experienced so far is expected to continue strongly over the next couple of decades adding more pressure to the existing infrastructure. Absence of timely action may result in contamination of existing surface and underground sources of water supply for the urban population of Bithoor Town, Kanpur city. With growing population combined with improved living standards, it is necessary for any city to provide an efficient Infrastructure service be in the field of water supply, sewerage & sanitation and storm water drainage.

The census data on decadal population since year 1951 is presented in Table 3-11.

Table 3-1 Decadal Population Data for Bithoor Town, Kanpur City

Sr. No.	Census year	Population	Average Decadal Growth Rate(%)
1	1951	2577	
2	1961	2667	90
3	1971	3769	1102
4	1981	5486	1717
5	1991	7444	1953
6	2001	9652	2208
7	2011	11181	1529
Total			**8604**
Average			**1434**

Source: Census India website, 2011

As per the estimate made in DPR the final population growth will be around 24000 by the year 2035. Projection of population and thereby sewage generation estimation are as under –

Table 3-2 Summary of the Population Projection and Sewage pollution Load of Bithoor Town, Kanpur City.

Planning Period	Year	Population	Sewage Generation
Initial Stage	2020	17900	2.0 MLD
Mid – Stage	2035	24000	2.60 MLD
Ultimate Stage	2050	32300	3.60 MLD

3.5. Location of Proposed Sewerage Project

Bithoor Town, Kanpur city lies on the 26°45’ North latitude and 80° 10’ East longitude. The natural ridge along the eastern side of the town, which is in parallel to the direction of flow of Ganga, divides the town topography into two Zones. For planning purpose, the entire town has been divided into two zones viz. Zone –I, & Zone-II. Zone-I east side of the main ring road goes to Dhrv Tila while zone-II fall on the western side of the road mainly consist of wards Dhrv Nagar & Laxmi bai nagar . The town comprises of 10 wards out of which 8 nos. wards are included in Zone-I and the remaining wards (2Nos.) are included in Zone-II. The Design population of Zone-I & Zone-II have been worked out as 14670 & 3280 respectively in base year 2020. The ward wise estimated population of Bithoor town has been depicted in the table below:

Table 3-3 Wardwise estimated population of Bithoor Town, Kanpur City.

S.N.	Name of Wards	Population			
		2011	2020	2035	2050
1	Peshwa nagar	1085	1740	2330	3150
2	Tatya tope nagar	1194	1910	2550	3430
3	Mainawati nagar	888	1420	1900	2560
4	Brmha nagar	1477	2360	3180	4260
5	Dhruva nagar	1057	1690	2270	3080
6	Maharshi Balmiki nagar	1156	1850	2480	3350
7	Laxmi bai nagar	960	1540	2080	2770
8	Subedar nagar	1226	1960	2620	3550
9	Lavkush nagar	1117	1790	2400	3210
10	Azimulla nagar	1021	1640	2190	2940
Total		**11181**	**17900**	**24000**	**32300**

Two pumping station has been proposed for Zone-I and Zone-II which shall transport the sewage to the STP through the rising mains. In zone-I sewage pumping station of 2.10 MLD near the Ghoodha Ghat Nala and in zone-II sewage pumping station of 0.47 MLD at Kalvari Ghat Nala is proposed. Two land parcel of 900 sq.m. each has been provided free of cost by the Chairman, Town area of Bithoor for the construction of the pumping stations. In two places in zone-I, small capacity Lift Station pumping plant has also been proposed i.e. one near the Laxman Ghat Nala and other near the Peswa Nala.

The site earmarked for constructing the proposed sewage treatment plant of 2.6 MLD capacity is in the upstream side near Dhruv Teela of the town. The google image showing the location of the STP and surrounding area has been shown in Figure 3.6. the location of land proposed for IPS and STP is shown in figure 3.7.

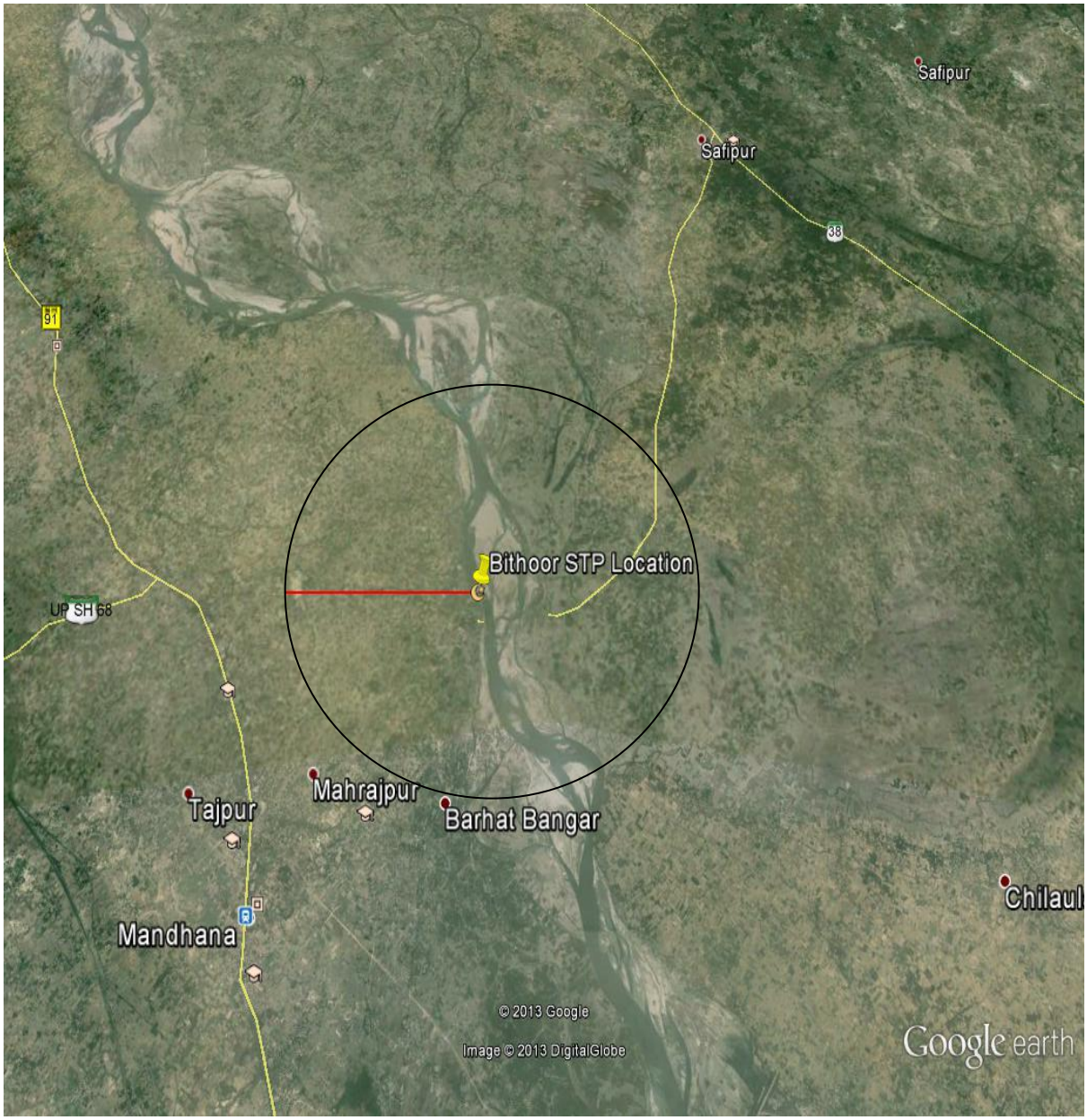


Figure 3-6 *Google image showing Bithoor STP Area*

Land of STP – The Following photographs of STP land identified is free of encroachment and other encumbrances and is not impacting any household.

Figure 3-7 *Images showing land proposed for IPS and STP*

The land identified for the STP is free from any encroachment & encumbrances , and since it is barren land therefore no livelihood impact is expected.

3.6. Proposed Sewerage System

The Detailed project Report is being prepared by Uttar Pradesh Jal Nigam through an individual consultanat. The proposed sewerage network in Bithoor as shown in

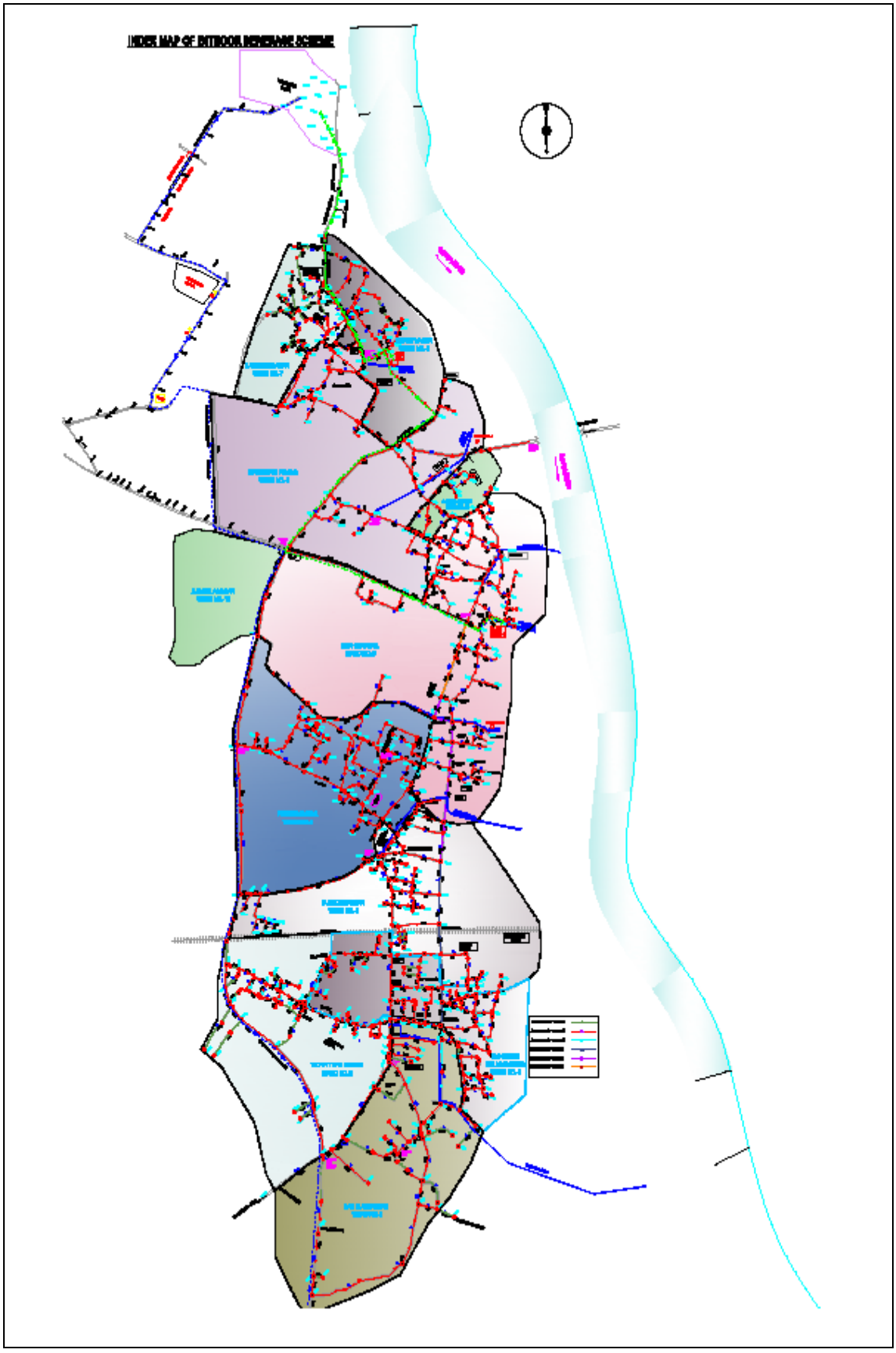


Figure 3-8 ***Proposed sewerage network of Bithoor STP Area***

3.6.1 Sewer System

(i) Sewer Pipes: It is proposed to lay approximately 32 km long sewer network for Bithoor Town of the city. The length of sewer for Zone- I will be approx. 26.24 km whereas for Zone- II the length of sewer system will be approx. 5.1 km. Size wise details are given in the Table 3.4 below.

Table 3-4 Size wise details of the sewers proposed for sewerage work in Bithoor Town.

Sewerage	Sewers Dia (mm)	Length (m)
Zone I	150mm dia	2503 m
	200 mm dia	21128 m
	250 mm dia	1306 m
	300mm dia	497 m
	400 mm dia	543 m
	450 mm dia	263 m
Total Length		**26240 m**
Zone II	150mm dia	1877 m
	200 mm dia	3228 m
Total Length		**5105 m**

(ii) Sewage Pumping Stations: The Intermediate Sewage Pumping Stations (IPSs) are proposed at two locations. In Zone-I sewage pumping station of 2.10 mld for design year has been provided near the Goodhari Ghat Nala, while in zone-II sewage pumping station of 0.47 mld for design year has been provided near the Kalvari Ghat Nala. The land of 900 sqm has been provided by the chairmain of town area of Bithoor for pumping station on both the locations. In zone-I a old railway line goes to Bramvatra Railway Station, sewage pipe line has cross the railway track by trenchless method and drop in a manhole after crossing railway line.

(a) **2.10 mld S.P.S. at Goodhari Ghat Nala**: 3 pumps (2W +1S) pumps of 40HP, 34.0m head for peak flow have been proposed. 2No. (1W+1S) pumps of 25HP, 23mts head for average flow have been proposed. D.G. set of 100 KVA, has been proposed as power back up.

(b) **0.47 mld S.P.S. at Kalwari Ghat**: 3 pumps of capacity 500 lpm, 12mts head have been proposed. Two pumps shall run during peak hour and one pump shall be standby. D.G. set of 30KVA, 0.4KV has been proposed as power back up.

Location of Sewage pumping stations have been shown in figure 3.8 whereas calculation details for sewage pumping stations have been shown in Table 3.5 & 3.6 respectively.

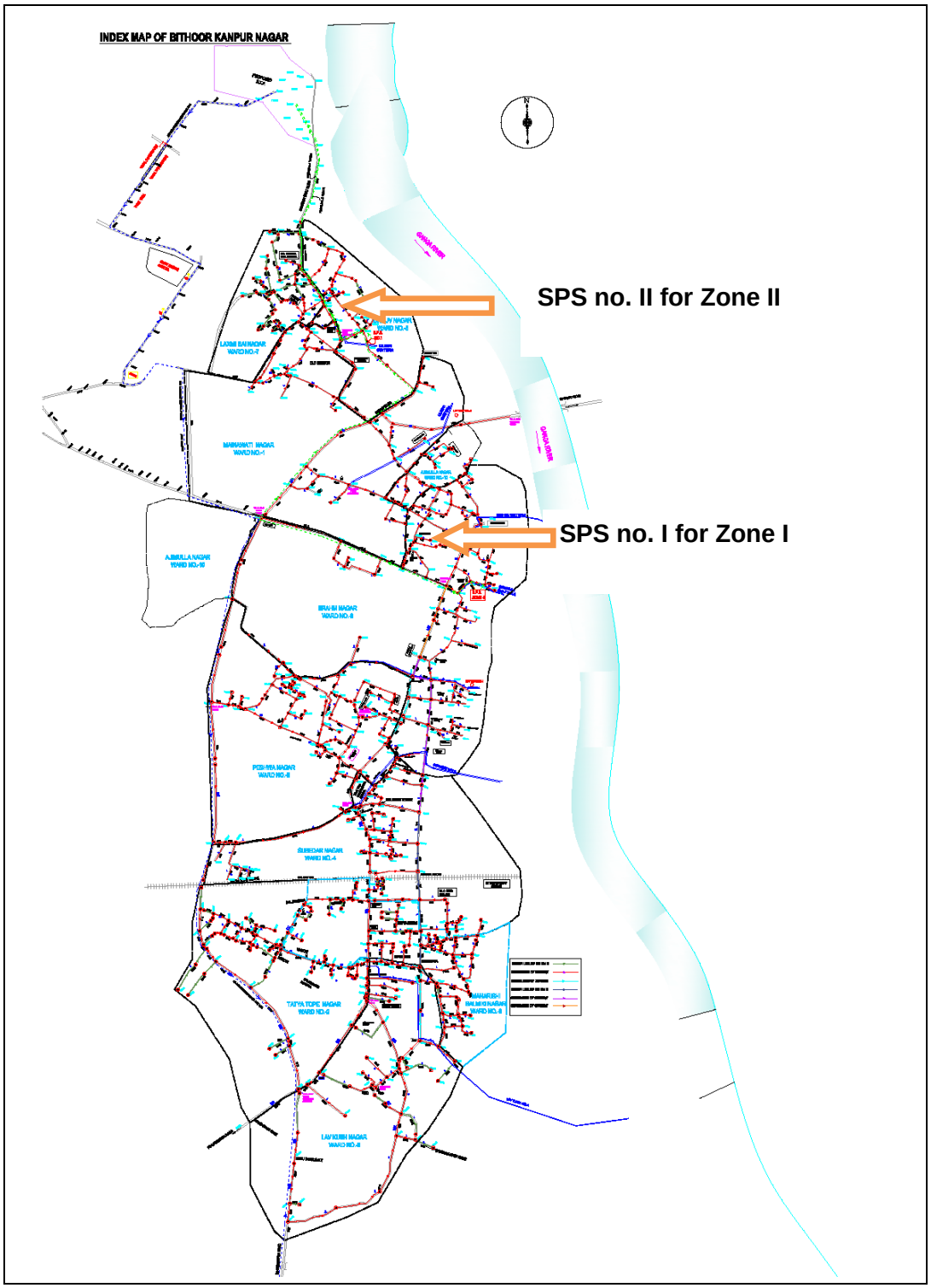


Figure 3-9 *Figure showing location of Sewage Pumping Stations of Bithoor STP Area*

Table 3-5 Summary Calculation of Sewage Pumping stations for Zone I in Bithoor Town

Ward No.	Name of Wards	Population Estimation	
		Year-2020	Year-2035
1	Peshwa nagar	1740	2330
2	Tatya tope nagar	1910	2550
3	Mainawati nagar	1420	1900
4	Brmha nagar	2360	3180
6	Maharshi Balmiki nagar	1850	2480
8	Subedar nagar	1960	2620
9	Lavkush nagar	1790	2400
10	Azimulla nagar	1640	2190
Total Pop. Load IN S.P.S.-I		14670	19650
Sewerage flow in mld (@80% of 135 lpcd)		**1.584**	**2.102**

Table 3-6 Summary Calculation of Sewage Pumping stations for Zone II in Bithoor Town

Ward No.	Name of Wards	Population Estimation	
		Year-2020	Year-2035
1	Dhruva nagar	1690	2270
2	Laxmi bai nagar	1540	2080
Total Pop. Load in S.P.S.-II		3230	4350
Sewerage flow in mld (@80% of 135 lpcd)		**0.388**	**0.470**

(iii) Manholes: The ordinary rectangular slab type as well as circular manholes of brick masonry are proposed at all junctions, change of diameters, and change in pipe gradients and on straight run of sewer. Drop manholes are proposed where the difference between invert level of lateral/ branch sewer and maximum water level (at design peak flows) of main sewer is more than 600 mm.

(iv) House connection: Where the sewers run through inhabited areas, intermediate shafts of 0.6m x 0.6 m between the manholes will be provided to provide points of house connections in addition to manholes. The exact location of the chambers has to be judiciously selected by the executing agency so that points of house connections are available at a distance not generally exceeding 10m.

3.6.2 Construction of STP

Sewage treatment plant based on waste stabilization pond of capacity 2.6 MLD, has been proposed in the upstream side (near Dhruv Teela) of the town. The sewerage system will convey the sewage from the entire town to the STP. A land of 7.05 Hectare has provided by the District administration, Kanpur Nagar. The STP will consist of combination of –:

(i) Anaerobic Pond

(ii) Facultative Pond

(iii) Maturation Pond

As per guideline of NGBRA, no sewage/ treated sewage water can inter directly into the River Ganga. For zero discharge into the Ganga river following two proposals have been considered:

a) Effluent Channel has been proposed for irrigation purpose in neighboring agricultural land in non monsoon period.
b) Check Dam has been proposed for storage of treated effluent water during non demand period. A catchment of 4.00 Hectare land has been provided for storage of water.

3.6.3 Laboratory:

For testing waste water and effluent, provision of laboratory has been considered with necessary basic facilities.

3.7. Implementation Schedule

It is anticipated that construction duration for the contractor is estimated to be 36 Months (including monsoon period) for proposed sewerage system. The operation and maintenance of proposed sewerage system is also considered for five years after commission of the system

3.8. Financing

Total cost of the project has been estimated to be Rs. 60.0 crore. Table 3.7 gives the summary of cost of the proposed STP and sewerage work Bithoor Town, Kanpur.

Table 3-7 Abstract of Cost of Works Proposed STP

S.No.	Description	Estimated Cost (Rs in Lakhs)
A	Basic Cost	
1	Sewer Laying in zone-I	3094.24
2	Sewer Laying in zone-II	558.13
3	Estimate for use of treated sewage	
	(a) Network for agriculture Purpose	185.00
	(b) Check dam in adjacent ravine for storage of excess effluent for non-demand period	304.00
4	Sewage Pumping Station including rising main in zone-I	333.00
5	Sewage Pumping Station including rising main in	143.00

S.No.	Description	Estimated Cost (Rs in Lakhs)
	zone-II	
6	Estimate for lift station at Laxman Ghat Nala	79.95
7	Estimate of lift station at Peswa Nala	79.95
8	Estimate of WSP based 2.6mtd S.T.P anaerobic, facultative aerobic followed by agro forestry	130.00
9	Estimate of construction of boundary wall for STP land	210.00
10	Estimate of railway crossing by trenchless method (2 Nos.)	110.00
11	Estimate of Hiring of Godown	18.00
	Sub Total (A)	5,245.27
B	Charges	
1	Cost of Project Preparation @4% as per the NGRBA guidelines (Maximum)	216.01
2	Cost of Supervision of Project @4% as per NGRBA Guidelines (Maximum)	216.01
	Sub Total (B)	432.02
C	Cost of Work on which no charges will admissible	
1	Communication and Public Outreach	12.00
2	GAAP	5.00
3	Cost of sewer cleaning equipment's	70.00
4	ESAMP	35.00
5	Power Connection and allied works	93.00
	Sub Total (C)	215.00
D	Operation and Maintenance	
1	Operation and Maintenance for first 5 years of commissioning of project	157.64
	Sub Total (D)	157.64
Grand Total (A+B+C+D)		**6049.23 say 60.0 crore**

4.0 REGULATIONS AND LEGAL FRAMEWORK

4.1. Applicable Laws and Regulations – Environmental

The following laws and regulations are applicable to the environmental and social aspects of the investments implemented under the programme:

- Policy and Regulatory Framework of Government of India (GoI)
- Environmental Policy and Regulations of the respective State Governments
- Legislations applicable to construction activities

Legal Framework of Government of India

The Government of India has laid out various policy guidelines, acts and regulations pertaining to environment. The Environment (Protection) Act, 1986 is umbrella legislation for the protection of environment. As per this Act, the responsibility to administer the legislation has been jointly entrusted to the Ministry of Environment and Forests (MoEF) and the Central Pollution Control Board (CPCB)/ State Pollution Control Boards (SPCBs).

