

ENVIRONMENT AND SOCIAL ASSESSMENT REPORT

(Draft Disclosure for Discussion)

For

Construction of

Water Supply Augmentation at Burhanpur

Sub project of

Madhya Project Urban Development Project

Assessment done by:

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for

Madhya Pradesh Urban Development Company

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ABBREVIATIONS

AC	--	Asbestos Cement
CPCB	–	Central Pollution Control Board
CPHEEO	--	Central Public Health Environmental Engineering Organization
CWR	-	Clear Water Reservoir
CWRM	-	Clear Water Rising Main
D(R) BO	--	Design Review and Built operate
DPR	–	Detailed project report
DUAD	–	Directorate of Urban Administration and Development
EIA	–	Environmental impact assessment
EMP	–	Environmental management plan
ESMF	-	Environmental and Social Management Framework
GOI	-	Government of India
GOMP	–	Government of Madhya Pradesh
HFL	–	Highest flood level
BMC	--	Burhanpur Municipal Corporation
LPCD	--	Liter per capita per day
LPM	-	Liters per minute
LWL	-	Lowest Water Level
MCM	--	Million Cubic Meter
MLD	-	Million Liters per Day
MOEF& CC	–	Ministry of Environment, Forest& Climate Change
MP	-	Madhya Pradesh
MPUDC	--	Madhya Pradesh Urban Development Company
MPUDP	--	Madhya Pradesh Urban Development Project
NOC	–	No Objection Certificate
NO _x	–	Oxides of nitrogen
OHT	--	Over Head Tank
OP	-	Operational Policy
PIU	–	Project Implementation Unit
PMC	--	Project Management Consultant
PWD	–	Public Works Department
RoW	–	Right of way
SO ₂	–	Sulphur Dioxide
SPCB	–	State Pollution Control Board
UDED	--	Urban Development and Environment Department
ULB	--	Urban Local Body
WTP	--	Water Treatment Plant

EXECUTIVE SUMMARY

1. INTRODUCTION:

Madhya Pradesh (MP) is geographically the second largest, fifth populous, and eighth most urbanized state in India. Although MP recorded a higher rate of growth for its urban compared to rural population in the last decade, its urbanization rate is still below the national average but it is projected to catch-up in the next 15 years. At present, MP's total urban population is of 20.1 million (28% of total population) concentrated in 476 urban centers.

Rapid urbanization in MP has seen sprouting of new urban settlements across the state, more often close to existing cities. The last decade (2001-2011) has seen a 20% increase in the number of urban centers, including a 50% increase in census towns, compared to a 6% increase in the previous decade (1991-2001). In the cities in MP, household access to piped water supply ranges between 48-80%, per capita; water supply ranges between 35 to 150 lpcd; access to underground sewerage range between nil to 40%; waste collection ranges between 85-90%, and 60-80% of rainwater runoff is effectively drained.

The proposed Burhanpur Water Supply Project is one of the subproject under the Madhya Pradesh Urban Development project (MPUDP) being prepared by the GoMP for possible financing by the World Bank. The components to be constructed under this project include: (i) construction of intake well; (ii) construction of Water Treatment Plant (WTP); (iii) raw water rising main and clear water rising main; (iv) construction of Over Head Tank (OHT); and (v) Distribution network.

This report presents an Environmental and Social Assessment (ESA) of the Burhanpur Water Supply subproject under MPUDP. The ESA identifies potential impacts on the natural environment and the social situation in Burhanpur region during construction and operation of the project. Where potential adverse effects are predicted, mitigation has been developed and its implementation is presented in an Environmental and Social Management Plan (ESMP).

This project has been identified as a 'Category E_a' project, due to the environmental sensitivities of constructing intake well in River Tapti and presence of number of archeological monuments in Burhanpur. In line with the requirements of ESMF for MPUDP, the project hence requires an EA study and an Environmental Management Plan. With regard to social safeguards, the project has been classified as 'Category E_b', due to limited land acquisition impacts.

2. PROJECT DESCRIPTION

Burhanpur is a medieval walled town on the banks of River Tapti, in East Nimar (Khandwa) district of Madhya Pradesh. Burhanpur has a remarkable history owing to its handloom industry and religious & cultural background. . At present town is organized into 48 municipal wards with a population of 210,890 (Census 2011).

Currently, water to the city is supplied through 14 tube wells located on the banks of River Utawali. Water from these tube wells is collected into a common sump (9m in diameter and 6 m in depth) located at the river Banks located at Burhanpur – Indore road. Water from this sump is pumped and conveyed by transmission main into overhead tanks and Clear Water Reservoirs

(CWR) fetching approximately 4.30 Million Liters per Day (MLD) of water. An additional 9.20 MLD of water is supplied through 82 tube wells constructed at different locations of the town. Discharge of tube well ranges between 300 to 400 Lpm. The distribution system was first laid in year 1917 and subsequently pipes of dia 80mm – 100mm dia were laid in year 1972, 1985 and pipes of dia up to 250mm were laid after 2000. All this network is directly connected to tube wells. Overall the present system in city is haphazard.

3. PROPOSED PROJECT

Burhanpur town is situated on the bank of River Tapi. The River flows through the Satpura hills and flows on eastward side of the town. Thus Tapi is the main source of water supply in Burhanpur town. As part of the proposed project, the following activities are proposed:

- An annicut on tapi river near Basad village (approximated 750 m down stream), which is approximately 8 Km from Burhanpur – Indore road. .
- An intake well of 10m diameter on the banks of river Tapi to collect and lift water up to treatment works.
- Raw Water Rising Main of 800mm dia and 400m long
- Water treatment plant of capacity 50 MLD is proposed near Intake well at the bank of River.
- Clear Water Rising Mains and feeders from WTP to OHT of diameter varying from 150mm to 800mm and of total length 19763m.
- Eight new Over Head Tanks (OHT) are proposed of total 13250 KL capacity.
- Distribution network of pipes of diameter varying from 110mm to 600mm and total length of 164099m.

4. LEGAL, POLICY AND ADMINISTRATIVE FRAMEWORK

REGULATORY FRAMEWORK (Environment and Social):

The National and state level environmental laws and the Operational Policies of the World Bank are applicable to MPUDP financed projects. The most important of the applicable environmental laws applicable for Burhanpur water supply project, are Water (Prevention And Control of Pollution) Act, 1974, The Water (Prevention And Control of Pollution) Act, 2012, Forest (Conservation) Act, 1980, Air (Prevention and Control of Pollution) Act 1981, etc and the World Bank OP 4.01 Environmental Assessment and OP 4.11 Physical Cultural Resources..

The applicable social development regulations are Land Acquisition Act-RTFCTLARR Act 2013, The Street Vendors(Protection of Livelihood and Regulation of Street Vending) Act, 2014, The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act,2006 etc and the World Bank OP 4.12 Involuntary Resettlement, OP4.10 Indigenous People.

5. BASELINE ENVIRONMENT PROFILE

Environmental and Social Profile of the study area of Project site based on secondary data of Physiography, Topology, climate, water quality, Biological profile of Burhanpur town.

Socio economic profile of the town also based on secondary data of Demographic data, Land use, Work force distribution in town, Vulnerability & Commercial activities of town etc.

6. ASSESSMENT OF ANTICIPATED IMPACTS

This Chapter identifies and discusses both positive and negative impacts associated with the proposed project and their mitigation measures. The anticipated impacts and corresponding mitigation measures are discussed in Phases namely: design, construction, operation and decommissioning Phases. This chapter focuses on the prediction and assessment of impacts on the various ES components due to the project activities. Based on the magnitude and duration of the project activities, the nature, duration and extent of impact are assessed. Minor project impacts have also been identified and basis for their insignificance has been provided. Wherever relevant, the EMP/SMP also addresses the minor impacts and provides environmental and social mitigation / environmental enhancement measures.

Possible Environmental and Social Impacts during Design Phase, Construction Phase and Operation Phase has been identified and mitigations during these phases have been suggested.