Key Environmental Laws and Regulations

The key environmental laws and regulations as relevant to the projects under the NGRBP are given in Table 4-1. The key environmental regulations can also be accessed at www.moef.nic.in/rules-and-regulations

Table 4-1 Environmental Regulations and Legislations

S. No	Act / Rules	Purpose	Applicable Yes/ No	Authority
1	Environment Protection Act-1986	To protect and improve overall environment	Yes	MoEF, GoI, DoE, State Gov. CPCB, SPCB
2	Environmental Impact Notification 14th Sep-2006	To provide environmental clearance to new development activities following environmental impact assessment	No	MoEF, EIAA
3	Municipal Wastes(Managem and Handling) 2000	To manage the collection, transportation, segregation, treatment, and disposal of municipal solid wastes	Yes	MoEF, EIAA, CPCB, SPCBs
4	Coastal Regulation Zone(CRZ) Notification 1991 (2002)	Protection of fragile coastal belt	No	
5	The Land Acquisition Act (As amended in 1985)	Set out rule for acquisition of land by government	Yes	Revenue Department State Government
6	The Forest (Conservation) Act.	To check deforestation by restricting	No	Forest Department, State

S. No	Act / Rules	Purpose	Applicable Yes/ No	Authority
	1980	conversion of forested areas into non-forested areas		Government and Ministry of Environment and Forests, Government of India
7	Wild Life Act 1972	To protect wildlife through certain of National Parks and Sanctuaries	No	Chief Conservator Wildlife, Wildlife Wing, State Forest Department and Ministry of Environment and Forests, Government of India
8	Air (Prevention and Control of Act), 1981	To control air pollution by controlling emission of air pollutants as per the prescribed standards.	Yes	SPCBs
9	Water (Prevention and Control of Pollution) Act1974	To control water pollution by controlling discharge of pollutants as per the prescribed standards	Yes	SPCBs
10	The Noise Pollution (Regulation and Control) Rules, 2000	The standards for noise for day and night have been promulgated by the MoEF for various land uses.	Yes	SPCBs
11	Ancient Monuments and Archaeological Sites and Remains Act1958	Conservation of cultural and historical remains found in India	No	Archaeological Department Gol, Indian Heritage Society and Indian National Trust for Art and Culture Heritage (INTACH).
12	Public Liability and Insurance Act 1991	Protection form hazardous materials and accidents.	No	SPCBs
13	Explosive Act 1984	Safe transportation, storage and use of explosive material	No	Chief Controller of Explosives
14	Minor Mineral and concession Rules	For opening new quarry.	Yes	District Collector
15	Central Motor Vehicle Act 1988	To check vehicular air and noise pollution.	Yes	Motor Vehicle Department

S. No	Act / Rules	Purpose	Applicable Yes/ No	Authority
16	National Forest Policy, 1988	To maintain ecological stability through preservation and restoration of biological diversity.	No	Forest Department, State Government and Ministry of Environment and Forests, Government of India
17	The Mining Act	The mining act has been notified for safe and sound mining activity.	No	Department of mining, State Government

4.2. Applicable Laws and Regulations - Social

All strategic interventions on human development, spread across all social issues, need directives of policies and legal support to operationalize the appropriate actions. These policies and legislations help to overcome the constraints and support administrator, implementer, community and individual in delivery of justice. This section includes the National policies and Acts as detailed under:

National Policies and Acts

- Forest Rights Act, 2006
- The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Amendment) Second Ordinance, 2015. **(Annux-V)**

Forest Rights Act 2006

The Act basically does two things:

- Grants legal recognition to the rights of traditional forest dwelling communities, partially correcting the injustice caused by the forest laws.
- Makes a beginning towards giving communities and the public a voice in forest and wildlife conservation

4.3. RIGHT TO FAIR COMPENSATION AND TRANSPARENCY IN LAND ACQUISITION, REHABILITATION AND RESETTLEMENT ACT, 2013

This law has been enacted to ensure, in consultation with institutions of local self-government and Gram Sabhas established under the Constitution, a humane, participative, informed and transparent process for land acquisition for industrialization, development of essential infrastructural facilities and urbanization with the least disturbance to the owners of the land and other affected families and provide just and fair compensation to the affected families whose land has been acquired or proposed to be acquired or are affected by such acquisition and make adequate provisions for such affected persons for their rehabilitation and resettlement and for ensuring that the cumulative outcome of compulsory acquisition should be that affected persons become partners in development leading to an improvement in their post-acquisition social and economic status and for matters connected therewith or incidental thereto.

No private land is proposed to be acquired for this project. The land required for construction of STP belongs to the Nagar Panchayat and that for the Sewage Pumping Stations to the UP Irrigation department. In view of above, this Act is not applicable for this project.

Right to fair compensation and transparency in Land Acquisition, Resettlement and Rehabilitation Act, 2013 (Not Applicable):

Table no 4.2

Comparative analysis of RFCTLAR&R, 2013 and World Bank OP 4.12.

Serial No.	Topics/Issues/Areas	World Bank OP4.12	RFCTLAR&R, 2013
1	Application of LA	Direct economic and social impacts that both result from Bank- assisted investment projects. Applies to all components of the project that result in involuntary resettlement, regardless of the source of financing.	***Section 2*** Applicable to projects where government acquires land for its own use, hold and control, including PSU and for public purpose; for PPP where ownership of land continues to vest with govt; private companies where 80% of **land owners***1* have given consent or 70% in case of PPP.
	Principle of avoidance	Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project design	Alternatives to be considered as Act in chapter II, point # 4 (d) says "extent of land proposed for acquisition is the absolute bare minimum needed for the project; and (e) says land acquisition at an alternate place has been considered and found not feasible.
	Linkages with other projects		No such provision
2	Application of R&R	Same as above	In addition to the above, ***Section 2(3)*** land purchased by private company as prescribed by Govt. or when part acquired by govt
3	Affected area	Involuntary take of land resulting in loss of shelter, loss of assets or access to assets, loss of income sources or means of livelihood	***Section3(b)***: Area notified for 'acquisition'
4	Family	All adversely affected people whether have formal legal rights or do not have formal legal rights on land	***Section 3(m)*** includes person, his and her spouse, minor children, minor brothers and sisters dependent. Widows, divorcees, abandoned women will be considered as separate family.
5	Affected family for eligibility		***Section 3 (a)***: whose land and other immovable property acquired. ***(b)&(e)***: Family residing in affected area such as labourers, tenants, dependent on forest and water bodies, etc whose primary source of livelihood is affected due to acquisition ***(c)***Scheduled tribes and other forest dwellers whose rights recognized under the Forest Dwellers Act 2006. ***(f)*** Family assigned land by state or central government under any schemes ***(g)*** Family residing on any land in urban area that will be acquired or primary source of livelihood affected by acquisition.

6	Cut-Off date	Date established by the borrower and acceptable to the Bank. In practice it is the date of census.	***Section 3 c (ii), (iv) (vi)***: Families residing for preceding 3 yrs or more prior to "acquisition of land".
7	Non-application of Chapter II	Stand-alone SIA for all investments	***Section 6(2):*** Irrigation projects where EIA is required under other laws, provisions of SIA not applicable.
7	Consultation – Phase I during preparation	Consultation a continuous process during planning and implementation	***Section 4(1)*** date issued for *first consultation* with PRIs, Urban local bodies, Municipalities, etc to carry out SIA. ***Section 5***: Public hearing of SIA in affected area. Provide adequate publicity of date and time.
8	Time duration to prepare SIA and SIMP	Draft Social Assessment, Resettlement Action Plan and or Social Management Framework prepared before appraisal.	***Section 4 (2)***: ***within six months*** from the date of its commencement.
9	Disclosure – Stage I	To be disclosed before appraisal and 120 days before board date.	***Section 6(1)***: Translated in local language available in PRI institutions and local urban government bodies; district administrative offices and websites of concerned government agency.
10	Formation of Expert Group to appraise SIA and SIMP	Appraised by Bank staff	***Section 7(1):*** Constitute a multi-disciplinary Expert Group include members of decentralized govt Institutes (PRIs, ULBs).
11	Time stipulated for Group to submit its report	Before the decision meeting for appraisal	***Section 7(4):*** Submit its report ***within two months from the date of its constitution***
12	Scope of work of the Expert group	Social Assessment, resettlement action Plan reviewed and appraised by Bank staff and approved by Regional safeguard advisor	***Section 7 (4) (a&b)***: assess whether it serves any public purpose or not; if social costs outweigh potential benefit then should be abandoned; ***Section 7 (5) (a&b)***: if serves public purpose, then it has considered minimum land acquisition, and alternate options to minimize displacement; potential benefits outweigh social costs
13	Consultation – Phase II during appraisal	In practice consultation workshops are organized in project affected areas at district and state level.	***Section 2 (2):*** Prior consent of 80% and 70% of land owners in PPP and where private company has approached the govt to acquire balance land has been obtained,
14	Disclosure – Stage II	Information dissemination through the planning and implementation	Section 7 (6): recommendations of expert group under 7(4&5)to be made public in local language in district and block administrative office and PRIs
15	Minimize impact on multi-crop land	Select feasible design that has minimal adverse impact.	***Section 10:*** In case multi-crop land is to be acquired under exceptional circumstances, the area to be acquired cannot exceed aggregate of land of all projects in district or state. The

			area to be acquired cannot exceed the total net sown area of the district or state. Wasteland equivalent to twice the area acquired will be developed.
16	Information dissemination of preliminary notice	Continuous part of the preparation and participation	***Section 11 (1), (2) & (3)***: Notice published in local language and meetings called of gram sabahs, municipalities to provide full information about the purpose of the project, summary of SIA and particulars of administrator appointed for R&R' summary of R&R scheme
17	Updating land records	To be part of RAP	***Section 11 (5)***: Once established that the land is required for public purpose, accordingly notice to be issued ***under section 19 following which land records to be updated within two months***
18	Census and preparation of R&R schemes	To be part of RAP	***Section 16 (1) (2)***: carry out census of affected people and their assets to be affected, livelihood loss and common property to be affected; R&R scheme including time line for implementation.
19	Information dissemination and Public hearing - Stage III	Consultation throughout the process is mandatory	***Section 16(4)&(5)***: mandatory to disseminate information on R&R scheme including resettlement area and organize public hearing on the Draft R&R scheme in each Gram Sabha, Municipality and consultations in Scheduled area as required under PESA.
20	Approval of R&R Scheme		***Section 17 & 18***: Draft R&R Scheme to be finalized after addressing objections raised during public hearing and approved.
21	Final declaration of R&R Scheme	Approved RAP including budgetary provisions to implement it	***Section 19 (2)***: Only after the requiring body has deposited the money will the govt issue the notice along with **19(1)**.
22	Time period stipulated.	To be included in RAP - Time line synchronized with Government's procedures or adopts innovative methods to reduce the time which is based operated on the principles of participation and	***Section 19 (2):*** the entire process to update land records, disseminate information, preliminary survey, census, hearing of objections, preparation of R&R schemes and approval, deposit of money must ***complete within 12 months*** from the date on which section 11, the preliminary notice issued. ***Section 19 (7)***: If the final

		transparency.	declaration not made within 12 months of section 11 (1), the process will lapse, except under special circumstances.
23	Preparation of land acquisition plans	To be included in RAP.	***Section 20:*** Land marked, measured for preparation of acquisition plans.
24	Hearing of claims		***Section 21(1) (2)***: Notices issued indicating govt's intension to take possession of land, and claims on compensation and R&R can be ***made not less than one month and not more than six month*** from the date of issue of section 21(1).
25	Time period stipulated for declaring the award		***Section 25:*** It is required to announce the award ***within 12months of issue of Section 19 (final declaration to acquire land, approved R&R scheme)*** after completing land acquisition plans, hearing of objection, settling individual claims for declaration of the award. If award not made within the stipulated time, the entire proceedings will lapse.
26	LA Act 1984 deem to lapse and RFCTLAR&R is applicable		***Section 24***: where award is notdeclared under section 11, or where made five years ago butland not taken in possession or where award declared but money not deposited in the account of majority of beneficiary.
27	Methodology for determining market value for land	Full replacement Cost	***Section 26 and First Schedule:*** Recognizes 3 methods and whichever is higher will be considered which will be multiplied by a factor given in Schedule First; compensation given earlier will not be considered; if rates not available floor price can be set; steps to be taken to update the market value.
28	Valuation of structures	Full Replacement cost	***Section 29 (1)*** without deducting the depreciated value.
29	Solarium and interest		***Section 30(1)*** 100% of the compensation amount ***Section 30(3)***: 12% per annum on the market rate from the date of notification of SIA to the date of ward or land taken over
30	R&R Award	Total cost included in RAP to resettle and rehabilitate the affected persons and assist in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to predisplacement levels or to levels prevailing prior to the beginning of	***Section 31, Second Schedule***: A family as a unit will receive R&R grant over and above the compensation and those who are not entitled to compensation. ***Second Schedule:*** Homeless entitled to constructed house, land for land in irrigation projects in lieu of compensation, in case of acquisition for urbanization 20% of developed land reserved for owners at a prices equal to compensation' jobs or one time payment or annuity for 20 years'

		project implementation, whichever is higher	subsistence grant, transportation, land and house registered on joint name husband and wife, etc
31	Transparency		***Section 37(1):*** Information of each individual family including loss, compensation awarded, etc will be available on the website.
32	Possession of land	Taking of land and related assets may take place only after compensation has been paid and, where applicable, resettlement sites and moving allowances have been provided to the displaced persons.	***Section 38(1)***: Land will be taken over by the government within three months of compensation and 6 months of R&R benefits disbursed; infrastructure facilities at resettlement sites will be completed within 18 months from the date of award made under section 30 for compensation; in case of irrigation and hydle projects R&R completed six months prior to submergence.
33	Multiple displacement		***Section 39:*** Additional compensation equivalent to compensation determined will be paid to displaced
34	Acquisition for emergency purpose	Not permeable in bank funded projects	***Section 40 (5)***: 75% additional compensation will be paid over and above the compensation amount
35	Prior consent before acquisition and alienation	Mandatory to carry out Free, Prior, Informed Consultation with Indigenous people.	***Section 41(3)*** Mandatory to get consent from Gram sabah, Panchayat, Autonomous Councils in Scheduled areas.
36	Development plans for SC and ST	Indigenous Peoples' Development plan required along with RAP. Land for land for is an option across all sectors.	***Section 41:*** Separatedevelopment plans to beprepared, settle land rights before acquisition; provision of for alternate fuel fodder, non-timber produce on forest land to be developed within 5 years; 1/3rd compensation amount to be paid as first installment and rest at the time of taking possession; ST to be resettled within Scheduled area; land free of cost for community purpose; land alienation will be null and void and ST and SC considered for R&R benefits; fishing rights restored in irrigation and hydle projects; if wish to settle outside the district additional benefits to be provided in monetary terms; all rights enjoyed under other laws will continue. ***Second Schedule***: additional provisions for SC&ST for land for land in irrigation projects, additional sum over and above the subsistence grant,
37	Institutional arrangement	Institutional arrangement must be agreed upon and included in RAP, IPDP.	***Section 43-45:*** Appointment of administrator, R&R Commissioner, when more

			than 100 acres of land is to be acquired, R&R Committee will be formed at project level, social audit to be carried out by Gram Sabha and Municipalities.
38	Change of land use		***Section 46(4):*** Land will not be transferred to the requisitioning authority till R&R is not complied with in full
39	Monitoring and Evaluation	Indicators and monitoring system included in RAP and IPDP	***Section 48-50:***Set up National and State level Monitoring Committee to review and monitor progress
40	Authority to settle claims		***Section 51-74:*** the Authority will be set up settle any legal disputes that arise from acquisition and R&R, the aggrieved party can move to the high court thereafter.
41	Exempt from tax and fee		***Section 96:*** Compensation and agreements will not be liable to tax
42	No change in status of land acquired		***Section 99***: Once the land is acquired for a particular purpose, its purpose cannot be changed
43	Return of unutilized land		***Section 101:*** If the acquired land remains unutilized for 5 years, then it will be returned to original owner, heir or included in land bank
44	Distribution of increased value of land transferred		***Section102***: 40% of appreciated value of acquired land will be distributed to owners provided no development has taken place.

4.4. UP Land Purchase through Mutual Agreement Policy 2015

Depending upon the cost of the Land to be purchased for the project a committee is to be constituted like if the total land to be purchased is below Rs. 10 Cr. then a committee will be constituted under Chairmanship of ADM (Finance and Revenue) and Member Secretary from the concerned department. Purchase Committee will decide cost of Land and will submit for approval of the District Magistrate. Cost of land is evaluated based on following factors:

- Cost of Land adjoining to the identified land six months before the approval of the project taking into consideration sale deeds and Circle Rate as per Indian Stamp Act 1899
- Assets on Land, assessment to be carried out by the concerned department

- In case of immediate possession of land, Valuation of Agriculture, trees etc.
- Cost of land to be assessed on its distance from Settlements
- Additional support in case land owner has to incur due to change his job or profession due to purchase of land
- Land will not be purchased more than twice the rates in urban areas and Four times the rates in rural area of Market price or Circle rate, whichever is higher.

Details of the policy is at Annexure is at **Annexure VI**.

4.5. Other Legislations applicable to Construction Projects under NGRBP

Construction stage generally involves equity, safety and public health issues. The construction agencies therefore will be required to comply with laws of the land, which include inter alia, the following:

- Workmen's Compensation Act 1923 (the Act provides for compensation in case of injury by accident arising out of and during the course of employment);
- Payment of Gratuity Act, 1972 (gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years);
- Employees PF and Miscellaneous Provision Act 1952 (the Act provides for monthly contributions by the employer plus workers);
- Maternity Benefit Act, 1951 (the Act provides for leave and some other benefits to women employees in case of confinement or miscarriage, etc.);
- Contract Labor (Regulation and Abolition) Act, 1970 (the Act provides for certain welfare measures to be provided by the contractor to contract labour);
- Minimum Wages Act, 1948 (the employer is supposed to pay not less than the Minimum Wages fixed by the Government as per provisions of the Act);
- Payment of Wages Act, 1936 (it lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers);

Equal Remuneration Act, 1979 (the Act provides for payment of equal wages for work of equal nature to Male and Female workers and not for making discrimination against Female employees);

- Payment of Bonus Act, 1965 (the Act provides for payments of annual bonus subject to a minimum of 83.3% of wages and maximum of 20% of wages);
- Industrial Disputes Act, 1947 (the Act lays down the machinery and procedure for resolution of industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment);
- Industrial Employment (Standing Orders) Act; 1946 (the Act provides for laying down rules governing the conditions of employment);
- Trade Unions Act, 1926 (the Act lays down the procedure for registration of trade unions of workers and employers. The trade unions registered under the Act have been given certain immunities from civil and criminal liabilities);

- Child Labour (Prohibition and Regulation) Act, 1986 (the Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of child labour is prohibited in Building and Construction Industry);
- Inter-State Migrant Workmen"s (Regulation of Employment and Conditions of Service) Act, 1979 (the inter-state migrant workers, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home to the establishment and back, etc.);
- The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 and the Cess Act of 1996 (all the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act; the employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as canteens, first-aid facilities, ambulance, housing accommodation for Workers near the workplace, etc.);
- The Factories Act, 1948 (the Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours and rendering information-regarding accidents or dangerous occurrences to designated authorities);
- Hazardous Wastes (Management and Handling) Rules, 1989 (the Rules govern handling, movement and disposal of hazardous waste);
- Manufacture, Storage and Import of Hazardous Chemicals Rules 1989.

5.0 BASELINE STATUS

5.1. Introduction

The baseline environmental and social status is important to understand the region's existing physical and biological characteristics along with cultural and social status of the residing community. Information and data presented in this section is based on field surveys, stake-holder interaction/consultation and secondary data collection which majorly include the Detailed Project Report (DPR) of proposed sewerage work, report by Nagar Nigam, Water/ Air/ Noise quality monitoring report, City census data and others. The information on the baseline environmental conditions forms the basis to analyse the probable impacts of the proposed project vis-à-vis the present background environmental quality of the core study area.

5.2. Project Influence Area

In general 5 km from the project boundary of the STP area and the lateral area through which sewer line passes have been considered as Project Influence Area. Within this project influence area the mostly consisits of built up or open area There is no such natural sensitive area observed within the project influence area. However man made sensitive locations like temples along the Ghats, School, hospital, health centres and some old buildings are observed. The figure showing general study area has been shown in the figure below.

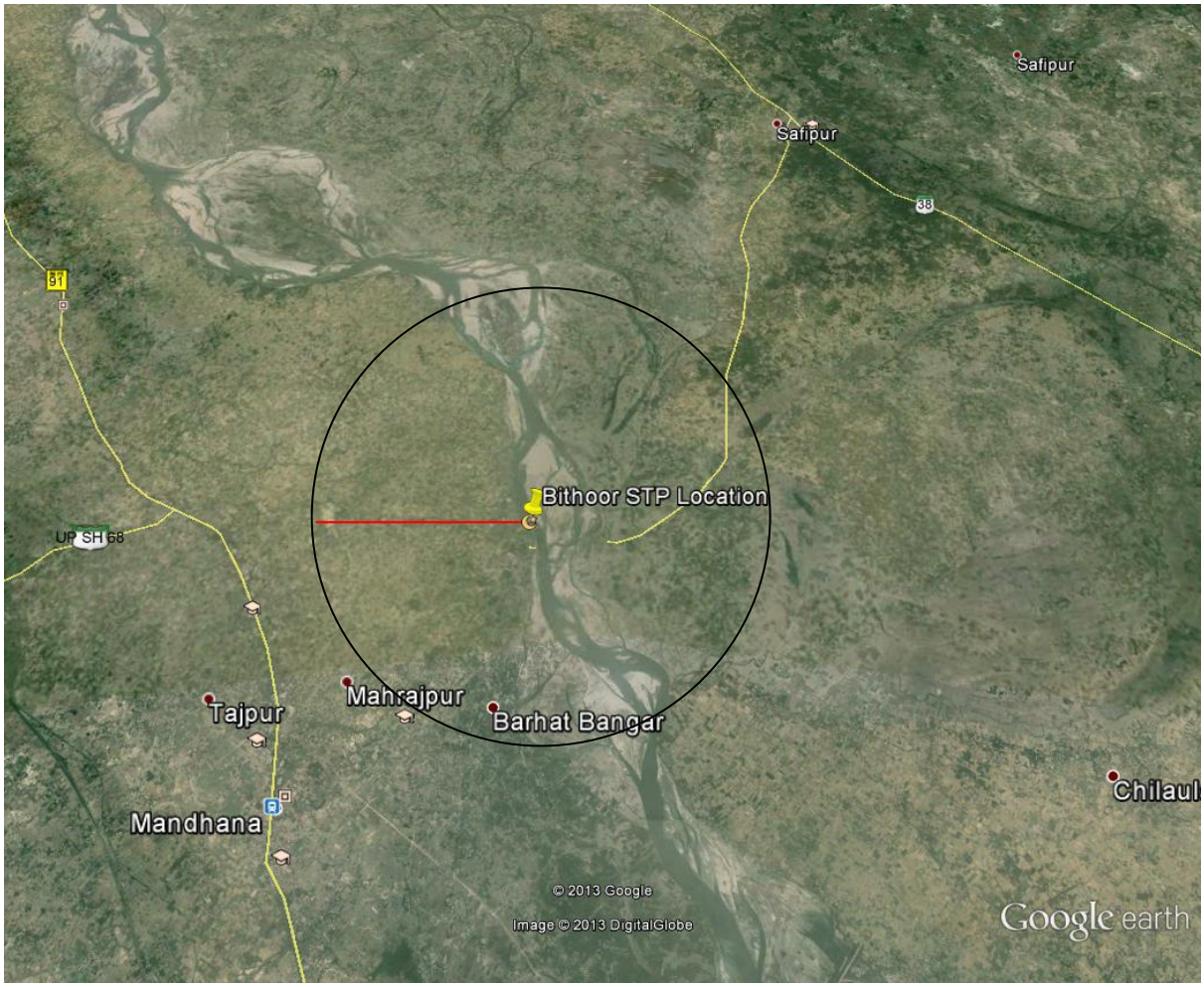


Figure 5-1 *General study area of the project.*

5.3. Environment and Social screening:

The details of environment and social screening details is shown in table 5.1 as given below:

Table 5-1 Screening Checklist Format as per NGRBA ESMF

Environment and Social information format for screening

Project Title: Preparation of Detailed Project Reports (DPRs) & BID Documents; Tendering for Execution; Construction Supervision & Quality Control of Sewerage Project of Bithoor Town, Kanpur City: Under NGRBA

Implementing agency: Ganga Pollution Control Unit, Uttar Pradesg Jal Nigam

Project cost: INR 60.0 Crore

Project components: Two Pumping Station (MPS), Sewer Line of 32 km, House Sewer Connections, Two Rising Main; STP of capacity 2.6 MLD based on Waste Stabilisation Pond Technology

Summary of Existing Bithoor Town, Kanpur City: The project area of thi project is Bithoor town, which is situated at the bank of River Ganga on the Kanpur-Kannauj road approx. 25 kms from the main city Kanpur. There is no sewerage system in the town.

Sr. No.	Screening Criteria	Assessment of category (High/ low)	Explanatory note for categorization
1	Is the project in an eco-sensitive area or adjoining an eco-sensitive area? (Yes/No) If Yes, which is the area? Elaborate impact accordingly.	No	There are no environmental sensitive areas in the proposed project area. Further the small residential parks and road side trees will not be affected, since the sewers will not pass through these areas.
2			
2.1	Land acquisition resulting in loss of income from agricultural land, plantation or other existing land-use.	No	• STP has been planned to be setup on a Government land. The required land (7.05 ha) for STP has been provided by the District Administration, Kanpur Nagar. Whereas land parcel for sewage pumping stations (2 X 900 sq.m.) has been provided by Chairman, Town Area of Bithoor. • Also there exist no squatters or encroachers in and around the premises who

Sr. No.	Screening Criteria	Assessment of category (High/ low)	Explanatory note for categorization
			could get affected by the project.
2.2	Loss of livelihood	No	**Loss of livelihood** is not expected since there is no affected shops or other means.
2.3	Land acquisition resulting in relocation of households.	No social impacts	No Major Land acquisition required and no relocation of households required since identified plots of land do not have any habitations or settlements. Thus, no relocation of household require for this package. The locations of STP as proposed on vacant site thus no habitation/ household relocation is required. Also there exist no squatters or encroachers in and around the premises which will be affected.
2.4	Any reduction of access to traditional and river dependent communities (to river and areas where they earn for their primary or substantial livelihood).	No social impacts	No access problem likely to be there to river
2.5	Any displacement or adverse impact on tribal settlement(s).	No social impacts	There are no tribal settlements in the project area.
2.6	Any specific gender issues	No social impacts	No gender issues were reported during survey
3			
3.1	Clearance of vegetation/ tree-cover	No environmental impacts	The tree/ vegetation cover in areas are aligned along the road sides and will not be affected.