7. STAKEHOLDER AND PUBLIC CONSULTATION

Stakeholder and Public consultation is useful for gathering environmental data, understanding likely impacts, determining community and individual preferences, selecting project alternatives and designing viable and sustainable mitigation and compensation plans. Extensive public consultation meetings for the Burhanpur Water Supply Project took place while undertaking this ESA study. The main objective for the consultation process was to involve the community at the very early stages so as to identify likely negative impacts and find ways to minimize negative impacts and enhance positive impacts of the project.

Public sensitization and inclusion meetings were held within the wards of the project area from 24th April' 2016 to 26th April' 2016 with the help of respective local administration and the elected representatives. A total of 9 meetings were held the key outputs of consultations have been taken into consideration and suggested changes in the design and implementation activities.

8. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The ESMP presented in this Chapter summarizes the key impact elements identified and the remedial measures, the actions to be taken by various parties and the monitoring activities. An indication of the time scale for implementation and cost involved is also provided. The ESMP can be further expanded during implementation with documented procedures and guidelines for work practices so as to be as responsive to the situations that various Contract Parties will encounter.

The effectiveness of the ESMP shall be monitored and assessed during spot checks, formal inspections and at the end of the Project when an overall audit of the works shall be carried out.

9. Monitoring and Evaluation

Monitoring and evaluation process will involve the assessment of the following benchmarks

- The implementation process of guidelines stipulated in the ESMP
- Evaluate impact of the project to the environment and social setting of Burhanpur town.
- Monitoring of the involvement of the community through public consultations in decision makings and the implementation of the project

Urban Development and Environment Department (UDED) of Government of Madhya Pradesh (GoMP) will be the Executing Agency for the Program, responsible for management, coordination and execution of all investment program activities. Implementing Agency will be the Madhya Pradesh Urban Development Company (MPUDC) of GoMP, which will implement this program via a Project Management Unit (PMU) at Bhopal, and Project Implementation Units (PIUs) at project towns. PMU will appoint contractors to build infrastructure and PIUs will coordinate the construction. PMU and PIUs will be assisted by Program Management Consultants (PMC).

10. VULNERABLE GROUP (SC/ST) IN BURHANPUR

The tribal population of Madhya Pradesh increased to 15,316,784 in 2011 from 12,233,474 in 2001. The decadal growth rate during this period is 25.20 percent. The trends in the population of the Scheduled Tribes by residence (total, Rural and Urban) for Census Years 1961- 2011 shows that the percentage of Scheduled Tribes Population in the Rural Areas (11.3 percent) much higher than Urban Population (2.8 percent). In Madhya Pradesh certain areas have been declared as scheduled area as Specified by the Scheduled Areas under the Sixth Schedule of Indian Constitutions.

As Burhanpur district is declared scheduled area in Schedule V by Government of Madhya Pradesh. Social Impact screening done on different aspects no negative impact of project on Indigenous people hence the project is coming under category Sc IPDP plan is required for IPs for the active participation of Indigenous people.

11. CONCLUSION AND RECOMMENDATIONS

The Environmental and Social Impact Assessment (ESA) Study was carried out based on field assessments and public consultations with the community who are likely to benefit or to be affected by the proposed Project and the Proponent in compliance with the World Bank environmental and social safeguard policies.

There are no environmentally sensitive areas (like forest, sanctuaries etc) in or near sub-project area. Although there are ASI protected structures in Burhanpur town but they are within the old city where the arrangements for water supply already exist and no work is proposed within 300m

of such structures under this sub project, hence, there will be no impact on such ASI protected structures. Hence the impact identified are mostly related to construction and operation phase.

There is no land acquisition nor any involuntary resettlement required in the project. During implementation only temporary disruption (damage to public utilities/temporary structure etc) is assumed, this can be avoided. There is no negative impact on vulnerable group.

CHAPTER 1

INTRODUCTION

1.1 Project Background

Madhya Pradesh (MP) is geographically the second largest, fifth populous, and eighth most urbanized state in India. Although MP recorded a higher rate of growth for its urban compared to rural population in the last decade, its urbanization rate is still below the national average but it is projected to catch-up in the next 15 years. At present, MP's total urban population is of 20.1 million (28% of total population) concentrated in 476 urban centers as follows: 378 municipal bodies of which 16 are Municipal Corporations (Nagar Palik Nigams), 100 are Municipal Councils (Nagar palika Parishad), and 262 are Nagar Panchayats, and 98 Census Towns - identified as areas with urban characteristics, but not formally notified as urban. Of the 16 municipal corporations, four (Indore, Bhopal, Jabalpur, and Gwalior) are million-plus cities.

Rapid urbanization in MP has seen sprouting of new urban settlements across the state, more often close to existing cities. The last decade (2001-2011) has seen a 20% increase in the number of urban centers, including a 50% increase in census towns, compared to a 6% increase in the previous decade (1991-2001). The last decade also saw more than a quarter-fold increase in population of the four largest urban agglomerations including Bhopal and Indore. In the cities in MP, household access to piped water supply ranges between 48-80%, per capita; water supply ranges between 35 to 150 lpcd; access to underground sewerage range between nil to 40%; waste collection ranges between 85-90%, and 60-80% of rainwater runoff is effectively drained.

The development objective of the proposed Madhya Pradesh Urban Development Project (MPUDP) supported by The World Bank, is to enhance the capacity of the relevant State-level institutions to support ULBs in developing and financing urban infrastructure. To achieve the above, the project envisages the following three components, Institutional Development Component, Urban Investment Component, Bhopal-Indore Super Corridor.

The proposed Burhanpur Water Supply Project is one of the subproject under the Madhya Pradesh Urban Development project (MPUDP) being prepared by the GoMP for a possible financing by the World Bank. The components to be constructed under this project include:

- An annicut on tapti river near Basad village (approximated 750 m down stream), which is approximately 8 Km from Burhanpur – Indore road. .
- An intake well of 10m diameter on the banks of river Tapti to collect and lift water up to treatment works.
- Raw Water Rising Main of 800mm dia and 400m long
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- Clear Water Rising Mains and feeders from WTP to OHT of diameter varying from 150mm to 800mm and of total length 19763m.
- Eight new Over Head Tanks (OHT) are proposed of total 13250 KL capacity.
- Distribution network of pipes of diameter varying from 110mm to 600mm and total length of 164099m.

1.2 Context of ESIA

This report presents an Environmental and Social Assessment (ESA) of the Burhanpur Water Supply subproject under MPUDP project. The ESA identifies potential impacts on the natural environment and the social situation in Burhanpur region during construction and operation of the project. Where potential adverse effects are predicted, mitigation has been developed and its implementation is presented in an Environmental and Social Management Plan (ESMP).

This project has been identified as a ‘Category E_a’ project, due to the environmental sensitivities of constructing intake well in River Tapi and presence of number of archeological monuments in Burhanpur. In line with the requirements of ESMF for MPUDP, the project hence requires an EA study and an Environmental Management Plan. With regard to social safeguards, the project has been classified as ‘Category E_b’, due to limited land acquisition impacts.

1.3 Scope of ESIA study

The Environmental and Social Impact Assessment to be carried out at the planning stages of the proposed undertaking to ensure that significant impacts on the environment are taken into consideration during the design, construction, operation and decommissioning of the Project. The scope of this ESIA study covered:

- Description of the proposed Project;
- The baseline environmental conditions of the ESIA study area;
- Provisions of the relevant environmental legislations;
- Public consultation through public meetings, interviews and administration of questionnaires;
- Prediction of any adverse impacts to the environment arising from the proposed Project;
- Appropriate mitigation measures; and
- Provision of an Environmental and Social Management Plan.

The output of this work led to this comprehensive Environmental and Social Impact

1.4 Objectives of ESIA Study

The objectives of the ESIA study are:

- To fulfill the legal requirements as outlined in EIA Notification 2006 and World Bank Safeguard requirements.
- To obtain background Environmental information of the sites and legal and regulatory issues associated with the proposed Burhanpur water supply project;
- To assess and predict the potential impacts during site preparation, construction and operational phases of the proposed Project;

- To make suggestions of possible alterations to the proposed design, based on the assessment findings;
- To propose mitigation measures for the potential adverse environmental impacts and safety risks;
- To allow for public participation; and
- To prepare an ESIA Report including an Environmental and Social Management and Monitoring Plan.

1.5. Methodology

The ESIA study was carried out based on desk review, field assessments and public consultations with the community who are likely to benefit from the project, the project affected persons and relevant Government institutions. In the course of the assignment potential impacts of all stages of the project from pre- construction, through construction and installation to operation in each region are evaluated against applicable environmental standards, regulations and guidelines, the existing environmental conditions, and issues and concerns raised by all project stakeholders. The assessment process incorporates the following key stages:

1.5.1. Desk review

A desktop study was conducted to review available published and unpublished reports, development plans and maps in order to compile relevant baseline biophysical and socio-economic information about the study area. The biophysical information was compiled on environmental aspects such as Topography, Climate, Soils, Water Resources, land use and flora and wildlife resources. On the socio-economic environment, the study compiled information on aspects such as population, education, labour force, poverty analysis and health.

1.5.2. Field visits

Field visits were conducted in the study area in order to collect site-specific information on the biophysical and socio-economic environment and to crosscheck the secondary data. While at the site, environmental data were recorded and potential impacts identified. In addition, environmental features relevant to the study were noted and photographs taken as record of key features.

1.5.3 Socioeconomic Survey

A socioeconomic survey was undertaken in all the locations that will be affected/benefit from the project. The main sampling unit of the survey was the household. The team consulted the area Corporators/Councillors, and ULB officials to identify the wards and households in the primary project's primary zone of influence and to introduce the enumerators to the households identified. The enumerators were sought within the project area. The resultant data was coded uniformly for data entry purposes. Quantitative data analyses were carried out using simple and relevant statistical methods such as average, percentage and frequency distribution.

1.5.4. Public consultation

Public consultations with reference to the proposed project, its likely impacts and outcomes, were undertaken through personal contacts and public meetings. The consultations were meant to give an indication of whether the proposed Project is welcome and the immediate perceptions that the affected parties associate with it.

i. Public meetings

The consultation process is focused on, seeking comment on key issues and concerns, sourcing accurate information, identifying potential impacts and offering the opportunity for alternatives or objections to be raised by the potentially affected parties; non-governmental organizations, members of the public and other stakeholders. Consultation helps to develop a sense of stakeholder ownership of the project and the realization that their concerns are taken seriously, that the issues they raise, if relevant, will be addressed in the Environmental and Social Assessment (ESA) process. Consultation with all project stakeholders started during the Scoping stage and continued throughout the ESA process. All relevant stakeholders have been identified using the most recent and accurate information available and the consultation results including:

- i. a list of stakeholders consultation ; and
- ii. a summary of the issues and concerns raised.

Consultations with the communities were conducted in the project area with the help of the local administration especially the councillors and ULB officials. The discussions during these public meetings were centered on key emerging issues relating to the project as well as the communities. Given the large size of the project area, a total of Nine (9) meetings were held at location levels within the project area.

ii. Interview of key stakeholder agencies

One-on-one interviews with government agencies and institutions in the project area were undertaken. These interviews were conducted to augment and confirm data and information obtained using the other tools and methodologies.

1.5.5. Impact assessment and analysis

Following the identification of all project environmental aspects and potential impacts, the level of impact that may result from each of the activity-receptor interactions will be assessed. The assessment and analyses methodologies for ESIA studies are based on multidisciplinary approaches and structured to allow for holistic study and assessment of the following key components of the environment in relation to the proposed Project:

1.5.6. Impact assessment and analysis

Following the identification of all project environmental aspects and potential impacts, the level of impact that may result from each of the activity-receptor interactions was assessed. The assessment and analyses methodologies for ESIA studies are based on multidisciplinary

approaches and structured to allow for holistic study and assessment of the following key components of the environment in relation to the proposed Project:

- Physical/chemical component;
- Biological/ecological component;
- Sociological/cultural component; and
- Economic/operational component.

1.6. Mitigation and monitoring

- **Mitigation:** Mitigation measures were taken into consideration and defined during the impact assessment process. Impacts that are identified as having a significance ranking of “high” or “critical” were analyzed in detail to identify additional mitigation measures that are potentially available to eliminate or reduce the predicted level of impact. Potential mitigation measures considered included: social and economic investment programs of the State Government of Madhya Pradesh and Central Government of India; engineering design solutions; alternative approaches and methods to achieving an activity’s objective; operational control procedures, and management systems. The results of the mitigation analysis and the mitigation measures included in Mitigation Plan of the Environmental & Social Management Plan.
- **Monitoring:** It will be necessary to monitor and audit the implementation of the project development and operation. Monitoring will provide the information necessary for feedback into the environmental & social management process and will assist in identifying where additional mitigation effort or where alteration to the adopted management approach may be required. The monitoring plan will be included in Monitoring Plan of the Environmental & Social Management Plan.

CHAPTER 2

PROJECT DESCRIPTION

2.1 Introduction

Burhanpur is a medieval walled town on the banks of River Tapti, in East Nimar (Khandwa) district of Madhya Pradesh. Burhanpur has a remarkable history owing to its handloom industry and religious & cultural background. This town gained regional level importance by reaching a population of one lakh in 1981. With the continuous growth of its physical area and cash crops like cotton, banana etc; agriculture-based industries and transport related activities have also grown in and around the city.



Figure 1: Location of Burhanpur District

2.2 Existing Water Supply Arrangements

The piped water supply in Burhanpur town was first introduced in the year 1917 by the British Government. At present town is organized into 48 municipal wards with a population of 210,890 (Census 2011).

Currently, water to the city is supplied through 14 tube wells located on the banks of River Utawali. Water from these tube wells is collected into a common sump (9m in diameter and 6 m in depth) located at the river Banks located at Burhanpur – Indore road. Water from this sump is pumped and conveyed by transmission main into overhead tanks and Clear Water Reservoirs (CWR) fetching approximately 4.3 Million Liters per Day (MLD) of water. An additional 9.20

MLD of water is supplied through 82 tube wells constructed at different locations of the town. Discharge of tube well ranges between 300 to 400 LPM.

The distribution system was first laid in year 1917 and subsequently pipes of dia 80mm – 100mm dia were laid in year 1972, 1985 and pipes of dia up to 250mm were laid after 2000. All this network is directly connected to tube wells. Overall the present system in city is haphazard. Total length of distribution system is approximately 132 Km comprising 250 mm dia maximum size to 50 mm dia pipes out of which 85.76 km (65.25% of total distribution network) comprise dia of up to 90 mm of CI, GI, PVC 4Kg/cm² & 6Kg/cm², ACP pipe material and rest 45.67 km (34.75%) pipeline is having dia from 100 mm to 250 mm of same pipe material in different locations of the town.

The network laid during British period were GI Pipes, which have completely worn-out. These pipes were replaced by PVC and other pipe materials in 1972 including extension of distribution pipes. Similarly replacement and extension work was carried out in 1985 also. Diameters of pipes laid in extension program are up-to 50 mm. More over these pipes have lived for approximately 30 years and more. Also as per the CPHEEO guidelines clause 10.3.4, minimum pipe sizes of 150 mm for town having population more than 50000 & in case of dead ends and grid minimum of 100 mm is acceptable. So this makes almost 85.76 km distribution network redundant, as the diameter of most of the network is of 90 mm. These pipelines are also inadequate for the required flow, due to more than 50 percent silt deposits and heavy leakages. For the rest of the 34.75 percent distribution network with 100mm to 250mm diameter, 22.823 km is found to be in a good condition. Overall of the total 132 km of existing distribution network, 22.823 km of pipeline is proposed to be utilized.

Existing Overhead Tanks

Four overhead tanks are existing in the present system details of which are as under:

Sl. No.	Location	Capacity	Staging	Year of construction
1.	Shanwara	1350 KL	20M	1917
2.	Quila	1125 KL	19M	1984-85
3.	Shikarpur	675 KL	18M	1984-85
4.	Lal Bagh	900 KL	18M	1984-85

RCC overhead tank situated at Shanwara as shown below is quite old (built in 1959), depleted and has almost lived its life therefore has not been considered. OHT at sindhipura ward has been constructed with a staging of 15 m only; therefore this tank has not taken into consideration and is been demolishing by BMC. All the other three tanks at Sl. No. 2 - 4 are in good condition.