Sr. No.	Screening Criteria	Assessment of category (High/ low)	Explanatory note for categorization
3.2	Direct discharge of construction runoff, improper storage and disposal of excavation spoils, wastes and other construction materials adversely affecting water quality and flow regimes.	Limited & Temporary	Possibility of temporary flushing away of un-managed spoils and construction wastes during rainfall to river Ganga via storm water drains. If not appropriately managed, there may be potential for temporary effect on storm water flows by obstruction to flows and blockage of drains, especially during rainfall. This may cause floods.
3.3	Flooding of adjacent areas	Limited & Temporary	For sewerage works in the entire area, flooding could be an issue during the monsoons, especially in the low lying areas. This issue may further aggravate due to blocked drains and poor solid waste management in the city.
3.4	Improper storage and handling of substances leading to contamination of soil and water	Limited & Temporary	The storage of construction related material will not cause any contamination since these materials would typically include: Concrete, pipes, masonry, rubber pipes. The project area have some importantl Ghats. However these areas will not be affected as sewer lines are not planned to be laid through any of these areas. However, with other finer materials such as construction powders, fluids and greases, if not appropriately managed or in the event of an accident, there may be potential for temporary contamination of the river Ganga via the various drains and nallas, during rainfall. If construction material will not be handled appropriately, it may affect agricultural lands minutely.

Sr. No.	Screening Criteria	Assessment of category (High/ low)	Explanatory note for categorization
3.5	Elevated noise and dust emission	Limited & Temporary	For sewage works, construction is likely to increase dust and noise levels temporarily. Temporary impacts may especially be felt at educational facilities like schools/colleges (GS memorial public school, GIC Inter College, Law College, ram Janki Inter College, Vibha Medical Centre, Eye Hospital, etc), cultural/religious centers including all temples, mosques, in the region.
3.6	Disruption to traffic movements	Limited & Temporary	Traffic disruption can be expected in some areas due to transportation of material of construction. However, the area being a low density area there will not be any major impact in traffic movement.
3.7	Damage to existing infrastructure, public utilities, amenities etc.	Limited & Temporary	If not appropriately managed, there may be potential for temporarily affecting the existing public utilities like water supply, telephone, electricity cables etc. However, in the proposed scheme, there is a proper relocation of all utilities like telecom, water line, electricity, etc is provisioned.
3.8	Failure to restore temporary construction sites	Limited & Temporary	From field visits and as per JNNURM project (Water Supply scheme) reinstatement of dismantled roads after filling and proper compaction was observed. Although temporary, concerns regarding failure to restore construction sites including failure to close and appropriately fence-off open pits were cited as safety concerns especially for

Sr. No.	Screening Criteria	Assessment of category (High/ low)	Explanatory note for categorization
			children.
3.9	Possible conflicts with and/or disruption to local community	Limited & Temporary	For the laying of sewer works, there will be temporary disruption to the local community in terms of access to roads, (especially in dense areas and narrow roads), shops and residences. Conflicts/ disruption to local community was inferred as limited based on survey responses which indicated the community's ability to adapt to temporary disruptions, and their overall preference for the project.
3.10	Health risks due to unhygienic conditions at workers' camps	Limited & Temporary	There may be health risks to the labourers if hygienic condition is not maintained at work place. However, in the proposed project, there is a provision of adequate facilities for proper health and hygienic condition at work place.
3.11	Safety hazards during construction	Limited & Temporary	From field visits and as per Water Supply project practices for safety precautions such as fencing-off construction areas, sign posts etc. were observed. If not appropriately managed, there may be potential for temporary hazards such as injuries and damage to property during the construction phase.
4			
4.1	Flooding of adjacent areas	Limited & Temporary	Due to the construction of sewer lines, raw sewage that currently flows into the river and/ or overflows into the streets. However, accidental leakages during the operational stage may lead to flooding and possible

Sr. No.	Screening Criteria	Assessment of category (High/ low)	Explanatory note for categorization
			contamination of groundwater. Additionally, overloading and blockage of sewage lines will also lead to backlogging of sewers and flooding of branch sewers.
4.2	Impacts to water quality due to effluent discharge	No social impacts	There will be a significant improvement in water quality due to effluent discharge being treated.
4.3	Gas emissions	No social impacts	There will be *reduction* in gas emissions from open sewage drains since the proposed sewage networks will be underground.
4.4	Safety hazards	No social impacts	There will be minimum safety hazards since the sewer lines will be underground.
5	Do projects of this nature / type require prior environmental clearance either from the MOEF or from a relevant state Government department? (MOEF/ relevant State Government department/ No clearance at all)	No clearance required	Project such as these have an overall positive impact for the environment and society. Hence no clearance would be required under the Environmental Impact Assessment Notification, 2006.
6	Does the project involve any prior clearance from the MOEF or State Forest department for either the conversion of forest land or for tree-cutting? (Yes/No). If yes which?	No clearance required	As the project is in urban provinces and does not require any forest land of tree-cutting, hence no prior clearance is required from relevant authorities (MoEF and State Forest departments) under the Forest (Conservation) Act, 1980. There may be requirement of trimming of some trees for providing accessible pathway to the excavators and other construction vehicles but same need no consent/ approval of any

Sr. No.	Screening Criteria	Assessment of category (High/ low)	Explanatory note for categorization
			of these dept.
7	Please attach photographs and location maps along with this completed Environmental Information Format For Screening.	Attached along with the report	
8	**Overall Assessment**	Low	The project involves construction of only 32 km sewer line, two pumping stations and a STP based on waste stabilisation pond technology. The area being a low density area disruption to normal public life will be minimal.

Based on the screening activity and the categorization of potential sub-projects of the NGRBA, the present project of Sewerage work in Bithoor Town, Kanpur City falls under low impact category.

5.4. Baseline Condition of Project Surrounding Area

Topography

Bithoor Town, Kanpur is located on the south bank of the Ganga River. A characteristic of the geography of Bithoor Town is its proximity to Ganga rivers. The area lies in the Ganga basin which is formed of alluvium of the early quaternary period. There is no hard or consolidated rock exposures are encountered. The main constituents (sand, silt and clay) of alluvium occur in variable proportions in different sections.

Climate

The climate of town varies hot dry in summer to cold in winter. The maximum and minimum mean temperature varies in between 41°C and 8.5°C. The summer begins in April and peaks in June/July with the temperature soaring up to 41 °C till the moisture laden monsoon wind bring some much-needed relief to the parched fields. The rains last through August & September and continue into early October. The yearly rainfall is 632 mm whereas the average rainfall during monsoon is 177 mm. The monthly average wind speed varies from 6.0 kmph to 13.4 kmph. The relative humidity varies from 22% to 87%.

Table 5-2 Climatological Normal of Temperature, Humidity and Rainfall at Kanpur

Month	Temperature (°C)		Monthly total rainfall mm	Humidity (%)	
	Maximum	Minimum		0830 Hrs	1730 Hrs

January	22.7	8.5	21.1	79	50
February	26.4	11.3	12.5	66	38
March	32.5	16.6	6.2	52	29
April	38.3	22.0	4.5	37	23
May	41.4	26.5	9.8	37	22
June	40.1	28.7	65.4	54	39
July	34.3	26.7	229.8	80	68
August	32.2	25.9	289.5	87	77
September	33.0	24.9	124.4	81	68
October	32.7	20.2	60.7	69	54
November	29.0	13.2	1.0	65	46
December	24.2	8.9	7.7	76	50

Source: India Metrological Department data from 1951-1976

Geomorphology & Soils

Bithoor Town, Kanpur district is a part of the Indo-Gangetic alluvium, which separates Extra-Peninsular regions on the north from the Peninsular region on the south. The level plain is known to be the outcome of a granular filling of a great depression with alluvial sediments since Middle Pleistocene times. The district forming a part of the flood plains of the Ganga has a monotonously flat relief. The area is underlain by unconsolidated formation which is quarternary to Upper quarternary of age group. Lithologically, the district is made up of recent alluvium, clay, silt, sand, gravel pebbles with concentration of calcareous materials. The presence of kankar (nodules of $CaCO_3$) and fine sand at places render the top clay zone semi-pervious in nature. The area under study is underlain by alluvial sediments of quaternary age. The quaternary sediments are deposited unconformable on the Archaean basement.

Soils in Bithoor usually comprises a layer of clay on the top surface. Thick sandy horizon occurs beneath the top clay layer having sufficiently large thickness. The soil in this area, represents older aluvium. In general the Calcareous Alluvium has higher potential of binding of molecules than the newer alluvium or acidic alluvium and hence the chance of erosion in Calcareous alluvium is comparatively lesser than acidic alluvium. Chemical analysis study of the soil has been presented in the Table 5.2 below:

Table 5-3 Quality of Soil Sample

	Parameter	Unit	Results
1	pH	-	8.85(1:5) 26ºC
2	Texture	-	Sandy loam
3	Sand	%	45-55
4	Silt	%	25-35
5	Clay	%	21-25
6	Bulk density	g/cc	1.21- 1.28
7	WHC	%	44- 51
8	OM	%	1.1 1.2
9	N	mg/kg	220-235
10	P	mg/kg	8-12
11	K	mg/kg	100-115
Source: Laboratory Analysis			

Seismicity

The project area falls in seismic zone – IV as per the BIS (1893, Part-1, 2002) category of seismic zoning map of India.

Ground Water Scenario

The Central Ground Water Board (CGWB) has established a network of observation wells under National Hydrograph Network (HNS) programme to ascertain fluctuation and quality of groundwater in the Kanpur district. There are about 11 HNS monitoring locations identified and being monitored every year regularly during January, May, August and November. During pre-monsoon season, the minimum and maximum water levels were observed as 11.40 and 10.04 m bgl respectively in the observatory dug well at Bithoor town. There is no no over exploited or critical blocks in the town. .

The ground water of the area is colourless, odourless and slightly alkaline in nature. The Electrical conductance ranges from 470-1560 µ/cm at 250C. The Fluoride is within the permissible range from 0.47-0.96 mg/l. Phosphate is found nil in the area. It is observed that quality of water is good for drinking, domestic and all other purposes.

Ambient Air Quality

Air quality is a measure of the condition of air relative to the requirements of one or more biotic species and/or to any human need or purpose. Air quality in Bithoor is better than Kanpur city because of less traffic and almost zero industrialization, RSPM, SO_2, NO_2 & Ambient Air quality is well with in UPPCB/CPCB stipulated standards. Ambient air quality has been shown in figure 5.2-5.4.

Table 5-4 Ambient Air Quality Monitoring Report

Location	Period of Monitoring	PM_{10} ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)
Primary School, Laxmi Bai Nagar	13.11.2013 - 12.12.2013	62	5.5	9.0
Eye Hospital, Maharishi Balmiki Nagar	13.11.2013 - 12.12.2013	54	5.2	8.3
Brahm Nagar	13.11.2013 - 12.12.2013	59	6.7	13.0
Limit as per CPCB notification, New Delhi, 18th Nov, 2009. for Ambient air quality		100	80	80
Source		Laboratory reports		

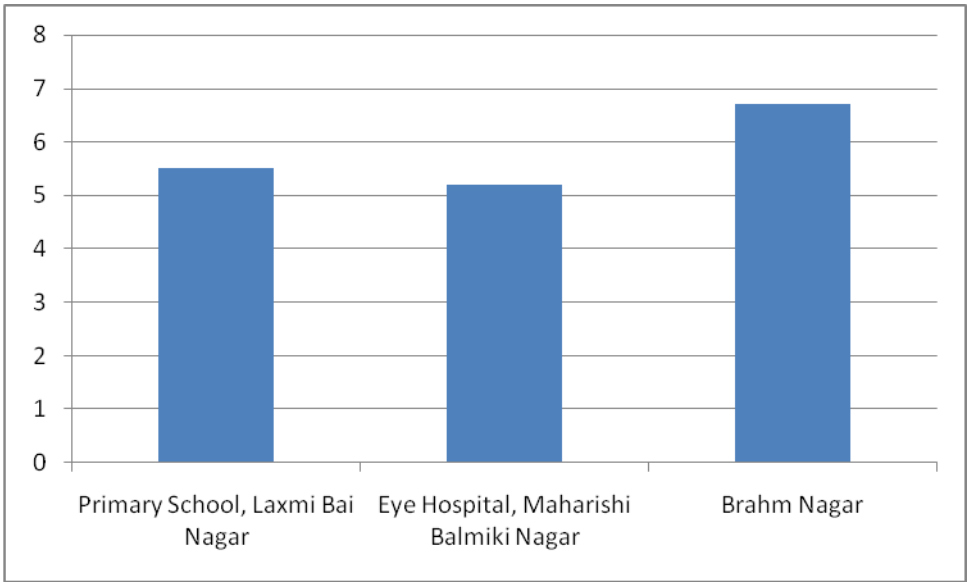


Figure 5-2 *Concentration of SO2 in Bithoor Town*

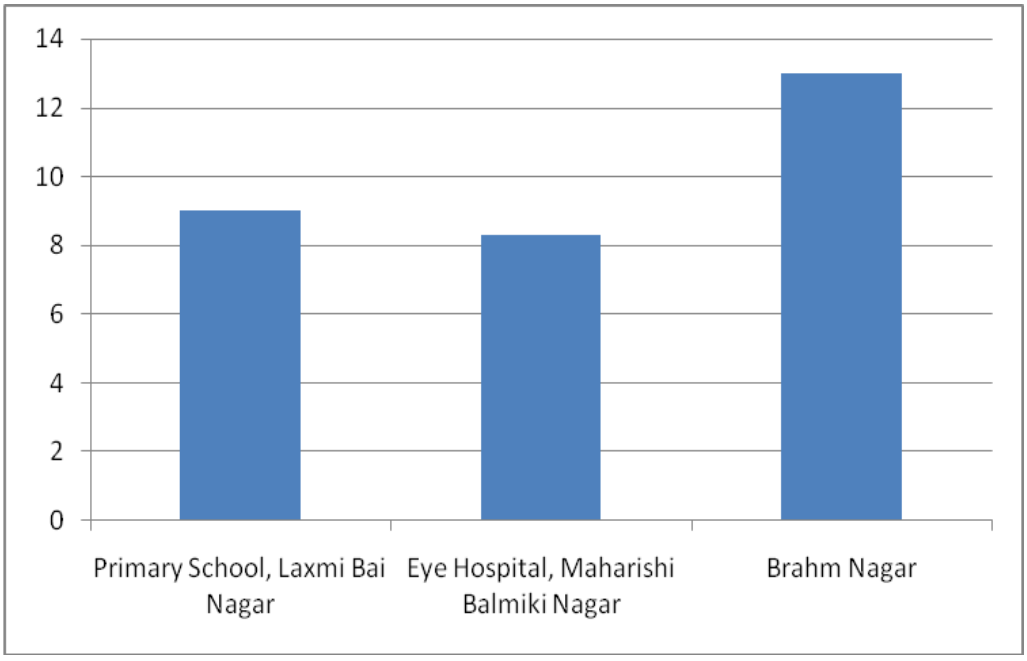


Figure 5-3 *Concentration of NO2 in Bithoor town*

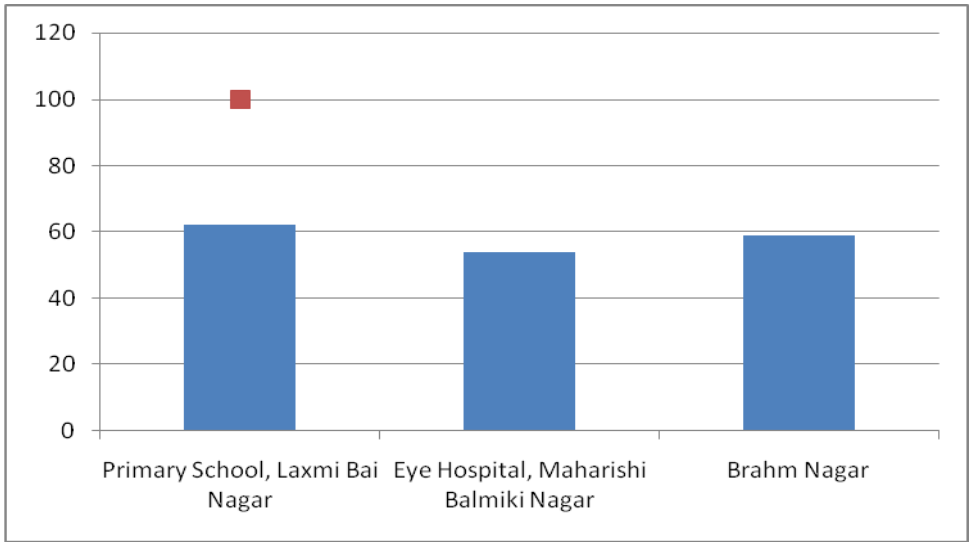


Figure 5-4 *Concentration of RSPM in Bithoor Town*

Noise, Environment

Noise, in general is sound that is composed of many frequency components of variance loudness distributed over that audible frequency range Since, Bithoor is less developed, less transportation and little commercials activities, there is not much noise. Sound level in town in terms of DB is well within stipulated limits. Noise quality has been shown in Figure 5.5.

Table 5-5 Noise quality monitoring report

Sampling Location	Day (6 am to 10 pm)			Night (10 pm to 6 am)		
	L_{10} dB(A)	L_{90} dB(A)	L_{eq} dB(A)	L_{10} dB(A)	L_{90} dB(A)	L_{eq} dB(A)
Primary School, Laxmi Bai Nagar	48.4	39.3	44.7	38.2	33.1	35.6
Eye Hospital, Maharishi Balmiki Nagar	50.7	41.3	46.8	40.4	33.8	36.9
Brahm Nagar	52.4	40.7	46.6	41.3	34.6	36.7

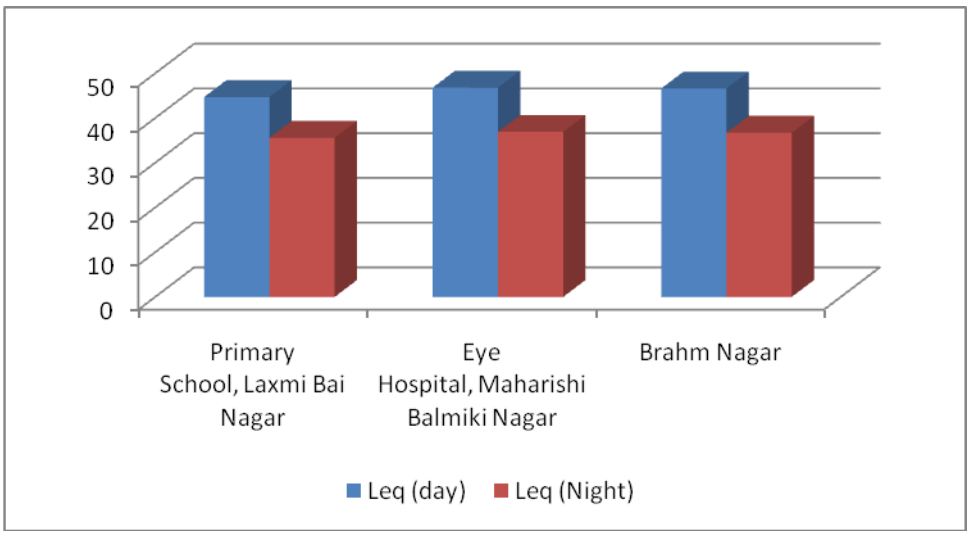


Figure 5-5 *Noise Level in Bithoor Town*

Surface Water

The river Ganga is within 1.0 km distance of the project site. The Central pollution control board regularly monitor river water quality at Bithoor Town, Kanpur Stretch. To study the water quality of River Ganga, the Central Pollution Control Board (CPCB) has set up water quality monitoring stations on the main river. CPCB water quality monitoring stations has been shown in figure 5.6

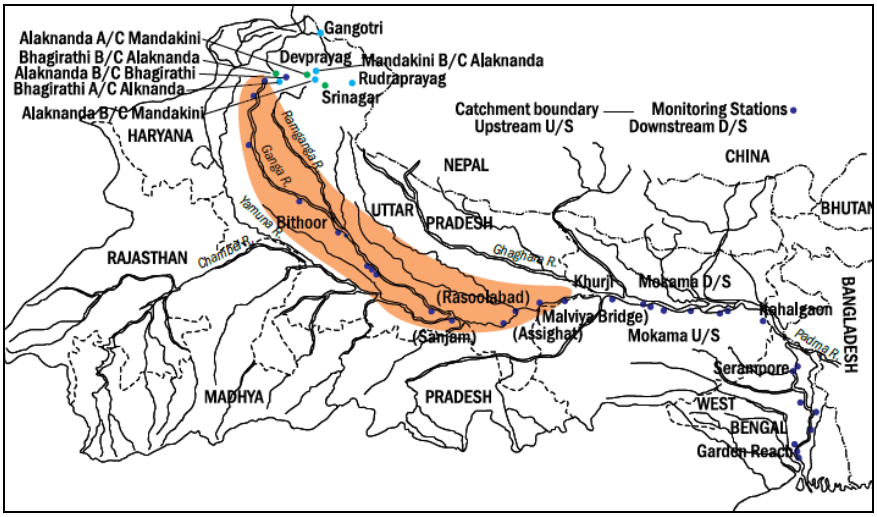


Figure 5-6 *Map showing CPCB monitoring stations in the river Ganga in Uttar Pradesh*

It is observed that Ganga river water quality at Bithoor is 'badly' polluted in terms of BOD load as per CPCB water quality categorisation. The dissolved oxygen concentration complies with standards but BOD and Faecal Coliform concentration does not conform to CPCB standards. BOD as well as Faecal Coliform shows an increasing trend. The Ganga river water quality trend in the Bithoor Town, Kanpur stretch as conducted by CPCB has been shown in the ***Figure 5-77*** to ***Figure 5-99.***

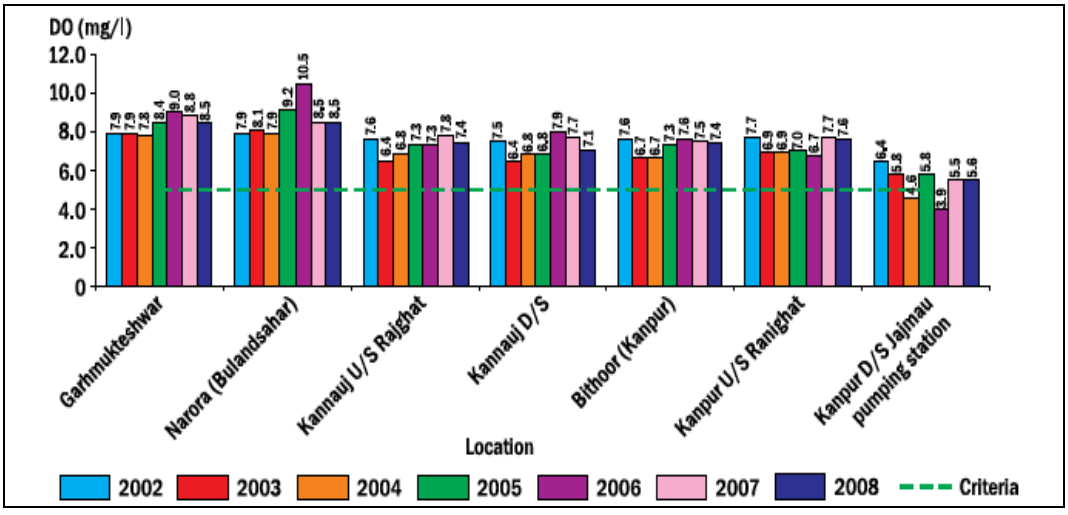


Figure 5-7 *Ganga river water quality trend at Bithoor Town in terms Dissolved Oxygen*

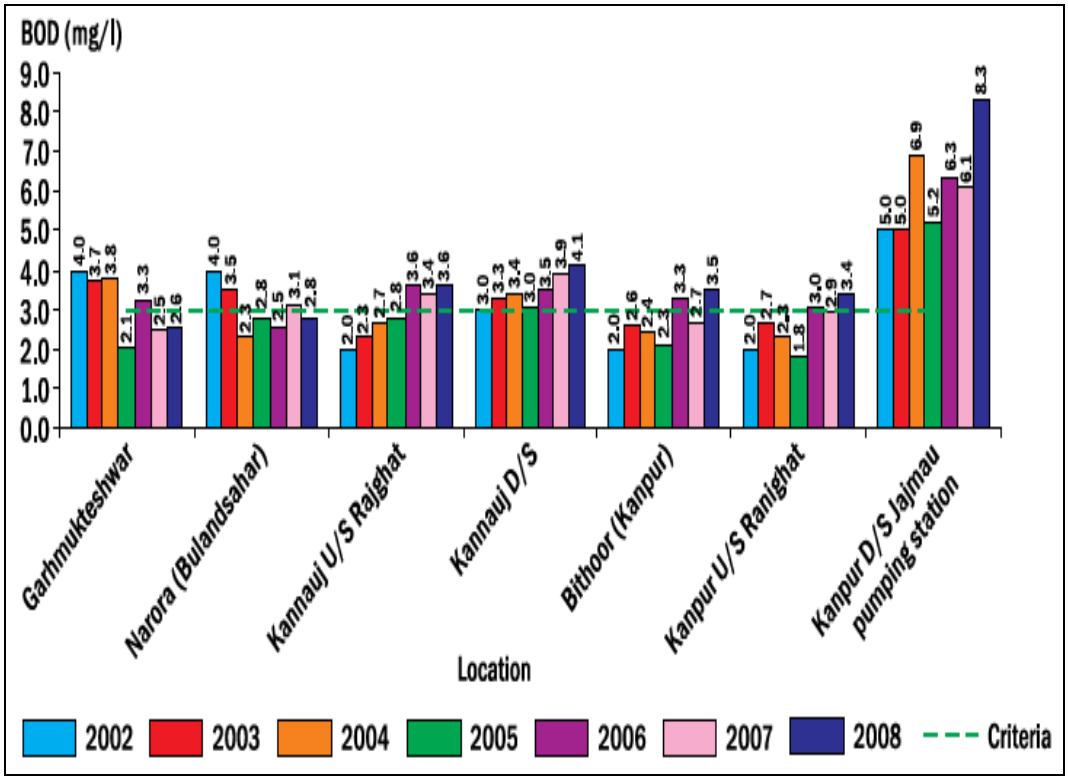


Figure 5-8 *Ganga river water quality trend at Bithoor Town in terms BOD*

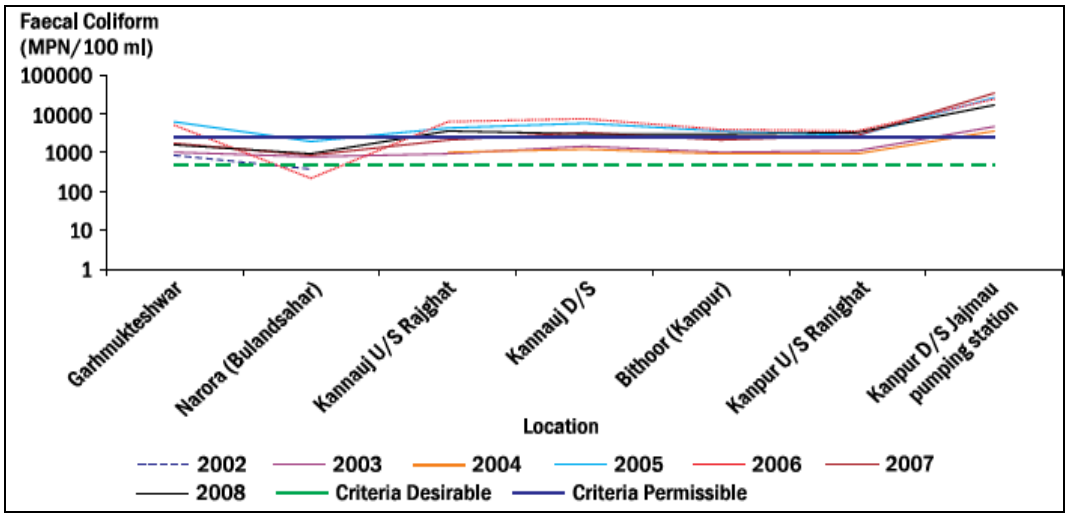


Figure 5-9 *Ganga river water quality trend at Bithoor Town in terms Faecal Coliform*

The water quality monitoring in the upstream and downstream of Bithoor has also been conducted by Ganga Pollution Control Unit, UPJN (Table 5.5). as per the monitoring report the biochemical oxygen demand (BOD) levels at both the stations were found to above the permissible limit of 3.0 mg/l for outdoor bathing waters and also above 2.0 mg/l limit for the drinking water standard, as set by the Indian Standard code. However, the water quality parameter of dissolved oxygen (DO) seems within permissible limits. The minimum DO levels for water as per the Indian standard code ranges from 4.0-6.0 mg/l for drinking and bathing

respectively. The river Ganga water quality in the upstream and downstream of Bithoor town has been depicted in Table 5.5 and Figure 5.10.