OHT at Shanwara Ward at Burhanpur



OHT at Sindhipura Ward at Burhanpur

There are four CWR in the present system, which are as under:

1.	Shikarpur	-	9m dia x 6m depth	=	350 KI
2.	Anale Bazar	-	6.45m x 6.45m x 6m	=	230 KI
3.	Rohit colony	-	4.50m x 6m x 4.5m	=	112 KI
4.	Lal Bagh	-	6m dia x 6m depth	=	155 KI
Total					= 847 KL

Above CWRs and OHT at Sindhipura ward will be utilized for storage of water for firefighting purpose.

All these CWR are in good working condition and water is regularly is being supplied from these CWRs. Provision of their cleaning, minor maintenance & white wash etc. is being incorporated in the O & M estimate of the project. All these CWRs are already equipped with fire hydrants with electric pumping system in running condition from where tankers and fire tenders are filled in. In terms of preparedness for firefighting incident, BMC is having sufficient man power of more than 15 person and two fire tenders with respect to the number of fire incidents happened in earlier year. It is proposed to increase fire tenders from two to eight and respective man power and other assets also. Also few existing tube wells in every zone will be kept as a backup for filling the fire tenders.

Total production of water from all the sources is approximately 30 lac gallon or 13.50MLD out of which 9.20 MLD is being produced by 82 Nos. of TWs installed at difference locations as reported by Municipal Corporation, Burhanpur and if it is projected to supply to the design population of 239993 of 2017, then rate of water supply works out to about 55 LPCD. Keeping in view that a sewerage scheme is being planned for the city and as per the norms the per capita water supply should be 135, a total 37.25 MLD of water is required (after accounting for 15 percent losses) for Burhanpur in the base year 2017, a short fall of about 23.75 MLD.

The average yield of tube wells is only 150 to 400 LPM, making them uneconomical. Water from sump located at Utawali River is supplied only on alternate days for a total of about two hours, which further reduces the weighted average of daily per capita water supply..

2.3 Proposed Water Supply Scheme

Alternative Source Analysis

Source of water supply:

At present tube wells are the main source of water supply for Burhanpur, with a low yield of 300 to 400 LPM. To meet the future water demand of the town, additional 113 tube well will have to dug in addition to the existing 82 tubewells. This will result in huge amount of power consumption and their operation and maintenance.

Alternatively, River Tapti flows through the Satpura hills and flows on eastward side of the town, was considered as possible source of water supply. In addition to providing reliable and good quality of water supply, use of Tapti water will also reduce the O&M costs substantially. This will avoid depletion of ground water and associated impacts.

Alternatives for Intake Structure:

With regard to the alternatives for intake structure, two options were considered:

1. Construction of Renny Well along bank of river.
2. Construction an anicut across the river and creating a reservoir.

Since, River Taptis flow through hard strata and the banks are high with steep slopes (Almost 70°), near Burhanpur, renny well along with perforated pipes under river bed is not feasible.

Further, wastewater from open drains is also discharged into the River, and hence construction of anicut near city is not advisable.

Selection of Site for Intake Well and Anicut:

Detailed topographic surveys were carried out in River Tapti, for locating the anicut. This involved recoding river bed level and water depth by echo sounding in 14 Km long stretch of River Tapti from Nagjhiri Ghat to Borsal Village along the river. Based on these surveys the following three sites were considered.

- | | | |
|----|---------------------|----------|
| 1. | Near Nagjhiri | Site – 1 |
| 2. | Near Village Basad | Site – 2 |
| 3. | Near Borsal Village | Site – 3 |
- 1) **Nagjhiri Site-** Nagjhiri is just on the Northern outskirt of Burhanpur town and approximately 12 Km from the Burhanpur - Indore road. This site is situated in the upstream of Nagjhiri Crematoria and land for water treatment plant is also available at a distance of approximately 700 m from intake well site. However, the site has no approach road for WTP and intake well. This would require construction of about 800 m approach road for WTP and 508 m road for WTP to intake well and a 370 m long bridge over river Utawali for accessing the site.
 - 2) **Basad Village Site -** Basad village is approximately 8 Km from Burhanpur – Indore road. Water treatment site and anicut site can be located at about 750 m downstream of of Basad village. River bank at this location is approximately 25 m high with steep slopes. Land for water treatment is available on the the banks of River. Basad village is also connected with pucca road connecting Burhanpur – Indore road. The alignment of transmission line from water treatment plant to OHTs was also found suitable. This site will require construction of only 250m of approach road.
 - 3) **Borsal Village Site-** Borsal village is located at about 15Km from Burhanpur – Indore road. This site has a natural pondage in river formed by fragmented rocks. Water treatment and intake well site are very close just at a distance of 30 m, river bank is approximately 18m high. Length of conveyance from WTP to OHTs will be 19 Km and about 1Km of approach road will be required to be constructed.

Based on the evaluation of above options of all the three sites, and cost comparison of all the three sites Basad Village was finalized for the construction of Barrage, intake well and WTP. The site selected for the anicut is free from any notable environmental hinderance. The banks are sufficiently high to accommodate the required storage of water so that there is no submergence of any government and private land. The existence of flora and fauna is negligible. No cutting of trees will be involved. There is no fishing

activity in this or nearby vicinity. Sufficient government land is available to accommodate intake as well as WTP within a distance of 400m.

Location: - The Anicut site in Basad village can be traced on toposheet no. 55 C/7 at the Longitude **76-16'-24"** and Latitude **21-20'-19"**.

Provisions: An anicut of concrete structure with steel gates has been proposed across the river. 1200 mm Ø Hume pipe have been provided to remove the silt during flood season. The maximum height of Anicut has been kept up to 4.30 m plus 0.4 m, Free Board. The top width of anicut is kept as 4.00 m for free movement to install and removal of the gates and its operation & maintenance.

RAINFALL AND RIVER FLOW DATA

As per the records of rain gauge station at Burhanpur, the average annual rainfall is 909.72mm for the period 1967 – 2006.

While a maximum rainfall of 1446.60mm occurred in 1994, minimum rainfall of 286.80mm occurred in the year 2006. The catchment area of Tapti River is spread over approximately 3250 Sq. miles. The flow data of Tapti River at Burhanpur was collected Central Water Commission, New Delhi for the last 33 years (1972 to 2004). Based on the above data, the 90% dependable flow is 1609million cubic meter/ year.

Capacity of Proposed Reservoir

The 200 m long reservoir is designed for a net capacity of 9.63 MCm (excluding losses) and detail designs calculation are include in the detailed project report. .

Requirement of water in Year 2067 = 0.072 MCM/ day

Storage required for deficit period and losses = 10.77 MCM

Gross Storage capacity at 4.7m height (4.3m high + 400mm freeboard) anicut = 10.98 MCm



View of River Tapti



View of River bank



View of WTP Site adjoining River Bank



View of Tapti River at Proposed site



View of Tapti River at Proposed site



Intake Works

Intake well of 10m diameter is proposed on bank of river Tapti at approximately 750m downstream of Basad village to collect and lift water up to treatment works. H.F.L. and L.W.L. recorded during last 20 years is 233.00 and 219.30m respectively. The difference of L.W.L. and H.F.L. is 13.70 m. River bed is at 218.10 keeping the invert level of intake well 3 m below the bed level of the river at 215.10m and height 1m above HFL i.e. at RL 234.00, the height of intake well works out to 19.00 m. the diameter of intake well has been decided on the basis of space required for housing three numbers of 250 HP pumps.

Pumping Plants

The requirement and design of pumping plants has been worked out for intake well, water treatment plant zonal OHTs. Detail design is given in technical statement. The proposed pumps are tabulated on following page:

S. N.	Type of pump	Propose	Duties of pumping plants	Nos. Required	Total
1.	V.T.	Intake well to WTP	250 HP	(2W+1SB)	3
2.	Centrifugal	WTP to Zonal Overhead tanks	250 HP	(4W+2SB)	6
Total					9

Rising Main:

The economical size of rising main has been designed as per the procedure prescribed in Manual on Water Supply & Treatment, published by CPHEEO, Govt. of India, taking the value of coefficient 'C' as **140 for D.I. pipes**. The most economical alternative has been adopted. The details of proposed rising main are given below:

S N	PARTICULARS		DI K-9 Pipe								
	From	To	800 mm	750 mm	600 mm	500 mm	400 mm	350m m	300m m	250m m	150 mm
1	3	4	5	6	7	8	9	10	11	12	13
1	Intake	W.T.P	400	--	--	--	--	--	--	--	--
2	W.T.P.	Zones	8388	910	237	245	964	1005	2087	3939	1716
		Total	8788	910	237	245	964	1005	2087	3939	1716

Necessary provision for bye pass arrangement, valves & fittings and road cutting etc. has also been made in the estimate.

Capacity of water Treatment Plant:

Water treatment plant has been designed and proposed for middle stage year 2032.

Total Requirement of water in year 2032 = 48.554 MLD

Add 2.5 % wastage in Treatment = 1.213

Total = 49.767 MLD

Provide water treatment plant of 50 MLD capacities.

Therefore in the DPR 50 MLD capacity water treatment plant has been provided.

Process Flow Sheet **for** Water Treatment Plant: The primary contaminants in raw water are turbidity and iron. Raw water analysis on a water sample withdrawn from the source indicated turbidity below but close to 200 NTU and iron at 9.0 mg/l. However, it would be realistic to incorporate unit operations and processes to take care of much higher turbidity levels expected in rainy season.

The proposed process flow sheet is designed to make treated water aesthetically acceptable and safe for drinking purposes. To render water aesthetically acceptable, excess turbidity & iron will be removed to bring them as per with standards prescribed for Drinking Water. Pathogens will be destroyed to make water safe.

The process flow sheet will comprise of following Unit Operations & Processes.

<u>Unit Operations & Processes</u>	<u>Purpose</u>
1. Pre sedimentation	To remove higher level of turbidity
2. Alum Coagulation	To destabilize colloidal turbidity
3. Flocculation	To develop settle able flocs
4. Sedimentation	To bring down turbidity to < 50 NTU
5. Oxidation by Compressed Air	Precipitation & flocculation Or Chlorine
6. Sand Filtration	To remove flocculated materials
7. Disinfection	To kill pathogens & make water safe
8. Back wash recycling	Environmental aspect and conservation of water

Storage:

In the zonal distribution system overhead tanks have been provided. The capacity has been worked out on the basis of 8 hours water demand of middle stage period i.e. year 2032. Proposed Overhead Tanks are tabulated below:-

Zone	Existing Storage (In KL)	Proposed Storage (In KL)	Staging (m)
1	—	2200	20
2	1125	—	19
3	675	—	18
4	900	—	18
5	—	600	22
6	—	2200	22
7A	—	1250	22
7B	-----	1600	22
8	—	2600	22
9	—	2000	20
10	—	800	22
Total	2700	13250	

Total Storage provided = 15950 KL

The staging of overhead tanks has been proposed on the basis of required terminal pressure in design of distribution network.

Storage Reqd. for Fire Fighting:

Population in Year 2032 = 314.125 thousand

Water Reqd. = $100 \sqrt{314.125}$ = 1772.35 KL

Storage Reqd. = 590.78 KL

Clear Water underground Reservoir at WTP

The water from treatment plant will be pumped to individual zonal overhead tanks. Size of CWR works out to 30m x 20 x 4.4m including FB of 40 cm.

Pumping Station:

Pumping station at CWR of appropriate size has been provided to house the pumps. As per requirement following sizes of provided.

Sl. No.	Locations	Size of pumping station
1.	CWR at WTP site	1 No. 10m x 6m x 4.5m

Chlorination Plant

At water treatment plant site, post chlorination has been provided for disinfection of water.

Chemical storage room

1 no. chemical storage rooms of size 5m x 3m x 3.5m has been proposed for storage of chlorine & other chemicals at WTP Site. Storage room will accommodate the chemicals required for at least one-month demand.

Distribution Network

The distribution network for each zone has been provided as per design obtained by using computerized software with minimum size of 100mm dia. Since the existing pipes are quite old and worn out they need frequent repairing resulting huge expenditure on maintenance, as well as these pipes have lived their life, therefore old pipes laid in year 1917, 1972 & 1985 are not considered. However pipes laid after year 2000 have been considered with dia having more than 100mm which is 22823 meter in length. The proposed PE 100 pipe complies with the Indian Standard IS 4984:1995. The details of pipe proposed in distribution system are tabulated below:

Summary of proposed pipes

Sl. No.	Zone no.	DI. K-7 Pipes					PE Grade 100 Pipes					
		DI. K-7					6 kg/cm ²					
		600	550	500	450	400	355	280	225	160	140	110
1	2	3	4	5	6	7	8	9	10	12	13	14
1	1	72		80	33	337	377	346	111	137	624	11028
2	2			134	91		600	430	259	225	706	9900
3	3						234	126	162	253	1018	7820

Sl. No.	Zone no.	DI. K-7 Pipes					PE Grade 100 Pipes					
		DI. K-7					6 kg/cm ²					
		600	550	500	450	400	355	280	225	160	140	110
1	2	3	4	5	6	7	8	9	10	12	13	14
4	4							1064	170	269	1207	11490
5	5							523	599	28	193	2344
6	6	24			45	2295	1019	1166	98	38325		
7	7 A							230	109	79	204	12592
8	7 B	188	434	67	380	56	131	59	214		144	9857
9	8			10	59	87	479	540	40	73	666	27629
10	9				248	269	312	404	328	211	478	10140
		284	434	291	856	3044	4144	4888	1957	40600	5340	102796

Total length of proposed Distribution pipe = 164099m or 164.099 Km.

Provision for sluice valves, scour valves, air valves, and fire hydrants has also been made at suitable locations. Provision for road cutting and reinstatement of the same, has also been made in the DPR.

CHAPTER 3

LEGAL, POLICY AND ADMINISTRATIVE FRAMEWORK

3.1. Regulatory Framework - Environmental

Implementation of the subproject will be governed by the National and State of Madhya Pradesh environmental acts, rules, regulations, and standards, safeguard policies of The World Bank, and the Environmental and Social Management Framework (ESMF) of MPUDP. These regulations impose require avoidance / minimize/mitigate likely impacts on the environment. It is the responsibility of the project executing and implementing agencies to ensure subprojects are consistent with the legal framework, whether national, state or municipal/local. Compliance to these policies is required at all stages of the subproject including design, construction, and operation and maintenance.

The summary of environmental regulations and mandatory requirements for the subproject is shown in **Table 3.**

Table 3.1: Applicable Environmental Regulations for WSS

Law	Description
EIA Notification	EIA Notification of 2006 and 2009 (replacing the EIA Notification of 1994), set out the requirement for environmental assessment in India. This states that Environmental Clearance is required for certain defined activities/projects, and this must be obtained before any construction work or land preparation (except land acquisition) may commence. Projects are categorized as A or B depending on the scale of the project and the nature of its impacts. Category A projects requires Environmental Clearance from the The National Ministry of Environment and Forest. Category B projects require Environmental Clearance from the SEIAA. However, this is not required in this sub project.
Water (Prevention and Control of Pollution) Act of 1974, Rules of 1975, and amendments	Control of water pollution is achieved through administering conditions imposed in consent issued under provision of the Water (Prevention and Control of Pollution) Act of 1974. These conditions regulate the quality and quantity of effluent, the location of discharge and the frequency of monitoring of effluents. Permission from MPPCB shall be required in this sub project. BMC has already applied for the same and the NoC of MPPCB will be obtained before award of the bid.
Environment (Protection) Act, 1986 and CPCB Environmental Standards.	Emissions and discharges from the facilities to be created or refurbished or augmented shall comply with the notified standards. However, this is not required in this sub project.
Air (Prevention and Control of Pollution) Act of 1981, Rules of 1982 and	The subprojects having potential to emit air pollutants into the atmosphere have to obtain CTE under Section 21 of the Air (Prevention and Control of Pollution) Act of 1981 from WBPCB