Table 5-6 Ganga River water quality at Upstream and downstream of Bithoor town.

Location	pH	COD	BOD	TSS	DO	TDS
Ganga River (Up stream Bithoor)	7.5	32	3.6	40	7.8	135
Ganga River (Down stream Bithoor)	7.7	54	4.2	45	6.7	275

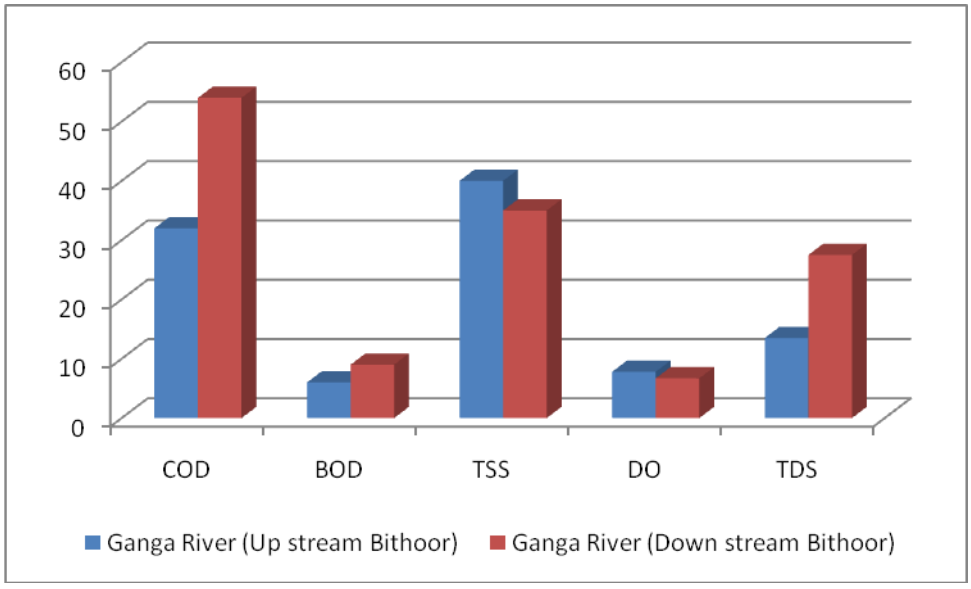


Figure 5-10 *Ganga river water quality at upstream and downstream of Bithoor Town.*

The major source of pollution load at Ganga in Bithoor town is domestic sewage. In the absence of sewerage system in the town domestic sewage is discharged directly through open drains. There are seven nos of open drains which discharge domestic sewage directly to the river Ganga. To study the waste water characteristics drain water quality monitoring was conducted by the Ganga Pollution Control Unit, UPJN. All the Nalas were found to be severely polluted in terms of organic load as well as suspended solids (Table 5.6 and Figure 5.11). Dissolved oxygen was found nil in all Nalas whereas BOD load was found to vary from 89 mg/l to 155 mg/l. Total dissolved solids varies from 845 mg/l to 1225 mg/l. In terms of organic load Kalwari Ghat was found to be most polluted whereas least polluted was Lakshman Ghat Nala among Nalas. In terms of suspended solids Lav kush Ghat Nala is most polluted and least polluted was Bhunee Ghat Nala.

Table 5-7 Water quality Monitoring Report of Nalas discharging sewage in river Ganga.

Location	pH	COD	BOD	TSS	DO	TDS
Bhramha Vart Ghat Nala	8.1	260	137	460	Nil	1180
Lakshaman Ghat Nala	7.6	168	99	345	Nil	950

Lav kush Ghat Nala	8.8	218	128	495	Nil	1225
Bhunee Ghat Nala	7.6	195	102	205	Nil	845
Gudara Ghat Nala	8.2	245	96	390	Nil	1200
Kalwari Gahat Nala	7.8	325	155	415	Nil	1150
Peswa Ghat Nala	7.9	195	89	260	Nil	860

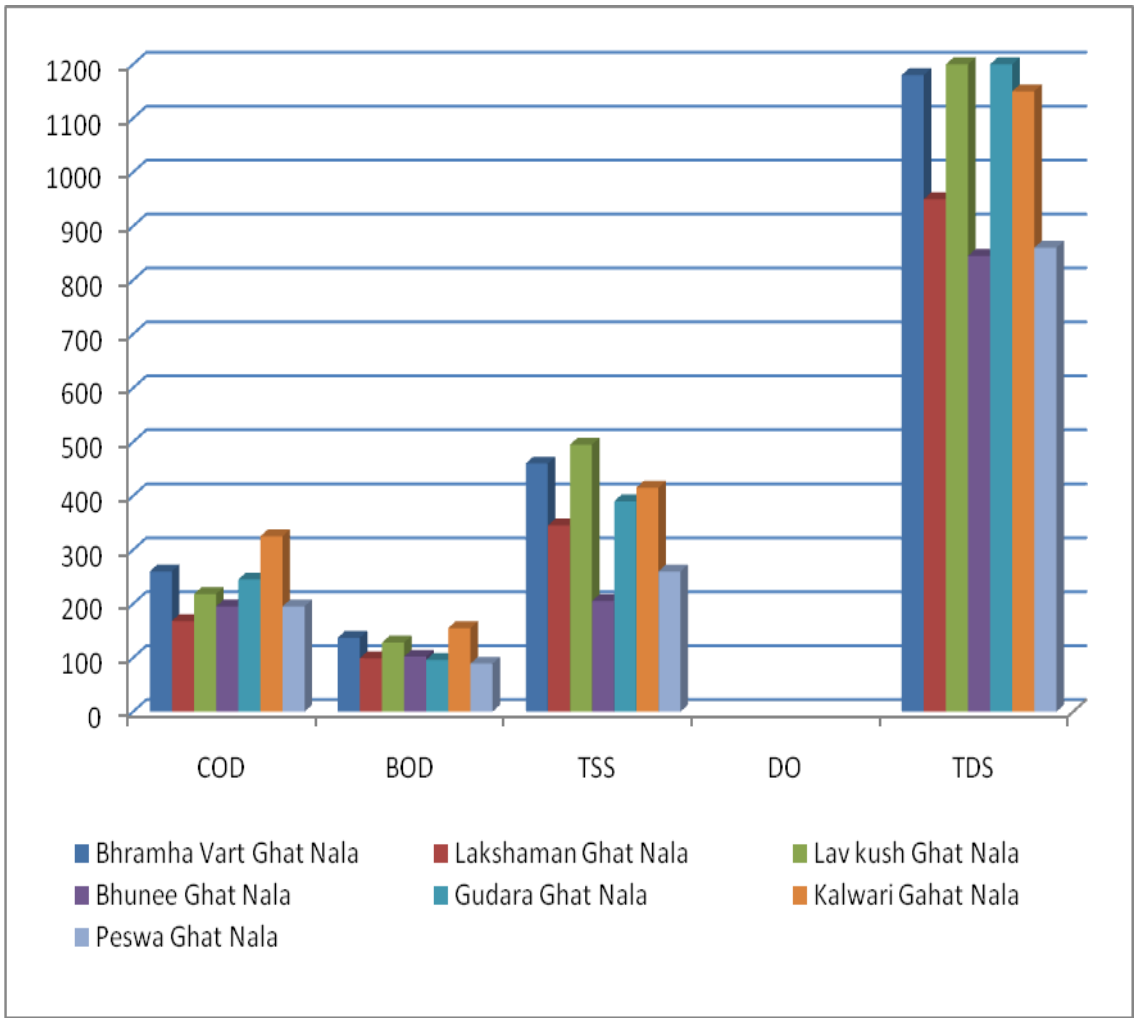


Figure 5-11 *Water quality of Nalas discharging sewage in river Ganga.*

Ecology and Biodiversity

Flora: The species of trees reported are mainly planted, except few species which are naturally growing. These trees are fruit, flower and seed bearing and attract avifauna, small mammals and reptiles. Nesting was commonly reported. Species of trees reported during primary survey are given in Table below.

Table 5-8 List of trees reported in the project affected area

S.No	Common Name	Scientific Name
1.	Peepal	Ficus religiosa
2.	Bargad	Ficus benghalensis
3.	Sissoo	Dalbergia sissoo
4.	Jamun	Syzygium cumini
5.	Neem	Azadirachta indica
6.	Sal	Shorea robusta
7.	Salai	Boswellia serrate
8.	Bahera	Terminalia arjuna
9.	Mango	Mangifera indica
10.	Kadamb	Anthocephalus cadamba
11.	Neem	Azadirachta indica
12.	Coconut	Coco nucifera
13.	Mango	Mangifera Sp
14.	Gular	Ficus Glomerata
15.	Palash	Butea monosperma
16.	Gulmohar	Delonix regia
17.	Kala siris	Albizia lebbeck
18.	Semal	Bombax ceiba
19.	Bair	Zizyphus jujube

Fauna: To study the diversity of fauna, various survey methods were adopted. The survey was mainly carried out at dawn and at dusk to study animal behavior and habitat. This study period is mainly selected as animals are most active.

Secondary data was collected through interaction with the local to establish baseline study for distribution of wild animals in the study area. No wild mammals are reported in the study area, due to anthropogenic activity and urbanized habitat. Domestic mammals are reported in the study area.

Avifauna:

The fauna reported in the inner buffer zone are mainly avifauna (highest diversity) followed by mammals and reptiles. The commonly reported avifauna in the study area during primary survey, with higher diversity are Common crow, Myna, Eagle, Sparrow, Babbler, Pigeon, Cattle Egrets, Red Vented bulbul, Drongo, Sparrow, Indian Roller etc. During site visit higher frequency of birds recorded in the project affected. This is mainly due to availability of nesting habitat, discarded foods from rituals ceremony and fruits bearing trees. Table 5.8 gives the list of avifauna reported in the town.

Table 5-9 List of Avifauna reported in inner buffer zone

S.No	Common Name	Scientific Name
1.	Red Wattled Lapwing	Vanellus indicus
2.	Rock Pigeon	Columba livia
3.	Cattle Egrets	Bubulcus ibis
4.	Cuckoo	Cuculus micropterus
5.	Red Vented Bulbul	Pycnonotus cafer
6.	Common Crow	Corvus splendene
7.	Common Myna	Acridotheres tristis
8.	Common Babbler	Turdoides caudate
9.	Green Bee eater	Merops orientalis
10.	House sparrow	Passer domesticus
11.	Drongo	Dicrurus bracteatus
12.	Egret	Casmerodium albus
13.	Cattle Egret	Bubulcus ibis
14.	Rose ringed parakeet	Psittacula Krameri
15	Spotted dove	Spilopelia chinensis
16	Bank Myna`	Acridotheres ginginianus
Migratory Birds		
17	Pond Heron	Ardeola grayii
18	Night Heron	Nycticorax nycticorax
19	Pied Kingfisher	Ceryle rudis
20	Black-winged Stilt	Himantopus himantopus
21	Crested lark	Galerida cristata
22	Red-breasted Flycatcher	Ficedula parva
23	White-browed wagtail	Motacilla madaraspatensis

Mammals:

During primary survey no wild mammals are reported in the study area. Based on secondary information like interaction with the local, wild mammals like Indian mongoose and five stripped squirrel are reported. Domesticated mammals like goat, sheep, dog, cow, ox, donkey etc. are reported. These animals are domesticated for milk and other commercial purposed.

Reptiles:

Based on forest working Plan and interaction with people dwelling nearby Ghat areas, it has been confirmed that the study area witness poor reptilian distributions. Reptiles like Rat Snakes (Ptyas mucosus), Common Kraits (Bungarus caerulens), Indian cobra (Naja Naja)

etc. has been reported. House Geiko and Garden Lizard are directly sighted during primary visit.

Cultural Properties

The historic town of bithoor, once famous by the Bavan Ghaton ki Nagari, (city of 52 Ghats) is left with only 29 Ghats. Out of 29 Ghats, most beautiful is the Patthar Ghat built by the Raja Tikaitrai. The other important Ghats of Bithoor is the Kalvari Ghat, Other notable sites at Bithoor are the Tripura Sundri temple,Shivanda Ashram, Gyaneshwar Mahadev temple, Janki temple, Pantha Devi temple and Sri Gayatri Dham. However, there is no important cultural and heritage resource notified by Archaeological Survey of India around the project influence area

Baseline Social Status

Bithoor town of District Kanpur Nagar is situated at the right bank of holy river Ganga and it is about 25 km North west form Kanpur Nagar. Bithoor is one of the famous religious places of North India. It has gained a great importance due to Maharishi Balmiki Asram. The history of Bithoor has a place of distinction in the Indian folklore. It is said that Lav and Kush, sons of Lord Rama was born in Bithoor. According to Hindu Mythology, Lord Bramha came to Utpalaranya, Known as Bramhavarta, seat of Bramha, Later, Bramha installed a Shiv Linga which is still worshiped as Bramheshwar-Mahadev at the principal ghat of Bithoor-Bramhaverta Ghat. There is Dhruva Teela where Dhruva penance in order to please Lord Bramha

Bithoor town was famous as Bavan Ghaton ki Nagari (city of 52 Ghats). Now it is left with only 29 Ghats. Main ghats are Tuta Ghat, Patkapur Ghat, Bramhaverta Ghat, Pandav Ghat, Hanuman Ghat, Jhansi Rani Ghat, Kalvari Ghat, Maharaj Peshwa Ghat, Pathar Ghat etc. Other important places in Bithoor are Tripura Sundari temple, Shivananda Ashram, Gyaneshwar Mahadev temple, Pantha Dev temple and Sri Gayatri Dham.

As per census 2001, there were approximately 9652 people with 1652 nos. of households. The ratio of males to females is about 1000 : 792. The literacy rate of the town is about 72%. Some of the salient features have been highlighted in Table 5.9

Table 5-10 Baseline Social status of Bithoor town

Parameters		**Bithoor**	**Percentage of Total Population (%)**
Population	Total	9652	
	No of Households	1652	
	Household Size	5.8	
	Scheduled Caste	1218	12.6
	Scheduled Tribe	NIL	
	Sex Ratio	792	-
	Population below 6 years	1447	14.9

Parameters		Bithoor	Percentage of Total Population (%)
Literacy Rate	Male	3691	80.3
	Female	2223	61.61
Economic Activity	Work Participation	2602	26.95
	Main Workers	1847	19.13
	Marginal Workers	755	7.8
	Non-workers	7050	71.55
Category of Workers	Cultivators	334	3.5
	Agricultural Labourers	69	<1
	Household Industry	28	<1
	Other Workers	1416	14.67

Source: Census of India 2001

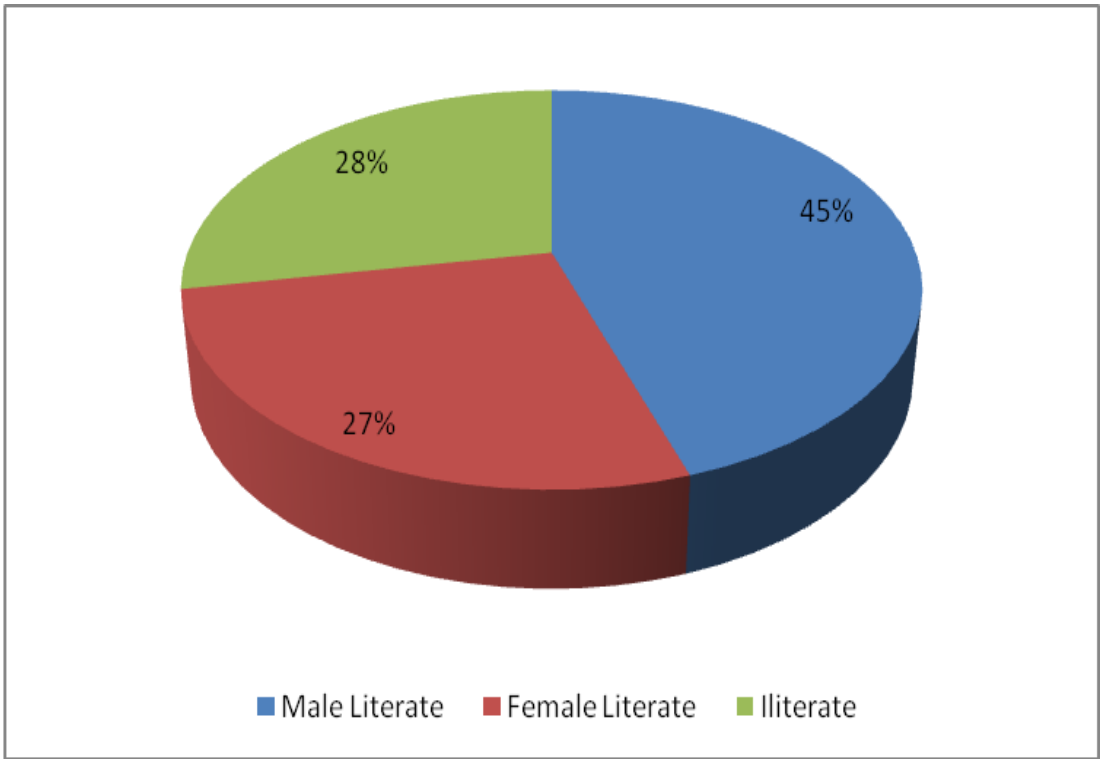


Figure 5-12 *Literacy Rate of male and female population.*

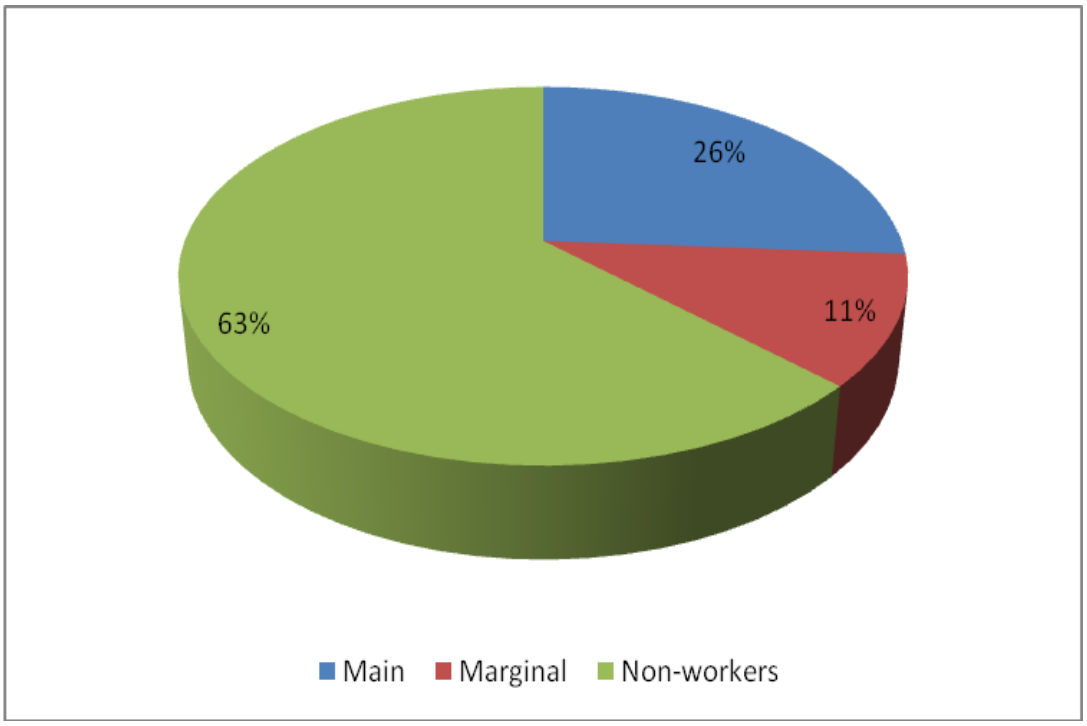


Figure 5-13 **W***ork participation rate of Bithoor town.*

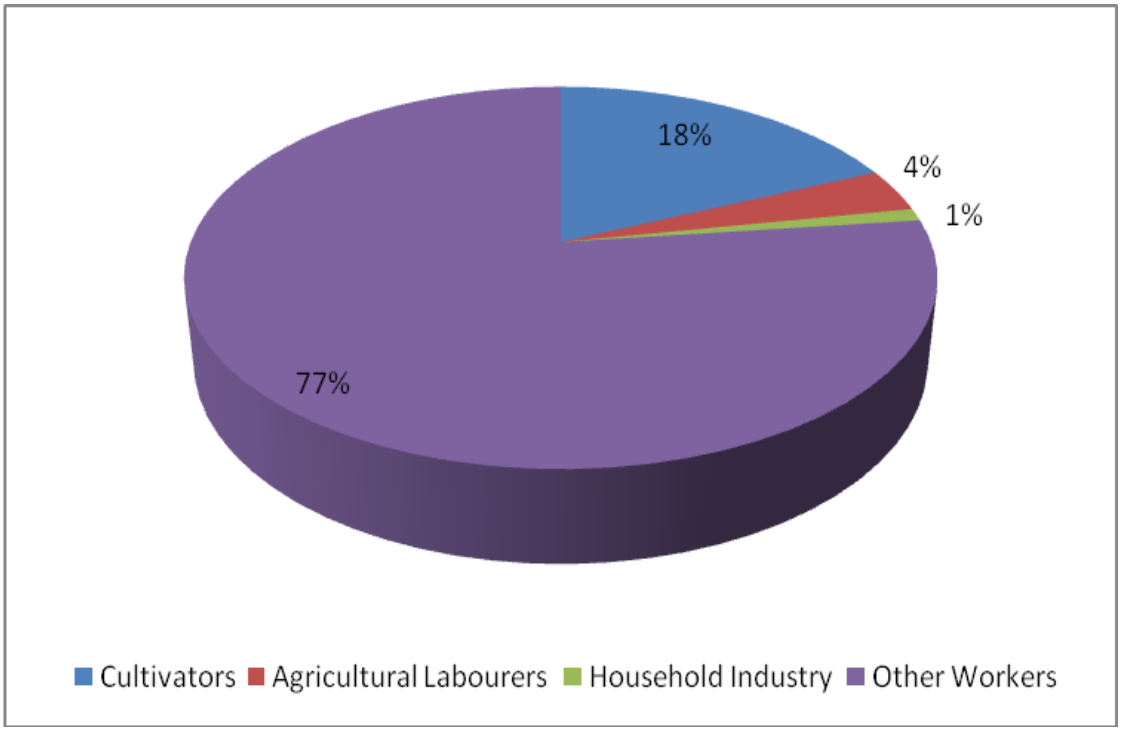


Figure 5-14 **C***ategory of workers of working population of Bithoor town.*

6.0 Analysis of Alternatives

Analysis of alternatives involves a thorough study of the possible future conditions in the project study area of the possible future conditions in the project area in response to a set of alternatives without the project or status quo condition.

6.1. Analysis of Alternative Site

The project is construction of sewage treatment plant based on waste stabilisation pond technology. Limited environmental impacts are expected during construction. Little air, water and noise pollution is expected from the proposed construction activities; however these are localized impacts and can be minimized with proper construction schedule and precautionary approach. Since the project is in an existing piece of land no alternate sites were considered. Moreover, he proposed plant site is in accordance with MoEF guidelines:

- There are no National Parks/Sanctuaries within 10 km radius
- There are no eco-sensitive areas within 10 km radius of the project

Sewage Pumping Stations: The Intermediate Sewage Pumping Stations (IPSs) are proposed at two locations. In Zone-I sewage pumping station of 2.10 mld for design year has been provided near the Goodhari Ghat Nala, while in zone-II sewage pumping station of 0.47 mld has been provided near the Kalvari Ghat Nala. The sewerage system has been designed to convey the sewage against the gravity. The site earmarked for constructing the proposed sewage treatment plant is in the upstream side of the town. The site is about 4-5 m high from the general topography of the town and is undulating. Since, the STP site is 4-5 m above the natural ground level, the cost of laying sewers and pumping to the site would be high. Therefore, to minimise the pumping cost STP could be planned in downstream side along the natural gravity. However, since no land is available in the downstream side, therefore no alternative was available. Two land parcel of 900 sqm have been provided by the chairman of town area of Bithoor for pumping station on both the locations.

6.2. Analysis of Alternative Technology

One of the most challenging aspects of a sustainable sewage treatment system design is the analysis and selection of the treatment processes and technologies capable of meeting the requirements. The process is to be selected based on required quality of treated water. While treatment costs are important, other factors should also be given due consideration. For instance, effluent quality, process complexity, process reliability, environmental issues and land requirements should be evaluated and weighted against cost considerations. A comparative assessment of different wastewater treatment technology has been given in table below:

Table 6-1 Comparative analysis of different natural wastewater treatment technology

Technology	Merits	Demerits
Waste Stabilisation Pond	• Relatively simple operation and maintenance • No external energy requirement and hence less vulnerable to power cuts • No primary treatment required • Energy production possible but generally not achieved • Low sludge production • No special care or seeding required after interrupted operations • Can absorb hydraulic and organic shock loading	• Post treatment required to meet the effluent standard • Anoxic effluent exerts high oxygen demand • Large Land requirement • More man-power require for O&M • Poor faecal and total coliform removal • Foul smell and corrosion problems around STP area • High chlorine dosing required for disinfection. • Less nutrient removal
Constructed Wetland	• Simple to construct and operate and maintain • Low operating and maintenance cost • Self sufficiency, ecological balance, and economic viability is greater • Possibility of complete resource recovery • Good ability to withstand hydraulic and organic load fluctuations	• Requires large area • Large evaporation loss of water • Not easy to recover from massive upset • Effluent quality may vary with seasons • No energy production • No nutrient removal • Odor and vector nuisance
Activated Sludge Process (ASP)	• Land requirement is less compared to others • Reduced flies and odour nuisance • Better control possible	• High Capital cost • High Power requirements • Skilled labour is required for O & M.
Extended Aeration (EA)	• High quality effluent • Lesser complicated design and operation • Capable of treating shock loads • Well stabilized sludge	• Higher power requirements for aeration • Relatively larger tanks • Mainly used for smaller plants
Sequencing Batch Reactor (SBR)	• Simplified process • Final clarifiers and Return Sludge pumping not required. • Compact • Operation is flexible; nutrient removal possible • Better SS settling and high effluent quality • Batch system eliminates peak surges • Automatic control of MLSS and SRT through sludge wasting.	• High Peak flows can disrupt operation • Skilled labour required • Batch discharge may require equalization prior to disinfection • Frequent sludge disposal • Higher specific energy consumption
Membrane Bio Reactor (MBR)	• High quality nitrified effluent • Compact • Plant expansion is simple • Capable of absorbing hydraulic and organic shock loads. • No secondary clarifier required.	• High capital & O&M cost • Extensive piping and valves • Higher maintenance skill required
Trickling filter	• Capacity to handle shock loads • Dependable performance • Minimum supervision.	• Capital costs and power requirements are high. • Mosquito and odour nuisance

	• Lesser land requirement in comparison with other conventional systems.	is high. • Equipment is prone to heavy corrosion.
Fluidized Aerobic Bioreactor (FAB) and Moving Bed Bioreactors (MBBR)	• Long SRTs. • High quality effluent (low SS and COD) • Compact-lesser land requirement. • Low temperature sustaining capability • No sludge recycling • Fully digested sludge • High coliform removal.	• Separate secondary settling tank required with sludge removal facility • Sensitive process • High power requirement • Skilled Manpower required for O & M.
Submerged Aerobic Fixed Film (SAFF)	• Not restricted by conventional limits of (MLSS). • Clear treated water with consistent outlet BOD. • Lesser area than conventional systems • Lesser bacterial sloughing and does not require extensive sludge management systems • Lesser power • Low operation and maintenance costs. • Installation can be below ground.	• Clogging of reactor due to absence of primary sedimentation. • Reliance on proprietary filter media. • Strict quality control on media. • High reliance on external energy input. • Requires skilled manpower. • Yet to be validated on reasonable number and sizes of STPs in India

The proposed sewage treatment plant is based on waste stabilisation pond technology. Since, electricity status of the town is not satisfactory waste water treatment based on natural system has been considered. Among the natural waste water treatment system STP based on constructed wetland technology, oxidation pond technology and Upflow Anaerobic Sludge Blanket (UASB) followed by Down Hanging Sponge (DHS) system was also considered. However, since sufficient land is available therefore least cost intensive and simple in operation and maintenance waste stabilisation pond technology was selected for the project.

Sewage treatment plant based on Waste Stabilisation Pond (WSP) technology is a proven natural waste water treatment system and has some specific advantages compared to other natural waste water treatment system. As per NGRBA guideline treated sewage can't be discharged directly to the river. Therefore, sewage treatment plant based on Waste Stabilisation Pond Technology was selected since the treated water can be recycled for agroforestry. Some specific advantages of WSP process have been highlighted below:

- Simple to construct and operate and maintain
- Self sufficiency, ecological balance, and economic viability is greater
- Possible recovery of the complete resources
- Good ability to withstand hydraulic and organic load fluctuations
- Can be built and repaired with locally available materials
- No external energy required for operation
- Low in construction and very low operating costs
- High reduction in pathogens
- Can treat high-strength wastewater to high quality effluent
- Generally reliable and well-functioning
- Effluent can be reused in aquaculture or for irrigation in agriculture

Therefore, Sewage treatment plant based on Waste Stabilisation Pond (WSP) was selected for the project.

7.0 Public Consultation & Stakeholder Participation

Consultation is a process in the project cycle in which an attempt is made to involve the public as stakeholders in project preparation through consultation and focus group discussion meetings. Stakeholders' participation and consultation have been viewed as a continual course of action, which promote public understanding and help eradicate hurdles in the way of the project. Consultation during project preparation as an integral part of the social assessment process not only minimizes the risks and unwanted propaganda against the project but also removes the gap between the community and the project formulators, which leads to timely completion of the project and making the project people friendly.

7.1. Methods of Consultation

Keeping in mind the objective of minimizing adverse impact and the need of the stakeholders' participation for the smooth implementation of the project, consultation with the members of different sections of society was carried out. In this regard a meeting was organized at Bithoor municipality office. Consultations were carried with different sections of people in the presence of Chairman, Bithoor Municipality Office on 24.09.2013 to elicit required information (their view & opinions). The main objectives of undertaking these consultations were:

- To seek inputs from the stakeholders on the project design and understand the priorities / concerns of the communities
- To make people aware of the project impacts
- Dissemination of information to build awareness among people and inform them about the objective of the project.

A summary of different issues discussed with the population is given the following table.

Table 7-1

Date	Name of the Participants	Nature of participants
24.09.2013	Dr. Nirmala Singh	Chairman, Bithoor Municipality
	C. K. Shukla	Representative, Bithoor Municipality
	R. K. Mishra	Engineer, Ganga Pollution Control unit, UPJN
	Sudha Mishra	Local resident
	Md. Salim	Local resident
	Vinod kumar	Local resident
	Srinibas	Local resident
	Rani Wak	Local resident

Figure 7-1 Public consultation with local people

7.2 Public consultation

Public consultation is a continual process and is being carried out at all stages throughout the project period. In order to document the issues raised by the potential affected peoples, public consultations were conducted in all focussed wards. Some of the affected persons expressed their views about the proposed sewerage Development project. Focus Group discussion were conducted during the ESMP preparation period. The following reputed persons had been discussed Sewerage work Under NGRBA, Bithoor Town-

Date	**Name of Reputed Persons of Bithoor Town**
25th Sep 2013, Time: 10:00 to 11:00	Sri Sailendra Kumar Yadav, Corporator, Bithoor Town,
26th Sep 2013, Time: 10:00 to 12:00	Sri Laxmi Kant, Ex- Principal, Ram Janki Inter College, Bithoor.
27th Sep 2013, Time: 13:00 to 14:00	Sri Munna Lal Sharma, Rt. Principal.
07th Oct 2013, Time: 10:00 to 11:00	Sri Om Prakash Sharma, Rt. Principal.
08th Oct 2013, Time: 10:00 to 12:30	Sri Digvijay Singh, Principal, Ram Janki Inter College, Bithoor.
09th Oct 2013, Time: 10:00 to 11:30	Dr. Ram Narayan Lal, Lecturer
10th Oct 2013, Time: 10:30 to 11:00	Dr. Vyas Narayan Pandey, Lecturer.
14th Oct 2013, Time: 12:00 to 14:30	Sri Radhey Shyam Shukla, lecturer, Sri Subedar Pandey, Sri Abhijeet Singh Sanga, (Congress Leader) Sri Shivdeen Dwivedi, Chairman of Ganga Shabha, Bithoor Town,

21th Oct 2013, Time: 14:00 to 15:30	Sri N.K. Dixit, Gangotri Builder, Dr. Indra Dixit, Lecturer
22th Oct 2013, Time: 15:00 to 16:00	Sri Mohd. Hafiz Khan, Advocate.

The sewerage project proposal has been discussed in local community. Sewer constructions will invariable lead to road closures, which will adversely affect shops on those streets. The first priority is for the contractor to take the necessary measures to ensure that pedestrians always have access to shops, vendors, etc. For mobile vendors, this may include adjusting the location of the cart, etc. to a similar location in the immediate vicinity of the original location for the duration of the project. Projects should also proceed on schedule so as to minimize disruption.

Additionally, clean-up of debris and clearance of blockages should commence immediately after project completion so as to remove any potential obstacles that might prevent customers from accessing businesses or other disruptions.

In the event that the contractor, despite best efforts, is unable to avoid blockages of the roads and/or disruption of local businesses, some compensation is necessary. A summary of different issues discussed with the potentially affected persons are given in the following table.

Details of public consultations

Sections on Issues	Target Groups	Major Issues	Date	No. Of participants
Proposed the sewerage system	Street hawker	Sewerage Network	25th Sep 2013, Time: 10:00 to 11:00	5
Impact on Biological Environment	Vegetable sellers & boatman	Ecology and Sustainable Agriculture	26th Sep 2013, Time: 10:00 to 12:00	12
Impact on Occupational Health and Safety	Slum dwellers	Health and Safety	27th Sep 2013, Time: 13:00 to 14:00	10
Traffic Congestion	Local people	Traffic Management	07th Oct 2013, Time: 10:00 to 11:00	11
Social Environment	Religious persons	Cultural heritage	08th Oct 2013, Time: 10:00 to 11:00	11
Noise Environment	College students	Level and Intensity of Noise	09th Oct 2013, Time: 10:00 to 11:00	8
Water Environment	House hold women	Water Quality	10th Oct 2013, Time: 10:00 to 11:00	7
Land Environment	Local people coming to river Ganga	Check for land contamination and reclamation	11th Oct 2013, Time: 10:00 to 11:00	10

The ESMF currently mandates compensation only in the case of permanent livelihood loss or displacement and provides no provisions for livelihood loss of mobile vendors. Additionally, no regulation, policy, guideline, etc. exists which can provide precedent or guidance in this instance. ESMF clearly states that mobile/ambulatory hawkers: fruit cart vendors, etc. who can easily relocate fall into this category. These vendors are most eligible for a temporary relocation just outside the construction area, and will thus not be eligible for compensation as is the case for this proposed project. However if during the construction of the project any party faces livelihood loss due to the proposed project, then that party should be compensated according to the entitlement matrix given in the ESMF report.

Some issues which local community expects from the project are awareness to prevent disease and maintain hygienic conditions. Provide sewerage system which will help in maintaining cleanliness in the surrounding.

8.0 Environmental and Social Impacts

Pollution abetment projects may prove beneficial for the environment and society or they may have some adverse impacts as well. Planners and decision makers have realized the importance of understanding the consequences of any such projects on both environmental and social sectors, and have started taking steps to avoid any adverse impacts. Based on the major findings obtained from the field visits and secondary data analysis, the possible environmental and social issues with reference to the proposed sewer works in Bithoor Town is been discussed in these sections. The proposed sub-project consists of three major activities which include:

- Construction of approximately 32 km long sewerage network including all required trunk/ branch/ lateral sewer.
- Construction of STP based on waste stabilization pond
- Construction of sewage pumping station

The construction activities would generally include earthworks (excavation, filling, shuttering, compacting), civil construction (sewer lines, STP, SPS, etc.) and E&M installation and commissioning.

8.1. Potential Environmental Impacts

The environmental impact of the proposed project may be categorised in two phases:

- During the construction phase
- During the operation phase

The activities identified for project under each phase are:

A. Construction phase

1. Site clearing and levelling
2. Excavation & Foundation
3. Transportation of construction materials, equipments & machineries
4. Construction of STP & related infrastructure

B. Operation phase

1. Operation of STP
2. Disposal of treated effluent

8.1.1 Impacts during construction phase

The impacts of construction stage activities on the various environmental parameters are examined below:

8.1.1.1 Impact on Air Environment

During the construction phase it is expected emissions from the diesel generator(s). Another source of air pollution is from materials transport through heavy vehicles to the site. These emissions are temporary in nature. Excavators, cranes, DG sets, welding machines, trucks and trailers for transportation of materials will also contribute to gaseous emissions through use of diesel as a fuel. Based on the field observation of ongoing projects and

interaction/consultation with stake-holders, it is expected that the levels of dust (RSPM and SPM), carbon mono-oxide (CO), hydrocarbons and NOx (NO &NO_2) is likely to increase during the construction phase mainly because of:

- Excavation, backfilling, compaction activity and movement of vehicles on un-paved roads (increases dust level)
- Vehicle exhausts from construction machinery and from light and heavy vehicles for transportation of pipes and construction material like cement, etc (increases NO_2).
- Use of portable diesel generators and other fuel fired machinery (increases CO).

However, the emission of NOx, SO_2 will be is not expected to cause any change in the ambient air quality. During pipeline laying the following activities cause air pollution:

- Emissions from equipment used for construction of the pipeline.
- Emissions of dust during excavation of soil
- Emissions from the exhausts of vehicles used for the transport of the workers, the transport of construction materials and equipment and construction vehicles themselves

During pipeline laying, air emissions are not expected to adversely impact even the area close to the pipeline. However, the project involve construction of only 32 km sewer lines, therefore, considering all air pollutants, it is not expected that air emissions will exceed air quality standards (National Ambient Air Quality Standards.

There might be some impact on air quality that may take place during construction which would be caused by emissions of dust during excavation for the pipeline as well as from the earth material stored in the area. The potential for dust in the form of particulate matter to be emitted during construction is strongly dependent on the type of activities taking place, such as the movement of vehicles along the working width and their speed, soil stripping, trench excavation, back- filling and reinstatement.

8.1.1.2 Noise levels

The proposed construction activities are expected to increase the noise levels mainly due to plying of construction vehicles, pumping machines, use of portable generators, mechanical machinery such as cranes, riveting machines, hammering etc. There will be an increase in noise levels in areas situated close to the road due to movement of trucks and construction activities. Temporary impacts may especially be felt at educational facilities like schools/colleges (Primary school and GS Memorial public school at Laxmi Bai Nagar, GIC Inter College, Law College at Brahma Nagar), hospitals (Eye hospital, Maharishi Balmiki nagar, Hospital, Pesewas Nagar) etc), cultural/religious centers including all temples, mosques, the region. However, the impact of truck movements and construction activities on noise level in residential areas situated at 50 meter and beyond from the road will be insignificant considering the excess attenuation and will be below the stipulated standard of CPCB, i.e. 55 dB(A) during day time.

Increase of noise level at night may produce disturbances, causing sleeplessness in people in the vicinity of the site in case construction activity is extended into the night hours. As per the baseline environmental status, the noise levels in Bithoor Town are expected to be within permissible limits as the area is mostly residential and has limited commercial, and no industrial area. However, these impacts are of temporary nature, lasting only during the construction period.

8.1.1.3 Impact on Land Environment

The proposed project is construction of sewerage facility for Bithoor town. The area is a low density area with sufficient availability of land. The land for STP and sewage pumping stations have been allocated by District Administration, Kanpur Nagar and Chairman, Town Area of

Bithoor respectively. Since the present project does not involve any major issues of land acquisition no major impact on land environment is anticipated. However, local land and soil may get affected during construction work as it would involve land clearing. Normally removal of vegetation and land clearing is associated with soil erosion, however these issued are localised temporary effect and associated with construction phase only. Excessive debris, trash or construction remnants (e.g. dirt piles) may create problems related to drainage, unhygienic conditions and poor aesthetics. If construction materials are handled appropriately, it may affect agricultural lands minutely.

8.1.1.4 Surface and Ground Water Hydrology

The proposed project being located near the river Ganga there may be potential for temporary contamination of the river Ganga via the various drains and nallas, due to run off of finer materials such as construction powders, fluids and greases during rainfall, if not appropriately managed or in the event of an accident,.

8.1.1.5 Impact on Biological Environment

No natural forest area has been observed in the study area. There are no notified ecological sensitive locations, migratory paths, sanctuaries, etc. within the study area. As detailed out there are no endangered floral species in the study area. The proposed project does not envisage any destruction or displacement of any endemic floral or faunal species, hence the impact will be insignificant. Moreover, as the construction and operation of STP is going to result in the reduction of pollution load on the receiving water body, there is no likelihood of any negative impact on the aqua-life.

8.1.1.6 Impact on Socio-Economic Environment

All the activities to be carried out during construction and operation phases will require skilled and unskilled labourers, hence creating temporary as well as permanent employment for local people. As the proposed project is located within the city limit with lot of employment opportunities, it is likely to have positive socio-cultural economic impact.

8.1.1.7 Impact on Occupational Health and Safety

The construction of STP facilities is not going to involve the large scale construction activities; however, all the workers will be equipped with necessary personal protective equipments (PPE) and will be trained for safety aspects to be followed during working hours.

8.1.1.8 Environmental sensitive areas

Based on observations and findings from field visits, interaction with government officials and consultation with local residents, an assessment of the environmentally and ecologically sensitive areas was made. The area does not have any flora and fauna components which require any special attention from conservation point of view. There is no environmental sensitive area within 10 km radius of the project.

With regard to sensitive aquatic areas and water bodies, there are none. It was also observed that the major land use pattern of the area is residential with agricultural and no forest areas.

8.1.1.9 Traffic Congestion

Due to the excavation work which will take place along the roads of the city, there a slight disturbance in the traffic movement is expected. Any excavation along the roads will inhibit traffic movement. However, the area is a low density area and the project involves construction of only 32 km of sewer lines. No major traffic congestion due to the project is anticipated.

8.1.2 Impacts during operation phase

The impacts of operation stage activities on the various environmental parameters are examined below:

8.1.2.1 Air Environment

As the STP does not involve any type of unit operations releasing the gaseous emissions, hence, the impact on ambient air quality is not going to be affected.

8.1.2.2 Water environment

Water resources in the project area would be the most positively benefited. The probably environmental impacts related to water during operation stage may include unpredictable events such as:

- Temporary flooding of adjacent areas due to accidental leakages/bursts and also due to blockages and backlogging of lines.
- Water pollution and possibility of mixing with water supply line due to leakages/ overflows from the sewer lines

8.1.2.3 Noise quality

Improper handling and irregular maintenance of operating machines including pumps, generators, etc may lead to increased noise pollution during operation activity.

8.1.2.4 Impact on Occupational Health and Safety

As the operation of STP facilities involve handling and use of chemicals the safety of workers invites safety considerations. As the workers will be equipped with necessary personal protective equipments (PPE) and will be trained for safety aspects to be followed during working hours, the impact will be insignificant as a whole.

8.2. Impact on livelihood

Sewer constructions will invariable lead to road closures, which will adversely affect shops on those streets. The first priority is for the contractor to take the necessary measures to ensure that pedestrians always have access to shops, vendors, etc. For mobile vendors, this may include adjusting the location of the cart, etc. to a similar location in the immediate vicinity of the original location for the duration of the project. Projects should also proceed on schedule so as to minimize disruption.

Additionally, clean-up of debris and clearance of blockages should commence immediately after project completion so as to remove any potential obstacles that might prevent customers from accessing businesses or other disruptions.

In the event that the contractor, despite best efforts, is unable to avoid blockages of the roads and/or disruption of local businesses, some compensation is necessary. The ESMF currently mandates compensation only in the case of permanent livelihood loss or displacement and provides no provisions for livelihood loss of mobile vendors. Additionally, no regulation, policy, guideline, etc. exists which can provide precedent or guidance in this instance. ESMF clearly states that mobile/ambulatory hawkers: fruit cart vendors, etc. who can easily relocate fall into this category. These vendors are most eligible for a temporary relocation just outside the construction area, and will thus not be eligible for compensation as is the case for this proposed project. However if during the construction of the project any party faces livelihood loss due to the proposed project, then that party should be compensated according to the entitlement matrix given in the ESMF report.

8.3. Conclusion

Based on the overall secondary data analysis and field investigation, the proposed project is expected to benefit the Bithoor Town, Kanpur City, as the wastewater that currently flows untreated into the Ganga river will be captured, treated and the remainder of the treated

effluent will be allowed to flow into the river. The likely beneficial impacts of the projects include:

- Improvement in sewerage collection and treatment within the cities/towns
- Prevention of storm drains carrying sanitary sullage or dry weather flow
- Prevention of ground water and soil pollution due to infiltration of untreated liquid waste
- Prevention of discharge of untreated sewage into River Ganga
- Improvement in water quality of River Ganga, a national resource
- Improvement in environmental sanitation health and reduction in associated health hazards within the cities/towns
- Improvement in quality of life, human dignity and increased productivity

9.0 MITIGATION AND MANAGEMENT PLAN

9.1. Environmental Management Plan

An Environmental Management Plan (EMP) is site specific plan developed to ensure that the project is implemented in an environmentally sustainable manner where all stakeholders including the project proponents, contractors, sub-contractors, consultant understand the potential environmental risks arising from the proposed project and take appropriate actions to properly manage that risk. Adequate environmental management measures need to be incorporated during the planning phase to minimize any adverse impact and assure sustainable development of the area. EMP has been formulated for mitigation of the adverse impacts and is based on the present environmental conditions. This plan helps in formulation, implementation and monitoring of environmental parameters during and after the commissioning of the project.

Any development, especially related to industries, is usually associated with certain positive as well as some negative impacts on the environment. However, the negative or adverse impacts cannot possibly rule out systematic development. At the same time, adverse impacts cannot be neglected. The impact identification and prediction has been made keeping in view the predicted results primarily based on design details and generated baseline data monitored during study period. In view of the above, project proponent shall maintain the specifications / details / data as provided for preparation of the report or may try to improve further towards environmental betterment during various phases of implementation of proposed project. The Environmental management plan (EMP) relevant to construction and operation phases is delineated in the foregoing sections. The EMP is required to ensure sustainable development in study area of the proposed project site, hence, it needs to be an all encompassing plan for which the Government regulating agencies working in the region and more importantly the affected population of the study area need to extend their cooperation and contribution.

9.1.1 EMP during construction phase

The construction phase impacts would be mainly due to civil works such as site preparation, leveling, foundations, transportations of construction materials and machineries, and installation of machineries. The construction phase impacts are temporary and localized phenomena except the permanent change in local landscape at the project site.

9.1.1.1 Air Environment

The impacts identified and quantified above are inherent with any developmental project and cannot be completely eliminated. However by adopting suitable measures and use of appropriate equipments, their impact would be reduced. Some of the important mitigation measures are given below to follow project proponent during project construction:

- All loose construction material during transportation should be properly covered
- All construction machines should be well maintained
- Ambient air quality should be regularly monitored.
- The vehicles and machinery deployed during construction will comply emission standards prescribed by CPCB.
- A stack will be provided to DG sets to achieve proper dispersion of gaseous emissions.

9.1.1.2 Noise Environment

- Proper maintenance of construction equipment/machinery for controlling excessive noise levels
- Use of silencers/mufflers for high noise generating equipments
- Restricting the movement of vehicles and noise prone activities during nighttime as nighttime noise levels are more sensitive
- Ambient noise levels should be regularly monitored at critical locations.