amendments.	<p>before starting implementation and CTO before commissioning the project. The occupier of the project/facility has the responsibility to adopt necessary air pollution mitigation measures.</p> <p>This will be applicable during construction activities and proper safeguards as stated in EMP, shall be taken to comply air standards.</p>
Forest (Conservation) Act, 1980 and Forest Conservation Rules, 2003 as amended	As per Rule 6, every user agency, who wants to use any forest land for non-forest purposes, shall seek approval of the Central Government. However, this is not required in this sub project.
Ancient Monuments and Archaeological Sites and Remains Rules of 1959	<p>The Rules designate areas within a radius of 100 meters (m) and 300 m from the “protected property” as “protected area” and “controlled area” respectively. No development activity (including mining operations and construction) is permitted in the “protected area” and all development activities likely to damage the protected property are not permitted in the “controlled area” without prior permission of the Archaeological Survey of India (ASI). Protected property includes the site, remains, and monuments protected by ASI or the State Department of Archaeology.</p> <p>Burhanpur (old city) has the ASI protected monuments/ structures. However, no construction activity is proposed within the protected area and controlled area since the water supply arrangements already exist in these areas and the same will be linked to the new system envisaged under the proposed sub component.</p>
Madhya Pradesh State Water Policy, 2003	<p>Prepared in accordance with the National Water Policy, it states that “for environmental balance, skillful and planned management of all types of developmental activities, economic use on equitable basis and in view of the prime importance of water for all human and other living beings, an effective and sound water policy is necessary”.</p> <p>Policy is detailed in 17 sections dealing with different aspects of water resources. No. 7 deals with Water Allocation Priorities, and according to which drinking water supply shall have the highest priority followed by irrigation, power, tourism, etc.</p> <p>Water Resource Department is nodal department for permitting different uses of water resources. Policy also states that “clear provision for reservation of drinking water shall be made in irrigation projects”.</p> <p>The State Water policy is applicable to the whole of Madhya Pradesh and the WRD has given its consent for use of surface water under the same policy.</p>
Social-Acts, notifications, policies and guidelines	
The Right to Fair Compensation and Transparency in Land Acquisition,	<p>The Act provides for enhanced compensation and assistances measures and adopts a more consultative and participatory approach in dealing with the Project Affected Persons.</p> <p>As and when the rules for implementation of the Act are</p>

Rehabilitation and Resettlement Act, 2013	finalized, the processes and procedures of this Act will be complied with The RTFCTLARR Act 2013 .
The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014	GOI recently enacted the act that specifically aims to protect the rights of urban street vendors and to regulate street vending activities. It provides for Survey of street vendors and protection from eviction or relocation; issuance of certificate for vending; provides for rights and obligations of street vendors; development of street vending plans; organizing of capacity building programmes to enable the street vendors to exercise the rights contemplated under this Act; undertake research, education and training programmes to advance knowledge and understanding of the role of the informal sector in the economy, in general and the street vendors, in particular and to raise awareness.
The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.	An Act to recognise and vest the forest rights and occupation in forest land in forest dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recorded; to provide for a framework for recording the forests rights so vested and the nature of evidence required for such recognition and vesting in respect of forest land

3.2. World Bank Safeguard Policies: The Bank requires environment and social assessment (ESA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making.

Table 3.2: World Bank Safeguard Policies

World Bank Safe Guard Policies	Objective	Applicability (As per the assessment OP 4.104, OP 4.12 are not triggered as they are not required for this sub-project. However, OP 4.104 is triggered and SMP shall make provision for consultation with Scheduled Tribes and ensure equal access to the project benefits for all tribes and other disadvantaged groups.
OP 4.01 Environmental Assessment	The objective of this policy is to ensure that Bank financed projects are environmentally sound and sustainable.	The environmental issues will be identified adequately in advance. An Environmental Screening and Environmental Assessment (EA) with Environmental Management Plan (EMP) will be developed to manage environmental risks and maximize environmental and social benefits where applicable.
OP/BP 4.12 Involuntary Resettlement	The objective of this policy is to avoid or minimize involuntary resettlement where feasible, exploring all viable alternative project designs. Furthermore, it intends to assist displaced person in improving their former living standards; community participation in planning and implementing resettlement; and to provide assistance to affected people, regardless of the legality of title of land	There will be need for limited land acquisition resulting in: relocation or loss of shelter; loss of assets or access to assets; loss of income or means of livelihood. This policy applies to all components of the project that result in involuntary resettlement regardless of the source of financing. The policy applies to projects that are carried out, or planned to be carried out, contemporaneously with the project.
OP/BP 4.10 Indigenous People	This policy aims to protect the dignity, right and cultural uniqueness of indigenous people; to ensure that they do not suffer due to development; that they receive social and economic benefits	This policy shall trigger as the Scheduled Tribes are present in Burhanpur Town and in the Schedule V Area as per constitution. However, they are scattered all over the town. Tribal people in urban area do not exhibit characteristics such as living as a group, speaking a separate language from dominant population, having separate institutions in close proximity to the forest etc. Hence no separate plan is prepared.
OP/BP 4.11 Physical Cultural Resources	This policy aims at assisting in the preservation of cultural property, historical, religious and unique natural value-this includes remains left by previous human inhabitants and unique environment features, as well as in the protection and enhancement of cultural properties encountered in Bank- financed project.	This policy may be triggered by sub-project where cultural property, historical, religious and unique natural value-this includes remains left by previous human inhabitants and unique environment features may be affected by the project.

CHAPTER 4

BASELINE ENVIRONMENT PROFILE

4.1 Introduction

Burhanpur is a medieval walled town on the banks of River Tapti, in East Nimar (Khandwa) district of Madhya Pradesh. Burhanpur has a remarkable history owing to its handloom industry and religious & cultural background. This town gained regional level importance by reaching a population of one lakh in 1981. With the continuous growth of its physical area and cash crops like cotton, banana etc; agriculture-based industries and transport related activities have also grown in and around the city.

Burhanpur Municipal Corporation was constituted in year 1867 and Burhanpur District was formed on August 15, 2003, from the southern portion of Khandwa District. Tapti River flows through the district from North East to South West. The city is surrounded by ramparts and has 9 city gates. It has a number of mosques, temples, tombs, palaces and other structures of historical value. The development of agricultural produce in the district has been very good; with cotton, banana, sugarcane, wheat, etc. being the major crops of the district. The major occupation in the district is agriculture and ancillary activities. The handloom industry was also very active in Burhanpur but these have now been converted to power looms. With the Tapti River in the South East, the Pandharol nallah along the North West and South East direction and the railway line on the North west side, the city's growth is determined to a large extent by these existing natural and man-made boundaries, which pose constraints as well as create opportunities for future development.

4.2 Environmental Profile of the Project Influence Area

The ecologically significant systems within the study area of the project site are listed and briefly discussed below:-

Particulars	Status		
Archaeological monuments	Burhanpur is a beautiful city with a lot of historical monuments existing in its expanse, following are the ASI listed Monuments in Burhanpur. However, the water supply facility already exist within the “controlled area” of these monuments and no construction activities are proposed in such areas.		
	Name of Monument	Location	District
	1. Tomb of Shah Nawaj Khan	Burhanpur	Burhanpur
	2. Tomb of Adil Shah Faruki	Burhanpur	Burhanpur
	3. Tomb of Shah Suja and Copmpound	Burhanpur	Burhanpur
	4. Tomb of Nadir Shah and Compound	Burhanpur	Burhanpur

	5. Raja's Chhatari near Bardhaghat	Burhanpur	Burhanpur
	6. Bibi-Sahib's Masjid and compound	Burhanpur	Burhanpur
	7. The palace situated in the fort	Burhanpur	Burhanpur
	8. Churiwaloonki Masjid	Burhanpur	Burhanpur
National Parks and Wildlife Sanctuary	No national parks or wildlife sanctuary in the subproject area		
Core Zone of Biosphere Reserve/Habitat for Migratory Birds	No		
Lakes/Reservoir/Dam	No		
Rivers / Streams	Tapti River which is the source of water supply, flows adjacent to the town. Construction of anicut on river Tapti is proposed under the subproject, which is serious environmental Issue.		
Cultural Monuments	No significant cultural monuments in nearby vicinity		

The region is endowed with special attributes related to religion, tradition, spiritual knowledge and cosmological beliefs depicting the cultural heritage of humanity and source of aesthetic aspiration adorned with important local traditions.