9.1.1.3 Water Environment

During the construction phase the water will be utilized for civil work and drinking water for labors. As the laborers will be available from nearby local area, there may not be any need of labor camps. The source of water supply will be from Municipal Corporation.

- Laborers will be provided with adequate water supply for drinking purpose and sanitation facilities.
- Any wastages/leakages will be avoided at all possible locations /opportunities.

9.1.1.4 Land Environment

- As soon as the construction is over, the surplus earth will be utilized to fill up low lying area, rubbish will be cleared and all unbuilt surface reinstated.
- Loose earth if any, will be suppressed by sprinkling of water to control the dust.

9.1.1.5 Biological Environment

Since, the construction activities involved in the establishment of STP, do not have any specific impact on the biological environment, no specific measures are required to be undertaken.

9.1.1.6 Occupational Health & Safety

The nature of the construction activity involved is of general nature, not requiring any specific measures. However, all the necessary safety measures required during the construction of treatment units and installation of mechanical equipments will be observed and maintained as per the standard procedures and requirements.

9.1.1.7 Safety Signs and Signals

To ensure the health and safety of workers and visitor, there shall be provision of safety signs and signals in and around plant premises. The employers shall provide specific safety signs whenever there is a risk that has not been avoided or controlled by other means.

9.1.2 EMP during operation phase

There are two distinctive phases of this overall project: Effluent Conveyance System (ECS) & STP. The overall management of the project will be looked after by Ganga Pollution Control Unit, UPJN. The technical and scientific staff will be appointed under Chief Engineer. Primary focus of the present EIA study is on construction and operation of treatment units of STP. However, the collection and conveyance system of effluent being integral part of the overall project, a brief account of operation & management plan for the same has been highlighted below. The O & M of plant shall be outsourced from qualified private companies under a contract pinning responsibilities and accountability. The issues relating to plant performance, technical difficulties, operations problems, etc. will be resolved by Operations Management Committee (OMC).

The Operations Management Committee will ensure that the STP operates to its best potential and provide recommendations for upgradations as and when required. Chief Engineer will look after day to day issues of STP operation and conveyance related issues. There will be a team of qualified personnel from Engineering and Science field having experience to operate STP efficiently and effectively. The OMC will ensure to comply with all the directives issued by competent authority time to time for smooth functioning of STP and legal compliance in this regards.

Project proponent will set up the laboratory equipped with facilities for carrying out analysis of water and wastewater.

9.1.2.1 Water Environment

- The quality of effluent coming to STP will be monitored by OMC continuously to ensure proper functioning of STP treatment units to achieve prescribed disposal norms.
- The performance of STP will be continuously monitored and any deviation in performance will be subjected to corrective measures through root-cause analysis.
- Preventive maintenance schedule for STP machineries will be prepared and strictly implemented to ensure the effective and efficient operation of STP units.
- Enough care will be taken to prevent any leakages / accidental spillages from STP treatment units.

9.1.2.2 Occupational Health & Safety

For health and safety of workers, following measures will be followed:

- Staff will be trained for safe handling of chemicals and operation of treatment units.
- All personnel working at STP will be provided with necessary personal protective equipment's (PPE).
- Adequate no. of fire extinguishers will be provided in the laboratory.
- Power availed from express feeder will have stand-by arrangement of power supply; in an unlikely event of complete electrical breakdown, all automatic valves at collection sumps will be closed and industries will be forced to shut down.
- The management will arrange required routine medical facilities at the site as well as will have tie-up with nearby hospital in case of emergency.

9.1.2.3 Proper Operation and Maintenance

Proper operation and maintenance will be ensured of the plant machinery. Regular maintenance will be undertaken for smooth operation.

Table 9-1 Environment Management Plan for STP

Activity		Potential Negative Impact/Concern	Duration of impact	Mitigation Measures
Construction Phase				
Sewage treatment plant	Excavation	Loss of topsoil due to excavation activities.	Temporary	• Excavation shall be planned in such a manner that such that no damage occurs to existing structures. • Top soil should be separately stockpiled and utilized for green belt development or landscaping after completion of work.
		Construction waste	Temporary	• All the associated construction waste should be properly managed by storing and disposing off at suitable refusal sites approved by DBO engineer.

		Nuisance due to domestic solid waste disposal	Temporary	• Provide two bins for recyclable and non-recyclable wastes. • Ensure that recyclable and non-recyclable wastes are collected in segregated manner in theses bins before disposal. Recyclable material should be sold. Non-recyclable material should be disposed to designated land fill area of the city. • Provide adequate sanitation facility for workers at construction sites.
		Dust Generation due to construction activities	Temporary	• Excavated material transported by trucks will be covered and/or wetted to prevent dust nuisance. • Suppressing dust generation by spraying water on stockpiles and unpaved movement areas • Water sprinkling over excavated areas, unpaved movement areas and stockpiles. • Transportation of loose construction material through covered trucks. • Use dust curtains (polysheets/ sheets) around the construction area for containing dust spread. • Construction equipment must comply with pollution norms and carry Pollution Under Control certificate.
		Temporary flooding due to uneven dumping of construction waste	Temporary	• The construction waste material should be stored on the higher areas of the site and or areas where water may accumulate creating flooding like situation
		Spillage of fuel and oil	Temporary	• Care to be taken to store fuel and oil (if required) at a place away from any drainage channel/nalla preferably to be stored in drums mounted on a concrete paved platform with slop draining to small spills collection pit.
Construction camps	Sanitation	Nuisance due to absence of facility of sanitation and solid waste management	Temporary	• Labour camp if provided, must have adequate provision of shelter, water supply, sanitation and solid waste management

General: safety during construction	Safety and Health Hazard	Safety hazards to labours and public. Workers are seen to working without any PPE even at height.	Temporary	• Comply with the Occupational health and Safety act of India • Ensure that the contact details of the police or security company and ambulance services nearby to the site. • Ensure that the handling of equipment and materials is supervised and adequately instructed. • Provide adequate PPE to workers such as helmets, safety shoes, gloves, dust masks, gumboots, etc. to workers • Monthly reporting of all accidents and immediate reporting to DBO engineer and owner.
C. Operation phase				
Sewage treatment plant	Treatment and Disposal of Treated Water and Sludge	River, land or ground water pollution due to discharge of untreated or partially treated sewage due to inadequate or inefficient STP operations.	Temporary	• Monitor the treated sewage quality and ensure compliance with PCB standards for effluent disposal into surface water bodies, on land or for the agricultural use. • Follow standard operating procedures for operation and maintenance. • Undertake periodic audit as per these procedures. • Comply with all applicable condition of consent to operate • Quarterly monitoring of influent sewage, treated sewage, upstream and downstream point of treated sewage disposal point to river
		Problems arising due to bad odour, insects, polluted air,	Temporary	• Maintain the green belt as per provision of design to prevent spread of bad odour with large canopy/ broad leaves trees like Sesum, Neem, Bargad, Teak, Sal, etc.
		River, land or ground water pollution due to discharge of untreated or partially treated sewage due to inadequate or inefficient STP operations.	Temporary	• Ensure compliance with PCB standards for effluent disposal into surface water bodies, on land or for the agricultural use. • Follow standard operating procedures for operation and maintenance. • Undertake periodic audit as per these procedures. • Comply with all applicable

				condition of consent to operate
General Safety	Workers exposure to hazardous materials/situations	• Serious/health/ safety hazards	Temporary	• Ensure availability of PPE for maintenance workers. • Follow safety measures and Emergency preparedness plan evolved at design stage

Table 9-2 Environmental Management Plan for Sewerage Area

Activity		**Potential Negative Impact/Concern**	**Duration of impact**	**Mitigation Measures**
B. Construction phase				
Sewerage (laying of sewers) and Sewage Pumping station	Excavation, cutting, back filling, compaction and construction operations	Damage to underground utilities like water, gas line, electricity and telephone conduits, etc. due to construction activities.	Temporary	• Identify existing underground other utility structures, lines through available records and in consultation with concerned authorities and plan construction activities accordingly to minimize damage to such utilities. These underground utilities encountered in excavating trenches carefully shall be supported, maintained and protected from damage or interruption of service until backfill is complete and settlement has taken place.
		Accidents/ damages due to erosion/ sliding of vertical sides of excavated trenches while places the pipes	Temporary	• Maintaining the excavation by Shoring trench sides by placing sheeting, timber shores, trench jacks, bracing, piles, or other materials • Exposed surface shall be resurfaced and stabilized. Exposed surface will be resurfaced and stabilized by making the sloping sides of trench to the angle of repose at

				which the soil will remain safely at rest.
		Generation of substantial debris, top soil and muck during construction	Temporary	• Top soil shall be preserved and may be used for agricultural purpose or development of city parks. • Soil and debris may be managed for planned land filling and landscaping; • Debris may be suitably stored to filling back the excavated areas after placing the trunk sewer lines.
		Dust Generation (Air Pollution) due to excavation, cutting, back filling and compaction operations	Temporary	• Water sprinkling over excavated areas, unpaved movement areas and stockpiles. • Transportation of loose construction material through covered trucks. • Use dust curtains (polysheets/ sheets) around the construction area for containing dust spread at SPS building construction site. • Construction equipment must comply with pollution norms and carry Pollution Under Control certificate.
		Noise and vibration disturbances to residents and businesses	Temporary	• Construction activities to be carried out in day time with prior intimation to local residents and shop keepers. • Construction work near schools and colleges to be carried out during vacations and work near hospitals to be completed on priority basis (in shorter time period with alternate provision of traffic, accessibility of exit/entry gates etc.). • Use of low noise and vibrating equipment meeting prescribed noise standards. • Provision of protective equipment (PPE) like ear muffs and plugs for construction workers. . • Provision of noise barriers in inhabited areas, particularly near sensitive zones like hospitals, schools etc. • DG set to be fitted acoustic

				enclosure.
		Temporary flooding due to excavation during monsoons or blockage of surface drains	Temporary	• Stockpiled areas to be bordered by berms; • Stockpiles to be done in high areas to avoid flow in storm water run-off channels and erosion;
		Increased traffic inconvenience (emissions, congestions, longer travel times, blockage of access)	Temporary	• Alternate traffic routing must be adopted in consultation with concerned traffic police authorities. Proper traffic planning be made for narrow lane areas. • Work should to be completed on priority near business and market place to minimize business loss. • Care should be taken to minimize congestion and negative impacts at schools and hospitals. Safe access shall be maintained to these places during construction. • Provide temporary crossing/ bridges as may be required to facilitate normal life and business
		Settlement of backfilled area after construction	Temporary	• The backfilling material shall be free from petroleum products, slag, cinders, ash or other material. • Backfilling activity shall be completed within five days of laying of sewer. • Proper compaction as per the soil condition and retain the original level of alignment and grade.
		Spillage of fuel and oil	Temporary	Care to be taken to store fuel and oil (if required) at a place away from any drainage channel/nalla preferably to be stored in drums mounted on a concrete paved platform with slop draining to small spills collection pit.
		Nuisance due to solid waste disposal	Temporary	• Provide two bins for recyclable and non-recyclable wastes. • Ensure that recyclable and non-recyclable waste are collected in segregated manner in theses bins before disposal. Recyclable material should be

				sold. Non-recyclable material should be disposed for designated land fill area of the city. • Provide adequate sanitation facility for workers at construction sites.
General: safety during construction	Accidents	Safety hazards to labours and public	Temporary	• Comply with the Occupational health and Safety act of India • Ensure that the contact details of the police or security company and ambulance services nearby to the site. • Ensure that the handling of equipment and materials is supervised and adequately instructed. • Erect warning signs/ tapes and temporary barriers and/or danger tape, marking flags, lights and flagmen around the exposed construction works warn the public and traffic flow of the inherent dangers. • Provide adequate safety precautions such as helmets, safety shoes, gloves, dust masks, gumboots, etc. to workers Monthly reporting of all accidents and immediate reporting to DBO engineer and owner.
C. *Operation phase*				
Sewer line	Leakage/ overflows	Water pollution and possibility of mixing with water supply line	Temporary	• Regular monitoring of sewer line and manholes for visible leakages/ overflows.
Sewage Pumping Station	Waste Handling	Bad odour, Health hazard and public nuisance	Temporary	• Provision for regular clearance of sludge and solid waste to minimize odor nuisance • Ensure maintenance of Green belt as planned Periodic disposal of accumulated sludge/solid waste to disposal site as approved by DBO engineer.
General Safety	Workers exposure totoxic gases in sewers andhazardo	• Serious/health/ safety hazards • The toxic gases are likely to contract communicable diseases from	Temporary	• During cleaning/ maintenance operation, the sewer line will be adequately vented to ensure that no toxic or hazardous gases are present in the line. • Ensure availability of PPE for maintenance workers.

	us materialsdur ingsewer maintenanc e work	exposure to pathogens present in the sewage.		• Follow safety and Emergency Preparedness plan prepared at design stage Monthly reporting of all accidents and immediate reporting to DBO engineer and owner.

9.2. Post project environmental monitoring programme:

A regular monitoring of environmental parameters like water, wastewater as well as performance of STP and safety measures in plant are important for proper environmental management of any project. The Environmental management cell will handle the monitoring of above mentioned environmental attributes as well as comply with the norms prescribed statutory authority. The monitoring schedule for environmental parameters is given at Table 9-3.

Table 9-3 Monitoring schedule for Environmental parameters

Parameters	Frequency of Monitoring	Type of Sampling	Important Parameters
Water & Wastewater			
GW quality on banks of river	Once in 3 months	Grab	Standard water quality parameters
Sample from river Ganga	Monthly	Grab	Standard water quality parameters as per IS 2291 DO, BOD, COD
STP inlet and outlet	Daily	Grab	As specified by Uttar PradeshState Pollution Control Board in Consent Order

9.3. Social Management Plan

Social mitigation plans during construction phase

Based on the identified social issues, doable mitigation plans are proposed which are as follows:

i. Impact on human health

Mitigation Measure: Hoardings will be constructed at the proposed sites. Mitigation plan involves the erection of temporary enclosures around construction sites. These barriers will help entrap some of the dust that is brought up in digging. They will also provide safety benefits, to the passerby.

ii. Traffic Congestion

Mitigation Measure: Proper signage should be provided at strategic locations to facilitate better flow of traffic.

iii. Safety hazards

Mitigation Measure: Fencing of the excavation site and providing proper caution sign boards.

As mentioned above, fencing should be erected around construction sites and appropriately marked with caution signage. These fences/signs should remain in place even if construction is not active, so long as a hazard (e.g. open pit) remains.

iv. Public Notice:

According to the suggestion given by locals during the interview. Government and contractor should give a prior notice to each and every locality with the details of project, street wise start date of construction and street wise end date of construction, contact person during emergency. This information would help them better adjust to the situation and make necessary adjustments and provisions.

9.4. Assess the Capacity of Institutions and Mechanisms for Implementing Social Development Aspects and Social Safeguard Plans; Recommend Capacity building measures

Roles and functions of the institutions are pre-defined, but they can enhance their capacity for better implementation and operation of the project. There should be synergies and continual interaction amongst the departments for better coordination. The officers of the relevant departments can be trained in social sciences, social management plan, etc.

Institutional reform and capacity building of local body is in process, it will be required to ensure that operating authorities have the ability and equipment to properly manage and finance the operation and maintenance of sewerage schemes. Otherwise continued development will not be sustainable.

Table 9-4 Role of stakeholder in implementation and mitigation

Stakeholder Category	Role in project implementation	Role in mitigation
NGRBA	Over all coordination	Coordinating so that the mitigation plan is implemented well Ensuring funds for mitigation plan execution
Executing agencies (Uttar Pradesh Jal Nigam)	Implementation of the project by awarding the project to the suitable contractor and regional coordination Informing the relevant departments about the progress of the project	Ensuring that the relevant departments are available for mitigation plan Enough safety provisions are available for the project implementation.
Municipality	Ensuring better access to households	Should ensure all the households envisaged at project planning phase gets access to the services. Weaker section of the society should get equitable share.
State, local Government	Coordination Monitoring and evaluation	Coordination Monitoring and evaluation. Ensure all the safeguarding plans are in line and acted upon.

9.5. Develop Monitoring and Evaluation Mechanisms to Assess Social Development Outcomes

Regular monitoring and evaluation of the project activities should be carried out to judge its success or any gaps. Certain key parameters can be taken as the benchmark for monitoring and evaluation of the project based on the identified development outcomes. Some of the indicators are listed below;

- Increase in sewer access (number of households linked to the sewer network)
- Decrease in effluent discharge into the Ganga (water quality assessment of the river)
- Accessibility of the service to backward and weaker sections of the society

- Increase in public toilet
- Increase in the land rate (property appreciation value)

9.6. MONITORING OF MECHANISM

To assess the performance of STP influent raw sewage and treated effluent from the STP shall be monitored at regular intervals during O&M Phase to ensure that the water quality meets the standards laid down in NRCD Guidelines. To achieve this end, provision of testing laboratory has been made in the DPR.

To assess the impact on environment due to construction / operation activities, monitoring of air, water quality , metrological data, noise, soil analysis and sludge monitoring etc during construction and operational stages of the project needs to be ensured.

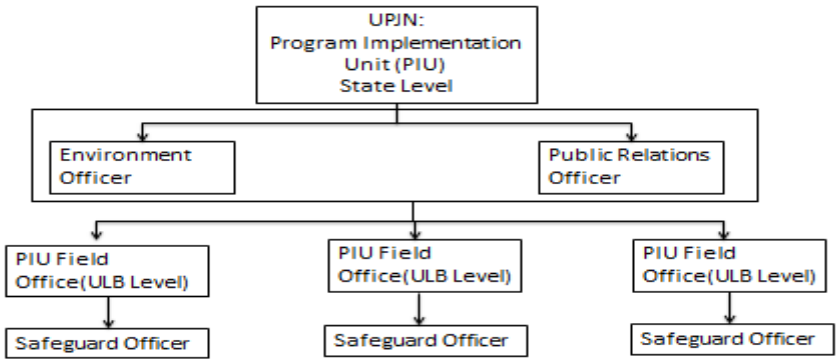


Figure 9-1: Structure of Project implementation Unit (Environment & Social)

9.7. MECHANISM FOR GRIEVANCE

Redressal of grievances contributes to a great extent to the positive perception of the public regarding the project implementation. Therefore it is essential that any query or a complaint vis a vis any aspect of the project implementation is promptly, effectively& positively addressed. The Grievances will be submitted through various mediums, in person, through phone calls, online or through letters. A single system for redressal of grievances shall be adopted at the project level to ensure that its purpose is met. The integrated grievance system will include the following.

i- Establishing Grievances Redressal Cell (GRC) with dedicated project officer and System at the local EA & ULB .At project level the proposed GRC includes Executive Officer, Bithoor Nagar Panchyat. Project Engineer, U.P. Jal Nigam will be Grievance redressal officer at EA level including representative of DBO. Name and contact information of GRO will be displayed at project site/Notice Board and also disclosed on website of ULB, EA and SPMG.

ii-The public also can submit their unresolved grievances at Tehsil Divas on every

iii- Second and fourth Tuesday of every month between 10:00 to 14:00, to District Magistrate/Sub District Magistrate and all district level officials for quick redressal.

iv- The SPMG & EA will prepare a half yearly report on grievance redressal under GAAP and will be reviewed during meeting of CMCs and Social Audit.

v- The above arrangement will be in addition to the PIO official appointed under RTI Act, under office of the General Manager, Ganga Pollution Control Unit, U.P. Jal Nigam, Kanpur.

9.8. Cost information of EMP

Table 9.5 gives a brief idea about the probable cost implications of the environmental management plans.

Table 9-5 Cost information of EMP

Item	Location	Season	Year	Total no. of samples	UnitCost	TotalCost
Environment Monitoring during Construction Stage						
Air quality Monitoring	2	3		12	7,000.00	84,000.00
Metrological data	1	3		3	5,000.00	15,000.00
Water Quality Monitoring	3	4		24	6,500.00	156,000.00
Noise/vibration	2	3		12	3,000.00	36,000.00
Soil analysis	2	3		12	6,000.00	72,000.00
				Sub total		**3,63,000.**
Environment Monitoring Cost (Operation Stage)						
Air quality Monitoring	2	2		12	7,000.00	84,000.00
Metrological data	1	1		3	5,000.00	15,000.00
Water Quality Monitoring	4	4		48	6,500.00	312,000.00
Noise/vibration	2	2		12	3,000.00	36,000.00
Sludge Monitoring at STP sites	1	4		12	6,500.00	78,000.00
Soil analysis	2	3		18	6,500.00	117,000.00
					Sub-Total	**642000.00**
Control of Dust Generation						**200000.00**
Control of noise and vibrations						**288,000.00**
Prevention of safety hazards to workers						**28,000.00**
Prevention of health hazards due to absence of sanitation and solid waste management facility in labour camps.						
(a)Sanitation						**800,000.00**
(b)Water Supply						**200,000.00**
(c)Dust Bins						**100,000.00**
Use of PPE and PPC					Lump Sum	50,000.00
Environmental mitigation measures including development- plantation around SPS					Lump sum	200,000.00
Training and Awareness programme					Lump sum	12,00,000.00
					Sub Total	1,966,000
					TOTAL	**4071000.00**

10.0 Conclusion

The project report of the proposed sub-project for sewerage Bithoor Town after environment analysis concludes that the project falls in 'low impact' category and have overall positive benefits on the life and environment of the people. As per environmental and social management framework guidelines of NGRBA, Environmental and Social Assessment, with a Generic Safeguard Management Plan was conducted for addressing possible issues/ concerns arising from proposed project.

Impacts of activities identified during the assessment fell under two separate categories of Construction and Operation. Although no such permanently negative or adverse environmental or social impacts were identified, there were certain temporary impacts, for which appropriate mitigation plans have also been suggested. The environmental management plan ensures to suggest appropriate mitigation measure against the issues/ concerns identified during the environmental and social analysis study. All the social and environmental issues were appropriately studied and have been substantiated using appropriate evidences, to ascertain the magnitude of their impacts. Even the issues of public grievances and public notice have been taken care in the report to confirm transparency during the project implementation. Report also ensures that well defined institutional mechanism is in place to monitor and evaluate the progress of the project during construction, implementation and operation phases.

(***Annex-I***)

नगर पंचायत, बिठूर

पत्रांकः ~~827~~ 827

दिनॉक 8/3/2013

प्रस्ताव

भारत सरकार के एन0आर0सी0पी0 (National River Conservation Programme) के अन्तर्गत नगर पंचायत, बिठूर की वर्तमान व प्रस्तावित सीमाओं में गंगा नदी के प्रदूषण नियन्त्रण करने हेतु प्रस्तावित नये कार्यों को कियाविन्त कराने के लिये भारत सरकार द्वारा निर्गत दिशा निर्देश के अनुसार सहमत है। योजना के निर्माण हेतु लागत का 70 प्रतिशत अंश भारत सरकार से तथा 30 प्रतिशत अंश राज्य सरकार से प्राप्त होना है। नगर पंचायत, बिठूर योजना के लिये यथासम्भव आवश्यक भूमि कार्यदायी संस्था को निशुल्क उपलब्ध करायेगी। नगर पंचायत, बिठूर प्रस्तावित समस्त कार्य पूर्ण होने पर, कार्यदायी संस्था से अधिग्रहण कर अपने संसाधनों से रख–रखाव व संचालन का उत्तरदायित्व निभाने के लिये सहमत है। विस्तृत प्राक्कलन विरचित कर, योजना स्वीकृत कराने आवश्यक वित्तीय संसाधनों का प्रबन्ध कराने एवं योजना के निर्माण कार्यों हेतु नगर पंचायत, बिठूर द्वारा उत्तर प्रदेश जल निगम को नोडल/कार्यदायी संस्था के रूप में अधिकृत किया जाता है।

अध्यक्ष
नगर पंचायत, बिठूर
कानपुर नगर

D.K.Jain,Latters,P.M.-I

247

37

(***Annex-II***)

दूरभाषः–0512.2545598
Email: gpcu.pm1upjn@gmail.com,
pmgpcu@yahoo.co.in

कार्यालय महाप्रबन्धक

गंगा प्रदूषण नियन्त्रण इकाई, उ0 प्र0 जल निगम, बेनाझाबर, कानपुर।

पत्रांक 619 / GP-16 / 15 दिनांकः 24/03/2015

सेवा में,

सदस्य सचिव
उ0 प्र0 प्रदूषण नियन्त्रण बोर्ड,
लखनऊ।

विषयः– बिठूर सीवरेज योजना के अन्तर्गत 2.4 एमएलडी क्षमता के एसटीपी के निर्माण हेतु अनापत्ति प्रमाण पत्र निर्गत करने के सम्बन्ध में।

महोदय,

उपरोक्त विषयक एन.जी.आर.बी.ए. कार्यक्रम के अन्तर्गत सीवरेज वर्क्स एण्ड अबेटमेंट ऑफ पाल्यूशन ऑफ रिवर गंगा एट बिठूर टाउन योजना के अन्तर्गत 2.4 एमएलडी क्षमता का एसटीपी आक्सीडेशन पॉण्ड तकनीकी के आधार पर निर्माण किया जाना प्रस्तावित है।

अतः आपसे अनुरोध है कि वायु (प्रदूषण निवारण और नियन्त्रण) अधिनियम 1981 की धारा 21 के अधीन उत्सर्जन (इमिसन) जारी रखने के लिये अनापत्ति प्रमाण पत्र निर्गत करने का कष्ट करें।

भवदीय

महाप्रबन्धक

पृष्ठांकन सं0 एवं दिनॉक उपरोक्तानुसार।
प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित–

1. मुख्य अभियन्ता (का0क्षे0), उ0 प्र0 जल निगम, कानपुर।
2. परियोजना प्रबन्धक (प्रथम), गंगा प्रदूषण नियन्त्रण इकाई, उ0 प्र0 जल निगम, कानपुर।
3. अधीशासी अधिकारी, नगर पंचायत, बिठूर, कानपुर।

महाप्रबन्धक

E:\F- Drive\Office-Latters\Letter (A) 2014-15.docx- 931 -

नगर पंचायत, बिठूर

पत्रांक– ने.पं. / न० प० बि० / 2014 - 15 दिनांक– 10 · 2 · 2015

✧ प्रस्ताव ✧

भारत सरकार के एन0आर0सी0पी0 कार्यक्रम (National River Conservation Programme) के अन्तर्गत नगर पंचायत, बिठूर की वर्तमान व प्रस्तावित सीमाओं में गंगा नदी के प्रदूषण नियन्त्रण हेतु विरचित की गयी बिठूर नगर सीवरेज योजना हेतु सीवेज ट्रीटमेंट प्लान्ट (STP), आक्सीडेशन पौंड एवं तत्संबंधी प्रस्तावित कार्यों हेतु 7.05 हेक्टेयर भूमि नगर पंचायत क्षेत्र, बिठूर के अन्तर्गत उ0 प्र0 जल निगम को निर्माण कार्य हेतु भूमि सहर्ष निःशुल्क प्रदान की जाती है।

अधिशासी अधिकारी
नगर पंचायत बिठूर
कानपुर

(***Annex-III***)

नगर पंचायत, बिठूर

पत्रांक:- न.पं.बि./115/प्रस्ताव/2013-14 दिनॉक 24-10-2013

प्रस्ताव

भारत सरकार के एन0आर0सी0पी0 (National River Conservation Programme) के अन्तर्गत नगर पंचायत, बिठूर की वर्तमान व प्रस्तावित सीमाओं में गंगा नदी के प्रदूषण नियन्त्रण करने हेतु विरचित की गयी बिठूर नगर सीवरेज योजना हेतु मुख्य पंपिंग स्टेशन व स्टाफ क्वार्टर जो गुदारा घाट नाले पर गंगा नदी के तट पर प्रस्तावित है के हेतु 30 मी0 लम्बाई तथा 30 मी0 चौडाई एवं सीवेज पंपिंग स्टेशन कलवारी घाट नाला पर 30 मी0 लम्बाई तथा 30 मी0 चौडाई में नगर पंचायत क्षेत्र बिठूर के अन्तर्गत उ0 प्र0 जल निगम को निर्माण कार्य हेतु सहर्ष/श्रमि निशुल्क प्रदान की जाती है।

अध्यक्ष
नगर पंचायत, बिठूर
कानपुर

248

अधिशाषी अधिकारी / अध्यक्ष

Annexure 4

कृपया परियोजना प्रबन्धक - 1 उ० प्र०

निगम कार्यालय महाप्रबन्धक गंगा प्रदूषण नियन्त्रण ईकाई कान के पत्रांक 2809 / डब्लयू - 44 / 63 दि० 06/7/2013 का अवलोकन का कष्ट करे जिसके संबध मे अवगत कराना है कि बिठूर एन० जी० आर० बी० ए० कार्यक्रम के अन्तर्गत सिवरेज योजना से सं है उसमे नगर पंचायत का सिवरेज आव सात नालो के माध्यम से गं मे सीधा प्रवाहित हो रहा है उप्रवाह को रोकने हेतु बिठूर गंगा नदी डाउन स्ट्रीम क्षेत्र मे 0.3 हेक्टेअर भूमि मेन पम्पिंग स्टेशन हेतु एव 4.5≠ हेक्टेअर भूमि आक्सीडेशन पाण्ड हेतु आवश्यकता बतलायी गा निकाय द्वारा भूमि उपलब्ध कराने का प्रस्ताव पूर्व मे प्रेषित किया जा है।

अतएव निकाय की भूमि चिन्हीकरण हेतु क्षेत्रीय लेखपाल को निर्देशित करने की कृपा करे ताकि निकाय की भूमि को उक्त कार्य हेतु संबधित विभाग को दिया जा सके।

[illegible signature]

NT Bithoor

कृ. R.I. Bithoor एवं क्षेत्रीय लेखपाल
मौका / अभिलेखीय परीक्षणोपरान्त
आ. आ. हेतु आख्या [3 दिनों मे]

[signature]
04/09/13

कृपया पत्रावली प्रस्तुत करे
[signature]
10/10/2013
P.M-I

कार्यालय महाप्रबन्धक, गंगा प्रदूषण नियन्त्रण इकाई, उ0 प्र0 जल निगम, कानपुर

पत्र संख्या 3131 / W-44 / 60 दिनाँक 30 -08-2013

सेवा में,

अधिशासी अधिकारी,
नगर पंचायत,
बिठूर।
कानपुर नगर।

विषयः-बिठूर नगर पंचायत की एन.जी.आर.बी.ए. कार्यक्रम के अन्तर्गत सीवरेज योजना बनाने हेतु भूमि आरक्षित करने के सम्बन्ध में।

महोदय,

उपरोक्त विषयक इस कार्यालय के पत्रांक 2336/डब्ल्यू-44/55 दिनांक 21-06-2013 एव अनुस्मारक पत्र संख्या 2809/डब्ल्यू-44/63 दिनांक 06-07-2013 का संदर्भ ग्रहण करने का कष्ट करें, जिसके द्वारा आपसे बिठूर नगर पंचायत में गंगा नदी के डाउन स्ट्रीम में 0.5 हेक्टेअर भूमि मेन पम्पिंग स्टेशन के निर्माण हेतु तथा 4.50 हेक्टेयर भूमि आक्सीडेशन पॉण्ड के निर्माण हेतु चिहिन्त करते हुए प्रस्ताव सहित सूचित करने हेतु अनुरोध किया गया था, जोकि वर्तमान तक प्राप्त नहीं हुआ है। अत आपसे पुनः अनुरोध है कि मेन पम्पिंग स्टेशन तथा आक्सीडेशन पॉण्ड के निर्माण हेतु भूमि को चिहिन्त करते हुए चिहिन्त भूमि की खसरा खतौनी तथा नगर पंचायत का प्रस्ताव बनाकर शीघ्र प्रेषित कराने क कष्ट करें ताकि योजना का विरचन कार्य पूर्ण कराते हुए योजना को शीघ्र प्रेषित किया सके।

भवदीय

(डी. के. जैन)
परियोजना प्रबन्धक

पृष्ठाँकन संख्या एंव दिनाँक उपरोक्तानुसार -

प्रतिलिपि -

1- जिलाधिकारी, कानपुर नगर, कानपुर।
2- महाप्रबन्धक, गंगा प्रदूषण नियंत्रण इकाई, उ. प्र. जल निगम, कानपुर।
3- उपजिलाधिकारी (सदर), कानपुर नगर।
4- श्री आर. के. मिश्र, परियोजना अभियंता को व्यक्तिगत सम्पर्क कर कार्यवाही सुनिश्चित करने हेतु।
5- गार्ड फाईल।

परियोजना प्रबन्धक

250

महोदय,

संलग्न पत्रांक सं० 82/न०प०वि० /भूमि आरक्षित का सन्दर्भ ग्रहण करने का कष्ट करें कि अधिशासी अधिकारी न०पंचायत बिठूर कानपुर नगर के द्वारा उत्तर प्रदेश जलनिगम गंगा प्रदूषण नियंत्रण इकाई बेनाझाबर कानपुर द्वारा बिठूर नगर पंचायत का सीवरेज प्राव कोरो के लिए बिठूर नगर में गंगानदी के डाउन स्ट्रीम मेन 0.5 हे० भूमि व मेन पम्पिंग स्टेशन हेतु 4.5 हे० भूमि आक्सीडेशन पाण्ड हेतु सम्बन्धित विभाग को आवश्यक है। उक्त के सम्बन्ध में ग्राम बिठूर कलाँ पर० व तह० कानपुर नगर की गाटा सं० 1घ/4.7420 हे० व 1घ/2305 हे० गंगानदी के नाम डाउन स्ट्रीम के लिए 0.5 हे० व मेन पम्पिंग हेतु 4.5 हे० भूमि आक्सीडेशन पाण्ड हेतु आरक्षित किये जाने हेतु उपयुक्त है। ग्राम बिठूर कलाँ नगर पंचायत बिठूर के अन्तर्गत सम्बन्ध में नगर पंचायत बिठूर से प्रस्ताव प्राप्त करने की आवश्यकता है; उद्धरण, खतौनी, खसरा की नकल व सजरे की छाया प्रति साथ में संलग्न है।

आवश्यक कार्यवाही हेतु रिपोर्ट सेवा में प्रेषित

[illegible] 06/[illegible]

महोदय

लेखपाल श्री [illegible] [illegible]

6/[illegible]/13

10/09/13

251

कार्यालय नगर पंचायत बिठूर कानपुर नगर

सेवा में,
ज्वाइन्ट मजिस्ट्रेट (सदर)
कानपुर (नगर)

पत्रांक– 82 /न0पं0बि0/ भूमि आरक्षित/2013–14 दिनांक– 20.8.2013

विषयः– बिठूर नगर की एन0जी0आर0बी0ए0 कार्यक्रम के अन्तर्गत सीवरेज योजना बनाने हेतु भूमि आरक्षित करनें केसम्बन्ध में ।

महोदय,

उपर्युक्त विषयक परियोजना प्रबन्धक–1 उत्तर प्रदेश जल निगम गंगा प्रदूषण नियंत्रण इकाई देनाझावर रोड कानपुर के पत्रांक 2309/डब्लू–44/63 दिनांक 6–07–2013 पर पारित आपके आदेश दिनांक 13–08–2013 के अनुपालन में निवेदन करना है कि बिठूर नगर पंचायत का सीवरेज श्राव सात नालो के माध्यन से गंगा जी में प्रवाहित हो रहा है । जिसके प्रवाह के रोकने के निर्माण हेतु बिठूर नगर में गंगा नदी के डाउन स्ट्रीम क्षेत्र में 0.5 हेक्टेअर भूमि सेन पम्पिंग स्टेशन हेतु 4.5 हेक्टेअर भूमि आक्सीडेशन पाण्ड हेतु सबंधित विभाग को आवश्यकता है ।

अतः उक्त कार्य हेतु निकाय की भूमि उपलब्ध करानें हेतु क्षेत्रीय लेखपाल को आदेशित करनें का कष्ट करें कि वह निकाय की भूमि चिन्हांकित करा दें ताकि जल निगम को उक्त कार्य हेतु भूमि निःशुल्क दी जासके ।

सादर सम्प्रेषित ।

भवदीय

कृते,अधिशासी अधिकारी
नगर पंचायत बिठूर कानपुर नगर

1259

श्री अश्वनी कुमार जी

तत्काल उपरोक्त आदेश का अनुपालन करें

05/9/13

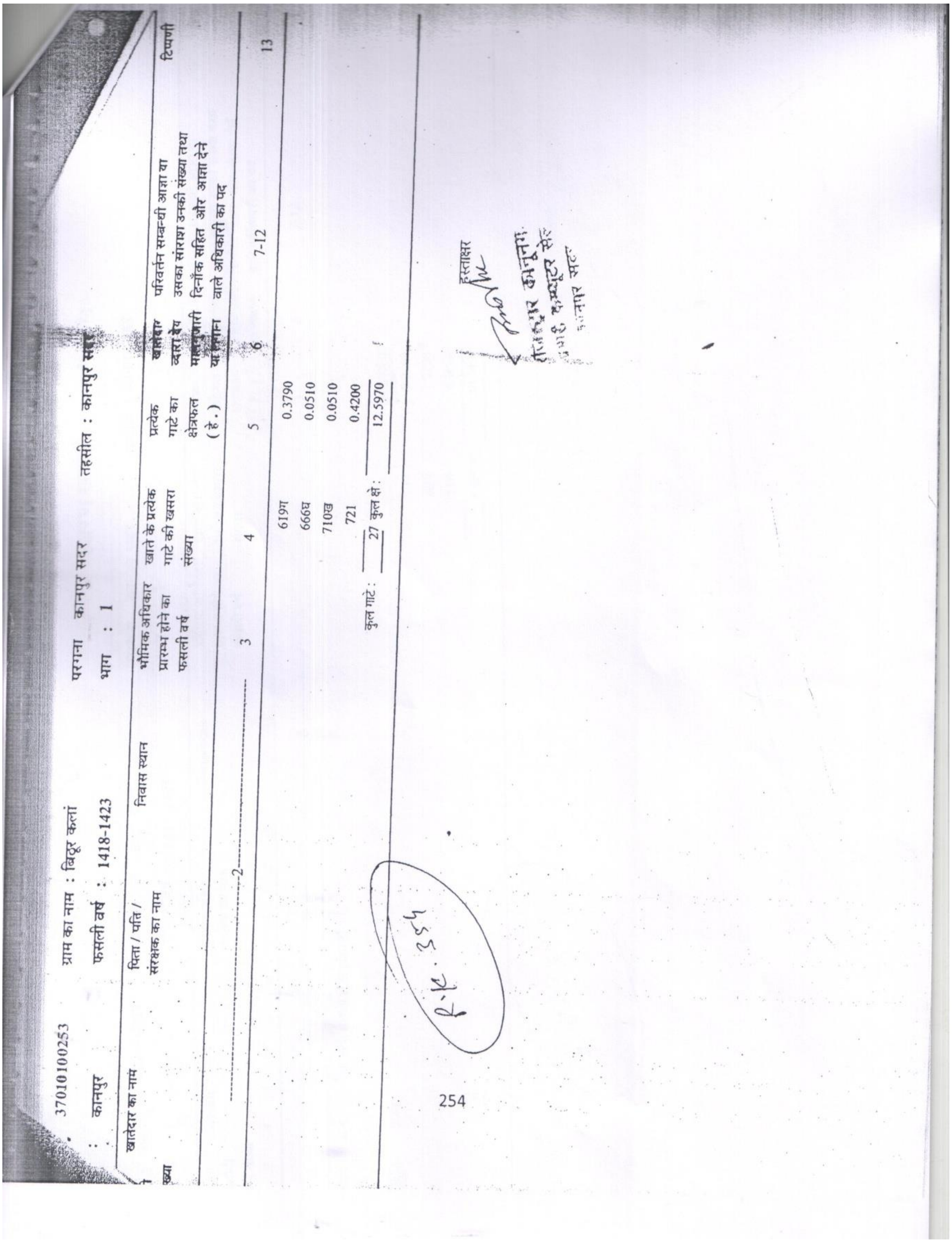
उद्धरण खतौनी (शासकीय [illegible])

क्र : 37010100253 ग्राम का नाम : बिठूर कलां परगना कानपुर सदर तहसील : कानपुर [illegible]

: कानपुर फसली वर्ष : 1418-1423 भाग : 1

खाता खतौनी क्रम संख्या	खातेदार का नाम	पिता / पति / संरक्षक का नाम	निवास स्थान	भौमिक अधिकार प्रारम्भ होने का फसली वर्ष	खाते के प्रत्येक गाटे की खसरा संख्या	प्रत्येक गाटे का क्षेत्रफल (हे.)	[illegible]	परिवर्तन सम्बन्धी आज्ञा या उसका सारांश उनकी संख्या तथा दिनाँक सहित और आज्ञा देने वाले अधिकारी का पद	टिप्पणी
1	2			3	4	5	6	7-12	13
श्रेणी : 5-1	कृषि योग्य भूमि - नई परती (परतीजदीद)								
0036	बंजर				1घ	4.7420			
					4ख	0.1540			
					7	0.0720			
					68च	0.5530			
					111	0.2660			
					146	0.0720			
					151घ	3.4730			
					219	0.1430			
					253ख	0.3690			
					255ख	0.0100			
					256ख	0.0610			
					257	0.1020			
					302क	0.0310			
					435	0.3070			
					448ख	0.2250			
					457	0.8710			
					490ख	[illegible]			
					[illegible]	0.0720			
					533क	0.0200			
					554द	0.0100			
					555च	0.0720			
					556घ	0.0100			
					565[illegible]	0.0200			

253



37010100253 ग्राम का नाम : बिठूर कलां परगना कानपुर सदर तहसील : कानपुर सदर

: कानपुर फसली वर्ष : 1418-1423 भाग : 1

खाता संख्या	खातेदार का नाम	पिता / पति / संरक्षक का नाम	निवास स्थान	भौमिक अधिकार प्रारम्भ होने का फसली वर्ष	खाते के प्रत्येक गाटे की खसरा संख्या	प्रत्येक गाटे का क्षेत्रफल (हे .)	खातेदार द्वारा देय मालगुजारी या लगान	परिवर्तन सम्बन्धी आज्ञा या उसका सारांश उनकी संख्या तथा दिनाँक सहित और आज्ञा देने वाले अधिकारी का पद	टिप्पणी
		2		3	4	5	6	7-12	13
					619ग	0.3790			
					666घ	0.0510			
					710ख	0.0510			
					721	0.4200			
				कुल गाटे :	27 कुल क्षे :	12.5970			

254

R.K. 354

हस्ताक्षर

राजकुमार कानूनगो
प्रभारी कम्प्यूटर सेंटर
कानपुर सदर

उद्धरण खतौनी (शासकीय कार्य हेतु)

नंक : 37010100253 ग्राम का नाम : बिठूर कलां परगना कानपुर सदर तहसील : कानपुर सदर

वद : कानपुर फसली वर्ष : 1418-1423 भाग : 1

खाता खतौनी क्रम संख्या	खातेदार का नाम	पिता / पति / संरक्षक का नाम	निवास स्थान	भौमिक अधिकार प्रारम्भ होने का फसली वर्ष	खाते के प्रत्येक गाटे की खसरा संख्या	प्रत्येक गाटे का क्षेत्रफल (है.)	खातेदार व्यक्ति देव मालगुजारी या लगान	परिवर्तन सम्बन्धी आज्ञा या उसका संक्षेप उनकी संख्या तथा दिनाँक सहित और आज्ञा देने वाले अधिकारी का पद	टिप्प
1	2			3	4	5	6	7-12	1
श्रेणी : 6-4 जो अन्य कारणों से अकृषित हो।									
0334	ऊसर				13	0.3690			
					68ज	1.2290			
					151च	6.9860			
					कुल गाटे : 4	कुल क्षे : 10.8890			

255

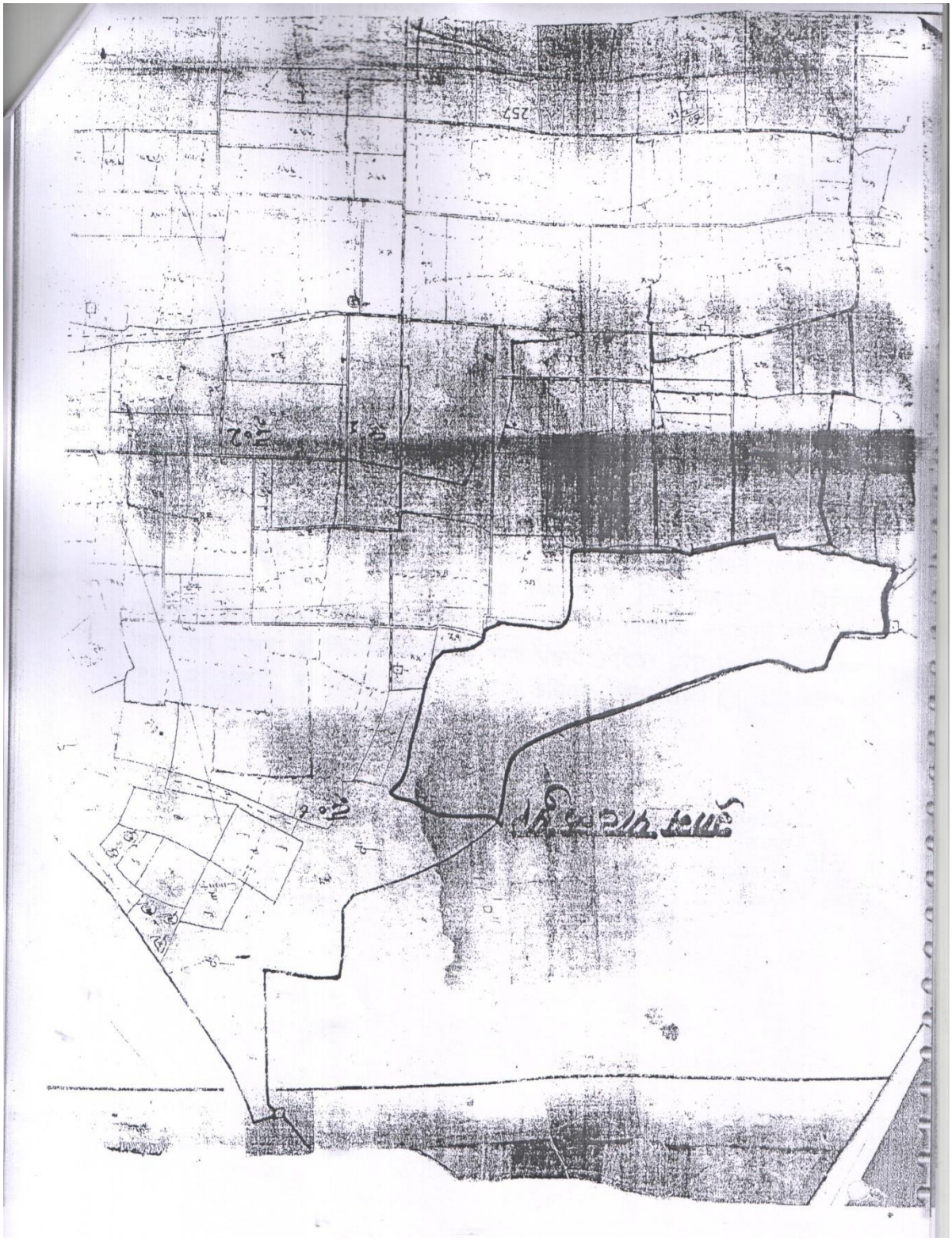
हस्ताक्षर

इन्तखाब खसरा

ग्राम बिठूर कलां परगना बि० तहसील सदर जिला कानपुर नगर सन 1418 फसली

बन्दोबस्ती, बीघो में	खितौनी खाते की संख्या	खितौनी के भाग 1 के वर्गीकरण के अनुसार खातेदार का नाम यदि कोई हो	खितौनी के भाग 2 के वर्गीकरण के अनुसार खातेदार का नाम यदि कोई हो	सिंचाइ की रीति और कुए	खरीफ क्षेत्रफल: फसल का नाम	खरीफ क्षेत्रफल: सिंचा हुआ	खरीफ क्षेत्रफल: अनसिंचा	रबी क्षेत्रफल: फसल का नाम	रबी क्षेत्रफल: सिंचा हुआ	रबी क्षेत्रफल: अनसिंचा	जायद क्षेत्रफल: फसल का नाम	जायद क्षेत्रफल: सिंचा हुआ	जायद क्षेत्रफल: अनसिंचा	दो फसली क्षेत्रफल: सिंचा हुआ	दो फसली क्षेत्रफल: अनसिंचा	मिलान खसरा स्तम्भे के अनुसार आकृर्षिक बिना फसल वाली भूमि का ब्योरा: भूमि की श्रेणी	मिलान खसरा स्तम्भे के अनुसार आकृर्षिक बिना फसल वाली भूमि का ब्योरा: क्षेत्रफल
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
३६०	२५५	श्री ठाकुर जी प्र० राजकुमार		x	x	x	x	x	x	x	x	x	x	x	x	यू०के०लि०	0.365
२०९	१८९	मानाप्रसाद, सोमनाथ, विश्वनाथ		x	x	x	x	x	x	x	x	x	x	x	x	यू०के०लिमि०	0.309
																यू०के०लिमिय	0.820
८२०	४८८	वैभव भार्गव		x	x	x	x	x	x	x	x	x	x	x	x	बंजर	४.९४२
[illegible]	४०९	—		x	x	x	x	x	x	x	x	x	x	x	x		
३१८	४०२	—		x	x	x	x	x	x	x	x	x	x	x	x	नाला	0.318
४४०	४०८	—		x	x	x	x	x	x	x	x	x	x	x	x	रास्ता	0.450
																नवीन परती	0.410
६१०	३२१	—		x	x	x	x	x	x	x	x	x	x	x	x	कब्र	2.304
६०५	६१८	—		x	x	x	x	x	x	x	x	x	x	x	x		

सत्यप्रतिलिपि
सत्यापित [illegible]
6/9/13



(***Annex-IV***)

दूरभाष:–0512.2545598
Email: gpcu.pm1upjn@gmail.com,
pmgpcu@yahoo.co.in

कार्यालय महाप्रबन्धक

गंगा प्रदूषण नियन्त्रण इकाई, उ0 प्र0 जल निगम, बेनाझाबर, कानपुर।

पत्रांक / / दिनांक: / /

✧ प्रमाण पत्र ✧

भारत सरकार के एन0आर0सी0पी0 कार्यक्रम (National River Conservation Programme) के अन्तर्गत नगर पंचायत, बिठूर की वर्तमान व प्रस्तावित सीमाओं में गंगा नदी के प्रदूषण नियन्त्रण हेतु विरचित की गयी बिठूर नगर सीवरेज योजना हेतु सीवेज ट्रीटमेंट प्लान्ट (STP), आक्सीडेशन पौंड एवं तत्संबंधी प्रस्तावित कार्यों हेतु 7.05 हेक्टेयर भूमि नगर पंचायत क्षेत्र, बिठूर के अन्तर्गत उ0 प्र0 जल निगम को निर्माण कार्य हेतु भूमि निःशुल्क प्रदान की गयी है तथा उक्त प्राप्त भूमि पर किसी भी प्रकार का अतिक्रमण नही है।

परियोजना अभियन्ता

परियोजना प्रबन्धक

E:\F- Drive\Office-Latters\Letter (A) 2014-15.docx- 1090 -

(***Annex-V***)

रजिस्ट्री सं० डी० एल०—(एन)04/0007/2003—15 REGISTERED NO. DL—(N)04/0007/2003—15

भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY
भाग II — खण्ड 1
PART II — Section 1
प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं० 28] नई दिल्ली, शनिवार, मई 30, 2015/ज्येष्ठ 9, 1937 (शक)
No. 28] NEW DELHI, SATURDAY, MAY 30, 2015/JYAISTHA 9, 1937 (SAKA)

इस भाग में भिन्न पृष्ठ संख्या दी जाती है जिससे कि यह अलग संकलन के रूप में रखा जा सके।
Separate paging is given to this Part in order that it may be filed as a separate compilation.