The closest wild life sanctuary around Burhanpur is approx. 96 km called Yawal Wildlife Sanctuary. The Yawal Wildlife Sanctuary is located in the Yawal Tehsil of Jalgaon district of Maharashtra and Burhanpur and Khargone district of Madhya Pradesh. The Sanctuary is spread over an area of about 178 square kilometers covered with dense forest.





4.2.1. Site Environmental Features of Burhanpur WSS components

The subproject components located are in subproject town and their surroundings. The construction of Anicut on Tapti River, intake will be located close to river banks on government lands, while the WTPs including clear water sumps will be also located close to the intakes where sufficient government land is available. These facilities are located outside the town, and are mostly surrounded by agricultural lands. None of the components however located on any forest land. Rest of the components – water tanks, distribution lines, connections etc., will be located within the urban areas. The raw water transmission pipes, connecting intake and WTP, will be essentially outside the town, and clear water transmission pipes, from WTP to distribution reservoirs, will be partly outside and partly within the towns. Project area experience a subtropical climate, typical to north India, hot summers, cold and dry winters and monsoon rains. While there is no natural habitat left within the town areas, the areas near river intakes are comparatively intact though most of the lands there too converted into agricultural use. There are no protected areas, like wildlife sanctuaries, national parks, nor there any historically, archeologically protected areas in the

vicinity. Town is densely populated in the core/old town areas with narrow lanes, and small and closely built houses, while most of the areas are undeveloped and are still under agricultural use. Commercial areas are along the main roads, which are mostly congested with activities, pedestrians and traffic. Site environmental Features of proposed WSS components are presented in following table:

Table 4.1: Site environmental Features of proposed WSS components are presented in following

S.No.	Components	Detail of Location and Environmental features	Site Photographs
1.	<p>Barrage – 4.7 m height and 4m width</p> <p>Intake well- Intake well of 10m diameter is proposed on bank of river Tapi</p> <p>Raw water Rising Main- 800mm dia 400 m length</p>	<p>The Anicut site in Basad village can be traced on toposheet no. 55 C/7 at the Longitude 76-16'-24" and Latitude 21-20'-19". River bank is approximately 25m high with steep slope. No Land is under submergence of proposed Anicut. Water will be confined within the river cross section.</p> <p>Water treatment site is available at the bank of River. This site will require construction of only 250 m approach road. Aquatic life in the river is limited to local species of fishes, and aquatic plants. There are no sensitive features.</p> <p>Raw water pipeline (400 m length) will be laid from intake well to WTP.</p>	
2.	<p>WTP- 50 MLD capacity</p>	<p>WTP site is located adjacent to the proposed anicut. Total area required is 3.44 ha. of government land. No forest or sensitive area comes under proposed WTP site.</p>	

4.	Clear water rising Main (CWRM)	19.76 Km CWRM will be laid along the RoW of SH i.e. Indore- Burhanpur road, and of city roads. NOC from State PWD has already been obtained to lay CWRM within the RoW of State Highway. City roads are already owned by the BMC.	
5.	OHT	Proposed OHT 1 site at Shaukat Maidan 2200KL/ 15m height Site is vacant with 2 trees present at the site and owned by GoMP. The land use around the site is mixed.	
		Proposed OHT 2 at Marichika Garden, 600KL/ 17m high OHT site is proposed on the back side of the garden, hence for safety purpose divider wall should be constructed between garden and OHT.	
		Proposed OHT Site at Indira Colony C-Sector 800KL/ 17m high Selected site is currently vacant and owned by GoMP. The land use around the site is mixed.	


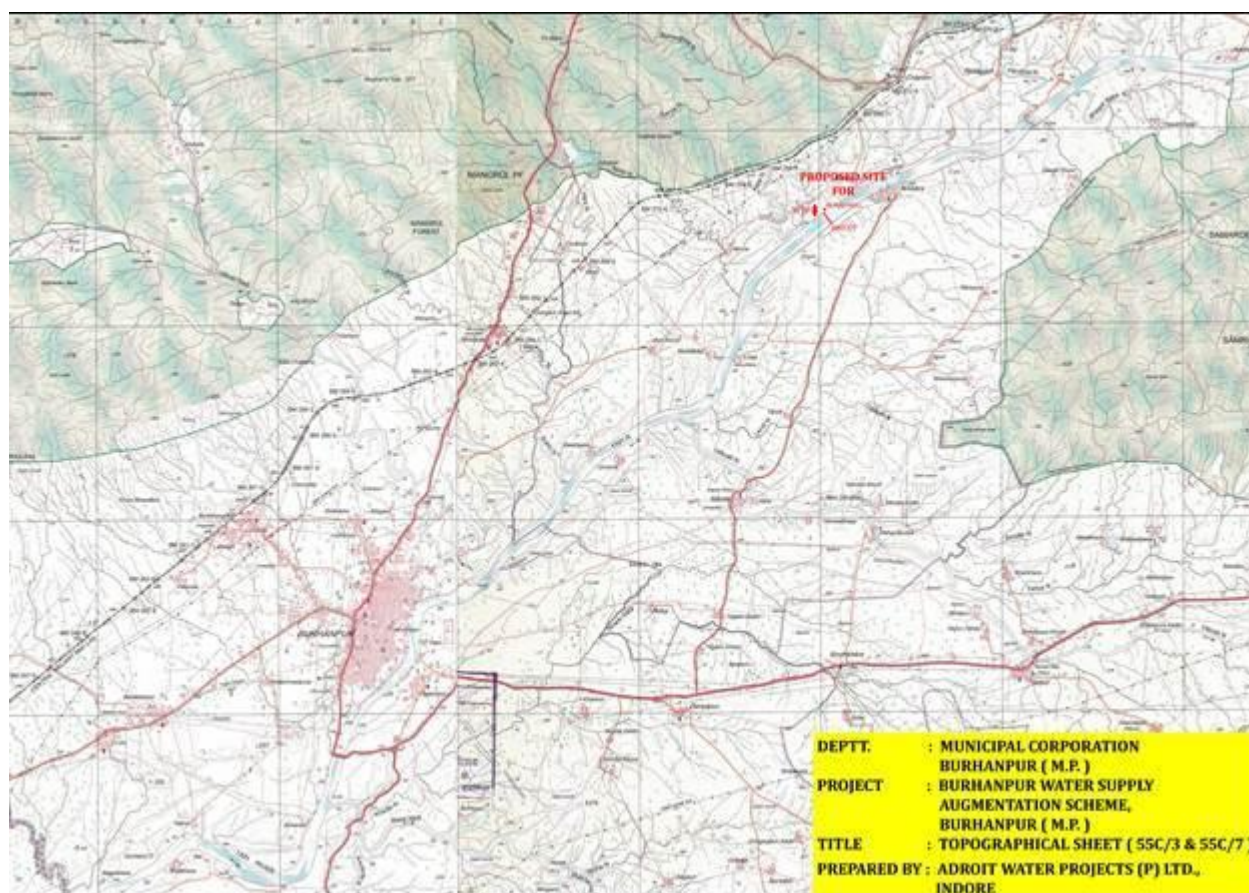
		<p>Proposed OHT Site near Jaambaksh well, Shivaji Ward, Lalbaag</p> <p>900KL/ 12m high</p> <p>Vacant site with no tree on the site and owned by GoMP. The land use around the site is mixed.</p>	
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Figure 4.1: Survey of India Toposheet showing proposed WSS components



It is evident from the toposheet that there is no forest is involved in the Burhanpur Water Supply sub project.

4.3. Baseline Environmental Profile

The baseline environmental status is important to understand the region's existing physical and biological characteristics along with cultural and social status of residing community information.

The data presented in this section is based on field surveys stakeholders interaction/consultation and secondary data collection where majority includes, Baseline generation (Water/Air/Noise quality /Soil monitoring), town census data and others. The information on the baseline environmental conditions forms the basis to analysis the probable impacts of the proposed project vis-à-vis the present background environmental quality of the core study area.