MINISTRY OF LAW AND JUSTICE
(Legislative Department)

New Delhi, the 30*th May,* 2015/*Jyaistha* 9, 1937 (*Saka*)

THE RIGHT TO FAIR COMPENSATION AND TRANSPARENCY IN LAND ACQUISITION, REHABILITATION AND RESETTLEMENT (AMENDMENT) SECOND ORDINANCE, 2015

No. 5 OF 2015

Promulgated by the President in the Sixty-sixth Year of the Republic of India.

An Ordinance further to amend the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.

WHEREAS the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Amendment) Ordinance, 2014 to amend the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RFCTLARR Act, 2013) was promulgated by the President on the 31st day of December, 2014;

AND WHEREAS, the RFCTLARR (Amendment) Bill, 2015 was introduced on the 24th February, 2015 in the House of the People to replace the said Ordinance and the said Bill was passed alongwith amendments on the 10th March, 2015 in the House of the People, but the same could not be passed by the Council of States and is pending in that House;

AND WHEREAS, the RFCTLARR (Amendment) Ordinance, 2015 incorporating the amendments made by the House of the People was promulgated by the President on 3rd April, 2015;

AND WHEREAS, the RFCTLARR (Amendment) Second Bill, 2015 was introduced in the House of the People on 11th May, 2015;

AND WHEREAS, the House of the People referred the RFCTLARR (Amendment) Second Bill, 2015 to the Joint Committee of the Houses;

AND WHEREAS, it is considered necessary to give continued effect to the provisions of the RFCTLARR (Amendment) Ordinance, 2015;

AND WHEREAS,Parliament is not in session and the President is satisfied that circumstances exist which render it necessary for him to take immediate action;

Now, Therefore, in exercise of the powers conferred by clause (1) of article 123 of the Constitution, the President is pleased to promulgate the following Ordinance:—

Short title and commencement.

1. (*1*) This Ordinance may be called the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Amendment) Second Ordinance, 2015.

(*2*) It shall be deemed to have come into force on the 31st day of December, 2014.

Substitution of certain expression throughout the Act.

2. In the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (hereinafter referred to as the principal Act), for the words "private company" wherever they occur, the words "private entity" shall be substituted. 30 of 2013.

Amendment of section 2.

3. In the principal Act, in sub-section (2) of section 2, after the second proviso , the following proviso shall be inserted, namely: —

"Provided also that the acquisition of land for the projects listed in sub-section (*1*) of section 10A and the purposes specified therein shall be exempted from the provisions of the first proviso to this sub-section.".

Amendment of section 3.

4. In the principal Act, in section 3,—

(*i*) in clause (j), in sub-clause (*i*), for the words and figures "the Companies Act, 1956", the words and figures "the Companies Act, 2013" shall be substituted; 1 of 1956. 18 of 2013.

(*ii*) after clause (y), the following clause shall be inserted, namely:—

'(yy) "private entity" means any entity other than a Government entity or undertaking and includes a proprietorship, partnership, company, corporation, non-profit organisations or other entity under any law for the time being in force;'.

Insertion of new Chapter IIIA.

5. In the principal Act, after Chapter III, the following Chapter shall be inserted, namely:—

"CHAPTER IIIA

PROVISIONS OF CHAPTER II AND CHAPTER III NOT TO APPLY TO CERTAIN PROJECTS

Power of appropriate Government to exempt certain projects.

10A. (1) The appropriate Government may, in the public interest, by notification, exempt any of the following projects from the application of the provisions of Chapter II and Chapter III of this Act, namely: —

(*a*) such projects vital to national security or defence of India and every part thereof, including preparation for defence or defence production;

(*b*) rural infrastructure including electrification;

(*c*) affordable housing and housing for the poor people;

(*d*) industrial corridors set up by the appropriate Government and its undertakings (in which case the land shall be acquired up to one kilometer on both sides of designated railway line or roads for such industrial corridor); and

(*e*) Infrastructure projects including projects under public private partnership where the ownership of land continues to vest with the Government:

Provided that the appropriate Government shall, before the issue of notification, ensure the extent of land for the proposed acquisition keeping in view the bare minimum land required for such project.

(*2*) The appropriate Government shall undertake a survey of its wasteland including arid land and maintain a record containing details of such land, in such manner as may be prescribed by the appropriate Government.

Amendment of section 24.

6. In the principal Act, in section 24, in sub-section (*2*), after the proviso, the following proviso shall be inserted, namely:—

"Provided further that in computing the period referred to in this sub-section, any period or periods during which the proceedings for acquisition of the land were held up on account of any stay or injunction issued by any court or the period specified in the award of a Tribunal for taking possession or such period where possession has been taken but the compensation is lying deposited in a court or in any designated account maintained for this purpose, shall be excluded.".

Amendment of section 31.

7. In the principal Act, in section 31, in sub-section (*2*), in clause (h), after the words "affected families", the words "including compulsory employment to at least one member of such affected family of a farm labourer" shall be inserted.

Amendment of section 46.

8. In the principal Act, in section 46, in sub-section (*6*), in the Explanation, in clause(*b*), the words "any person other than" shall be omitted.

Insertion of new section 67A.

9. In the principal Act, after section 67, the following section shall be inserted, namely—

Hearing to be held by Authority in district or districts to decide grievances.

"67A. The Authority shall, after receiving reference under section 64 and after giving notice of such reference to all parties concerned, hold the hearing in the district where the land acquisition takes place for settlement of the objections raised in the reference.".

Substitution of new section for section 87.

10. In the principal Act, for section 87, the following section shall be substituted, namely:—

Offences by Government officials.

"87. Where an offence under this Act has been committed by any person who is or was employed in the Central Government or the State Government, as the case may be, at the time of commission of such alleged offence, the court shall take cognizance of such offence provided the procedure laid down in section 197 of the Code of Criminal Procedure, 1973 is followed.".

2 of 1974.

Amendment of section 101.

11. In the principal Act, in section 101, for the words "a period of five years", the words, "a period specified for setting up of any project or for five years, whichever is later," shall be substituted.

Amendment of section 105.

12. In the principal Act, in section 105,—

(*i*) for sub-section (*3*), the following sub-section shall be substituted, namely:—

"(*3*) The provisions of this Act relating to the determination of compensation in accordance with the First Schedule, rehabilitation and

resettlement in accordance with the Second Schedule and infrastructure amenities in accordance with the Third Schedule shall apply to the enactments relating to land acquisition specified in the Fourth Schedule with effect from 1st January, 2015.";

(*ii*) sub-section (*4*) shall be omitted.

Amendment of section 109.

13. In the principal Act, in section 109, in sub-section (*2*),after clause (*d*), the following clause shall be inserted, namely:—

" (dd) the manner of undertaking a survey of waste land including arid land and maintenance of the record containing the details of such land under sub-section (*2*) of section 10A;'.

Amendment of section 113.

14. In the principal Act, in section 113, in sub-section (*1*),—

(*i*) for the words "the provisions of this Part", the words "the provisions of this Act" shall be substituted;

(*ii*) in the proviso, for the words "a period of two years", the words "a period of five years" shall be substituted.

Repeal and saving.

15. (*1*) The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Amendment) Ordinance, 2015, is hereby repealed. Ord. 4 of 2015.

(*2*) Notwithstanding such repeal, anything done or any action taken under the principal Act, as amended by the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Amendment) Ordinance, 2015, shall be deemed to have been done or taken under the principal Act, as amended by this Ordinance. 4 of 2015.

PRANAB MUKHERJEE,
President.

DR. SANJAY SINGH,
Secretary to the Government of India.

PRINTED BY THE GENERAL MANAGER, GOVERNMENT OF INDIA PRESS, MINTO ROAD, NEW DELHI
AND PUBLISHED BY THE CONTROLLER OF PUBLICATIONS, DELHI—2015.

GMGIPMRND—2012GI(S3)—30-05-2015.

Photographs of Bithoor Town, Kanpur Nagar (U.P) Ghats of Ganga river.






Annexure – VI

Mutual Land Purchase Policy, Uttar Pradesh 2015

संख्या-2/2015/215/एक-13-2015-20(48)/2011

प्रेषक,

सुरेश चन्द्रा,
प्रमुख सचिव,
उत्तर प्रदेश शासन।

सेवा मे,

1- समस्त प्रमुख सचिव/सचिव, उत्तर प्रदेश शासन।
2- समस्त मण्डलायुक्त/समस्त जिलाधिकारी, उत्तर प्रदेश।
3- आयुक्त एवं निदेशक, भूमि अध्याप्ति निदेशालय, राजस्व परिषद,उ0प्र0।
4- समस्त विभागाध्यक्ष, उत्तर प्रदेश।

राजस्व अनुभाग-13 लखनउ दिनांक 19 मार्च, 2015

विषय- भू-स्वामियों से आपसी समझौते के आधार पर भूमि क्रय करने के संबंध में प्रक्रिया का निर्धारण।

महोदय,

राजस्व अनुभाग-13 के शासनादेश संख्या-632/एक-13-11-20(29)/2004, दिनांक 02 जून, 2011 द्वारा निर्गत नीति के अनुसार सभी प्रयोजनों के लिए भूमि प्राप्त करने की प्रदेश की सामान्य नीति यह है कि भू-स्वामियों एवं अर्जन निकायों के मध्य आपसी समझौते के आधार पर क्रय से संबंधित नियमों/आदेशों के अनुसार भूमि सीधे भू-स्वामियों से क्रय की जाय । भारत सरकार द्वारा भू-अर्जन अधिनियम, 1894 को निरस्त करते हुए "**भूमि अर्जन, पुनर्वासन और पुनर्व्यस्थापन में उचित प्रतिकर और पारदर्शिता का अधिकार अधिनियम, 2013 (अधिनियम संख्या 30 सन् 2013)**" प्रख्यापित किया गया है जो 01-01-2014 से प्रभावी है। इस अधिनियम की धारा 46 में निर्दिष्ट व्यक्तियों से भिन्न व्यक्तियों की दशा में सीधे भूमि क्रय करने पर उक्त अधिनियम की दूसरी अनुसूची में उल्लिखित पुनर्वासन और पुनर्व्यस्थापन संबंधी लाभ दिये जाने एवं क्रय की कार्यवाही कलेक्टर के माध्यम से करने की व्यवस्था है।

1- यह शासनादेश इलेक्ट्रानिकली जारी किया गया है, अतः इस पर हस्ताक्षर की आवश्यकता नहीं है ।
2- इस शासनादेश की प्रमाणिकता वेब साइट http://shasanadesh.up.nic.in से सत्यापित की जा सकती है ।

2- वर्ष 2013 के नये अधिनियम के अंतर्गत भूमि अधिग्रहण की प्रक्रिया समय एवं श्रम साध्य होने एवं सीधे भूमि क्रय करने की व्यवस्था को प्रोत्साहित किये के उददेश्य से प्रदेश के राजकीय विभागों, स्वायत्तशासी निकायों, विकास प्राधिकरणों, औद्योगिक प्राधिकरण, विभिन्न विभागों के प्रशासनिक नियंत्रण में गठित परिषदों एवं प्रदेश में कार्यान्वित होने वाली पब्लिक-प्राइवेट भागीदारी परियोजनाओं आदि अर्थात इन "क्रय निकायों" के लिए भू-स्वामियों से सीधे भूमि क्रय किये जाने हेतु प्रक्रिया निर्धारित की जा रही है।

3- इस सम्बन्ध में मुझे यह कहने का निदेश हुआ है कि शासन द्वारा उपर प्रस्तर-2 में उल्लिखित क्रय निकायों हेतु भू-स्वामियों / कृषकों से आपसी सहमति के आधार पर भूमि क्रय करने हेतु निम्नवत प्रक्रिया निर्धारित की जाती है।

(क) लघु परियोजनाओं हेतु

(1) उपरोक्त क्रय निकायों हेतु "लघु परियोजनाओं" अर्थात ऐसी परियोजनाएं जिनमें परियोजना के लिए क्रय की जाने वाली भूमि की कुल कीमत रू0 10·00 करोड़ तक है के लिए भूमि की दरों की स्वीकृति एवं कुल भूमि मूल्य के

अनुमोदन हेतु सबांधित अपर जिलाधिकारी (वित्त एव राजस्व) की अध्यक्षता मे निम्नानुसार "**जिला (लघु परियोजना) क्रय की दर तथा कुल भूमि मूल्य अनुमोदन समिति**" का गठन किया जाता है:-

1-	अपर जिलाधिकारी(वि0/रा0)	अध्यक्ष
2-	संबंधित अपर जिलाधिकारी(भू0अ0)/विशेष भूमि अध्यासि अधिकारी/उप भूमि अध्यासि अधिकारी	सदस्य
3-	संबंधित उप जिलाधिकारी(परियोजना प्रशासक)	सदस्य
4-	संबंधित सब रजिस्ट्रार/उप महानिरीक्षक स्टैम्प एवं निबंधन/ सहायक महानिरीक्षक स्टैम्प एवं निबंधन	सदस्य
5-	क्रय निकाय/विभाग द्वारा प्राधिकृत अधिकारी	सदस्य सचिव

(2) सदस्य सचिव द्वारा समिति की बैठकों एवं कार्यवाहियों का संचालय किया जायेगा। समिति क्रय निकाय द्वारा अपर जिलाधिकारी(वित्त एवं राजस्व) के समक्ष भूमि क्रय करने का प्रस्ताव/संदर्भ/आवेदन पत्र प्रस्तुत करने के एक माह के अन्दर क्रय की जाने वाली भूमि की दर एवं कुल भूमि मूल्य का विनिश्चय करते

1- यह शासनादेश इलेक्ट्रानिकली जारी किया गया है, अतः इस पर हस्ताक्षर की आवश्यकता नहीं है ।
2- इस शासनादेश की प्रमाणिकता वेब साइट http://shasanadesh.up.nic.in से सत्यापित की जा सकती है ।

हुए प्रस्ताव अनुमोदन हेतु संबंधित जिलाधिकारी के समक्ष प्रस्तुत करेगी। यदि निर्धारित अवधि में समिति द्वारा अपेक्षित कार्यवाही पूर्ण नहीं की जाती है तो अपर जिलाधिकारी(वित्त एवं राजस्व)/अध्यक्ष समिति द्वारा विलम्ब का स्पष्टीकरण संबंधित जिलाधिकारी के समक्ष प्रस्तुत किया जायेगा।

(3) अपर जिलाधिकारी द्वारा अनुमोदित दर एवं कुल भूमि मूल्य पर संबंधित जिलाधिकारी द्वारा 15 दिन के अन्दर अनुमोदन प्रदान करने पर निर्णय ले लिया जायेगा और तदनुसार अपर जिलाधिकारी को सूचित किया जायेगा। यदि निर्धारित अवधि में जिलाधिकारी द्वारा यथोचित निर्णय नहीं लिया जाता है तो विलंब का स्पष्टीकरण मण्डलायुक्त के समक्ष प्रस्तुत किया जायेगा।

(4) जिलाधिकारी के अनुमोदन के उपरान्त क्रय निकाय द्वारा सीधे क्रय की कार्यवाहीं की जायेगी और पृथक से और किसी स्तर का अनुमोदन अपेक्षित नहीं होगा।

(ख) मध्यम एवं वृहद परियोजनाओं हेतु

(1) उपरोक्त क्रय निकयों हेतु "मध्य एवं वृहद परियोजनाएं" अर्थात ऐसी परियोजनाए जिनमें परियोजना के लिए क्रय की जाने वाली भूमि की कुल कीमत रू0 10.00 करोड से अधिक है, की भूमि की दरों की स्वीकृति एवं कुल भूमि मूल्य पर अनुमोदन हेतु संबंधित जिलाधिकारी की अध्यक्षता में निम्नानुसार "जिला (मध्यम एवं वृहद परियोजना) क्रय की दर तथा कुल भूमि मूल्य अनुमोदन समिति" का गठन किया जाता है:-

1-	जिलाधिकारी	अध्यक्ष
2-	अपर जिलाधिकारी(वि0/रा0)/जिला रजिस्ट्रार	सदस्य
2-	संबंधित अपर जिलाधिकारी(भू0अ0)/विशेष भूमि अध्यासि अधिकारी/उप भूमि अध्यासि अधिकारी	सदस्य
3-	संबंधित उप जिलाधिकारी(परियोजना प्रशासक)	सदस्य
4-	संबंधित सब रजिस्ट्रार/उप महानिरीक्षक स्टैम्प एवं निबंधन/ सहायक महानिरीक्षक स्टैम्प एवं निबंधन	सदस्य
5-	क्रय निकाय/विभाग द्वारा प्राधिकृत अधिकारी	सदस्य सचिव

(2) सदस्य सचिव द्वारा समिति की बैठकों एवं कार्यवाहियों का संचालन किया जायेगा। समिति क्रय निकाय द्वारा जिलाधिकारी के समक्ष भूमि क्रय करने का

1- यह शासनादेश इलेक्ट्रानिकली जारी किया गया है, अतः इस पर हस्ताक्षर की आवश्यकता नहीं है ।
2- इस शासनादेश की प्रमाणिकता वेब साइट http://shasanadesh.up.nic.in से सत्यापित की जा सकती है ।

प्रस्ताव / सन्दर्भ / आवेदन पत्र प्रस्तुत करने के एक माह के अन्दर क्रय की जाने वाली भूमि की दर एवं कुल भूमि मूल का विनिश्चय करते हुए प्रस्ताव अनुमोदन हेतु सम्बन्धित मण्डलायुक्त के समक्ष प्रस्तुत करेगी। यदि निर्धारित अवधि में समिति द्वारा अपेक्षित कार्यवाही पूर्ण नहीं की जाती है तो जिलाधिकारी / अध्यक्ष समिति द्वारा विलम्ब का स्पष्टीकरण संबंधित मण्डलायुक्त के समक्ष प्रस्तुत किया जायेगा।

(3) जिलाधिकारी द्वारा अनुमोदित दर एवं कुल भूमि मूल्य पर संबंधित मण्डलायुक्त द्वारा 15 दिन के अन्दर अनुमोदन प्रदान करने पर निर्णय ले लिया जायेगा और तदनुसार जिलाधिकारी को सूचित किया जायेगा। यदि निर्धारित अवधि में मण्डलायुक्त द्वारा यथोचित निर्णय नहीं लिया जाता है तो विलंब का स्पष्टीकरण अध्यक्ष, राजस्व परिषद के समक्ष प्रस्तुत किया जायेगा।

4- उपरोक्त दोनो समितियों क्रय की जाने वाली भूमि विवाद रहित एवं भार रहित है, का परीक्षण भी करेगी और यथायवश्यक किसी भी विभाग/ अधिकारी से सहयोग प्राप्त कर सकेगी और यथावश्यक दर निर्धारण करने हेतु प्रस्तुत तथ्यों की प्रति परीक्षा कर सकेगी।

5-उपरोक्त दोनो समितियों निम्नलिखित मार्गदर्शी सिद्वान्तों के आधार पर क्रय [illegible] परिसम्पत्तियों का मूल्य, खडी फसलों, वृक्षों एवं संबंधित अनुषांगिक व्यय (यदि कोई हो, भी सम्मिलित है) का अनुमोदन करेगी।

(1) उस क्षेत में जहां भूमि स्थित है, क्रय किये जाने हेतु प्रस्तावित भूमि के आस-पास परियोजना प्रारम्भ होने अथवा परियोजना के अनुमोदन प्रदान किये जाने के दिनांक से 06 माह पूर्व के निष्पादित विक्रय विलेखों (बैनामों) में अंकित भूमि की दर तथा भरतीय स्टाम्प अधिनियम, 1899 के अंतर्गत निर्धारित सर्किल दर।

(2)भूमि पर स्थित परिसम्पत्तियों का मूल्य। समिति द्वारा यथावश्यक परिसम्पत्तियों का आंकलन एवं मूल्य का निर्धारण सक्षम शासकीय विभाग से कराया जा सकेगा।

(3) क्रय की जाने वाली भूमि का तत्काल कब्जा प्राप्त किये जाने की स्थिति में संबंधित भू-स्वामी की खडी फसलों,वृक्षों सम्पत्तियों का मूल्य।

1- यह शासनादेश इलेक्ट्रानिकली जारी किया गया है, अत: इस पर हस्ताक्षर की आवश्यकता नहीं है ।

2- इस शासनादेश की प्रमाणिकता वेब साइट http://shasanadesh.up.nic.in से सत्यापित की जा सकती है ।

(4) क्रय की जाने वाली भूमि की भवनिक/औद्योगिक क्षमता, आबादी से दूरी को ध्यान में रखा जायेगा।

(5) उस दशा में जब भू-स्वामी/कृषक की भूमि क्रय किये जाने के परिणाम स्वरूप अपना निवास या कारोबार/व्यवसाय का स्थान बदलने के लिए विवश हो जाता है, तो ऐसी तब्दीली से संबंधित अनुषांगिक व्यय (यदि कोई हो) पर भी विचार किया जायेगा।

(6) यह स्पष्ट किया जाता है क्रय की जाने वाली भूमि की दर शहरी क्षेत्र में बाजार मूल्य अथवा सर्किल दर, जो भी अधिक हो, के दो गुने और ग्रामीण क्षेत्र में स्थित होने पर बाजार मूल्य अथवा सर्किल दर जो भी अधिक हो, के चार गुने से अधिक नहीं होगी।

(7) संबंधित भू-स्वामियों से संलग्न प्रारूप संख्या- 1 पर भूमि क्रय किये जाने हेतु दर एवं कुल भूमि मूल्य पर सहमति प्राप्त की जायेगी और सहमति पत्र पर हस्ताक्षर करने के दिनांक को लागू सर्किल दर/प्रचलित बाजार मूल्य को सभी प्रयोजनों हेतु स्वीकार किया जायेगा।

6- संबंधित क्रय निकाय/विभाग, जिलाधिकारी द्वारा नामित राजस्व अधिकारियों के सहयोग से भू-स्वामियों से वार्ता कर आपसी सहमति के आधार पर क्रय की जाने

6- संबंधित क्रय निकाय/विभाग, जिलाधिकारी द्वारा नामित राजस्व अधिकारियों के सहयोग से भू-स्वामियों से वार्ता कर आपसी सहमति के आधार पर क्रय की जाने वाली भूमि के भू-अभिलेखों के अनुसार स्वामित्व आदि के सम्यक परीक्षण एवं जांचोरान्त विवादरहित एवं भारमूक्त होने की दशा में भूमि के बाजार मूल्य एवं पुनर्वासन एवं पुनर्व्यस्थापन संबंधी अन्य लाभों का संज्ञान लेते हुए संबंधित भू-स्वामियों की लिखित सहमति सहित क्रय की जाने भूमि की दर एवं कुल भूमि मूल्य का युक्तिसंगत एवं औचित्यपूर्ण प्रस्ताव जिलाधिकारी/अध्यक्ष समिति के समक्ष प्रस्तुत किया जायेगा। इस प्रस्ताव में वह प्रयोजन जिसके लिए भूमि क्रय किया जाना प्रस्तावित है, क्रय की जाने वाली भूमि का क्षेत्रफल और भूमि का अन्य विवरण भी प्रस्तुत किया जायेगा।

7- क्रय की जाने वाली भूमि की दर एवं कुल भूमि मूल्य पर अनुमोदन के उपरान्त एवं विक्रय विलेख निष्पादन के पूर्व संबंधित क्रय निकाय/विभाग द्वारा निम्नानुसार सक्षम अधिकारी का अनुमोदन प्राप्त किया जायेगा:-

सीधे भूमि क्रय किये जाने वाली भूमि का प्रस्तावित कुल मूल्य	अनुमोदन हेतु सक्षम स्तर

1	रू0 50 करोड तक	संबंधित मण्डलायुक्त
2	रू0 50 करोड से अधिक (राजकीय विभाग/स्थानीय निकाय की दशा में)	संबंधित प्रशासकीय विभाग
3	रू0 50 करोड से अधिक (राजकीय निगम/राजकीय प्राधिकरण/औद्योगिक प्राधिकरण/आवास विकास परिषद की दशा में)	संबंधित निगम प्राधिकरण/परिषद का गवर्निंग बोर्ड/प्रबन्ध मण्डल