4.3.1. Physical Profile

Physiographic and Topography

PHYSICAL ENVIRONMENT

The components of physical environmental to be discussed in this section are as follows -

- (1) Topography
- (2) Meteorology
- (3) Geology and Mineralogy
- (4) Soil characteristics
- (5) Hydrology
- (6) Ambient air quality
- (7) Surface and ground water quality
- (8) Ambient noise levels

(1) Topography - Burhanpur is located at 21°18'N and 74°13'E, at an average elevation of 265 meters above M.S.L. and is situated very close to the border of Maharashtra and Madhya Pradesh. It is situated in the Valley of Tapti River amidst the Satpura hill ranges, on the flat ground on the Western bank of Tapti River.

(2) Meteorology - The town is located in the drier part of India. Average annual rainfall in the town is 909.72 mm. The monsoon season starts approximately by 10th June every year and extends up to early October. The days are quite humid. The maximum temperature recorded in the month of May is 47° C and minimum recorded in the month of December is 6° C. The average relative humidity is maximum in the month of August at an average of 79% and minimum in the month of April at an average of 27%.

(3) Geology and Minerals - Burhanpur forms a part of the Malwa region, known for its rich black cotton soil which is ideal for cotton cultivation. Owing to proximity to River Tapti, soil strata in Burhanpur largely comprises of fertile alluvium, in terms of land use,

most of the area in the district is classified as barren or agricultural land. Owing to its location along the floodplains, the recharge potential is relatively high. Despite this, the water table in the town is amongst the most critical in the region owing to the high percentage of area under agriculture and the related groundwater withdrawal; along with complete dependence of the city population on groundwater.

GEOLOGY OF BURHANPUR REGION CAN BE SUMMARIZED AS:

From 0.00 m to 0.60 m is soft soil

From 0.60 m to 2.30 m is soft yellow soil

From 2.30 m to 70.00 m is hard yellow soil

From 70.00 m onwards hard rock

Most of the Satpura is under Deccan Trap formed by various lava flows. Basalt rock formations in greenish brown and black colour have been formed by these lava flows. Deccan trap exhibits lametas from 2 lava flows Limestone and Sandstone and clay rocks. Deccan trap in the entire region can be classified as: Flows and Intrusions. Deccan trap exhibits only primary porosity and the mineral composition of these Deccan trap formations is largely even, comprising of Basalt or Dolorite.

Trap formations in these areas are used for construction of buildings and roads. Amythyst and Agore from these rocks are used as semi precious stones and bauxite is used for refining oil whereas, Aluminum is used as an ore. Laterite is also used in building construction. Since Deccan Trap only exhibits secondary porosity, the recharge potential of the Satpura is low. But since Burhanpur forms a part of the alluvium rich Tapti Floodplains and has the 'Bazada' zone, the recharge potential of the city is significantly high.

(4) Soil Characteristics - Deccan trap formations are subject to round weathering which leads to peeling off effect resulting in the formation of highly fertile black soil. During monsoons, weathering of these traps results in formation of Laterite and other minerals (Iron rich rocks are called Laterites and Alumina rich rocks are called bauxites). The structure of soil from Deccan traps is loose and hence is prone to weathering. Thus, Deccan trap soils/black soils are prone to erosion and hence, afforestation along slopes becomes imperative.

(5) Hydrology - Burhanpur is a medieval walled town on the banks of River Tapti, in East Nimar (Khandwa) district of Madhya Pradesh. Tapti River flows through the town from North East to South West and the Tapti valley is separated from the Narmada valley by a linear spur of Satpuras. The region is drained by a large number of streams descending into the Tapti. The slope of town is towards the river. Pandharol nallah, the main drain of

the city, flows through the city from North West to South East dividing it in two parts. The waste water from this nallah flows directly into the river and pollutes it.

The project pipe line network will pass few water bodies as small and big Nallas at many locations.

(6) Surface and Ground Water Quality –Base line information is available on the water quality of the project area. Water sampling and analysis is done through MP Pollution Control Board, Indore and results are enclosed in this report at annexure 4.

Water sample test report: Earlier Tapti River water sample was collected on October 2007 from the site of proposed intake well and was submitted to Sri Ram Institute for industrial research, Delhi by the Regional Center for Urban & Environmental Studies (Ministry of Urban Development Government of India) Lucknow (UP) who was the consultant for the preparation of water supply project for Burhanpur, for analyzing and preparation of test report. The test certificate received from above test house annexed with DPR for reference. The test report has shows high content of Iron i.e. 9 mg/l which may be present in water due to river course passing through the rocky strata which may contain the iron ores. Hence in the scheme prepared earlier was having provision of Iron treatment along with other treatments.

Again on 17/08/2013, six water samples from Tapti River from different locations were collected for testing the iron strength in water. Location and iron found in the water sample is tabulated below for reference:

Sl. No.	Location of Sampling for Iron as 'Fe' mg/l	Result Fe mg/l
1.	Anicut 0.00 Km	3.78
2.	Gram Basad 1.00 Km	4.70
3.	Gram Bori Khurd 3.0Km	5.11
4.	Gram Nasirabad 6.00 Km	3.86
5.	Gram Nimna 9.00 Km	3.92
6.	Gram Borsal 12.00 Km	3.52

Latest test conducted on 9/11/2015 from MPPCB, Indore on the sample collected from source i.e. Tapti River bed, confirms the iron content in the range of 3 to 3.5 mg/l. (Report attached in the annexure).

Considering the worst condition i.e. 9.0 mg/l iron content, in the process design iron removal unit has been proposed.

Bacterial test of water sample was done in September 2008 test result shows E-coli in the range of 2 which is negligible however post chlorination is provided in DPR.

- (8) Ambient Noise Levels – Please explain general noise levels and the land use of the town.

4.4. Socio economic profile of Burhanpur

The population of Burhanpur is approximately 210886 people (2011 census). Of the total population of the town the male are 108187 (51.30%) and female are 102699 (48.69%). Scheduled Caste population comprises 14440 (6.85%) whereas tribal population constitutes a mere 2179 (1.03%) of the total population. Burhanpur town has average literacy rates of 147056 (69.73%) with male and female of 53.94% and 46.06% respectively.

Burhanpur Municipal Area has been divided into 48 wards for development and administrative purposes. The total households of Burhanpur city are 38470. The density distribution shown in table below:

Density Distribution of Burhanpur town

As per Census of India, 2001 Burhanpur has a total of 48 wards and spreads over an area of 1267 ha. The area of Municipal Corporation of Burhanpur has not increased since 1981, but the total number of wards has increased from 41 to 48. The average density of the town was 152.9 persons per hectare (2001). This has increased to 169.6 persons per hectares based on 2010/11 Census estimates.

Table.4.2 : Population and Density Distribution

Sr. No.	Residential Density Distribution	Total Number of Wards	Ward Numbers
1	2000-3000	5	20,25, 34,47,48,2
2	3500 and 5000 persons.	38	5,12,14,,24,27,28,31,32,33,35,36,37,38,39,41, 42,43,44,45,46
3			,4,6,7,9,10,11,13,15,16,18,19,20,21,23,24,26, 27,28,29,30
4	5000 and 7000.	5	3, 8, 17, 22 and 40
5	>7000 persons,	2	2,13

Ward-wise population density of Burhanpur is presented in figure 3.4. The average density of the city is 169.69 persons per hectare, which is slightly more than prescribed norm of 100 – 150 ppha by the UDPFI guidelines for medium towns in plain areas. The wards with highest density of 900 pph and above are ward no.14, 23, 25, 31, 30 and 33. Also, the wards with the lowest density i.e. below 100 ppha are ward no. 47,41,42 and 48.

Land use pattern

Table. 4.3 Land use pattern (Proposed Land use – Burhanpur city, 2021)

S.No.	Land use	Proposed 2005		Existing 2006		Proposed 2021	
		Area (Ha)	%	Area (Ha)	% w.r.t.	Area (Ha)	% w.r.t.
1	Residential	846	37.60	530	51.40	1202	40.07
2	Commercial	90	4.00	74	7.18	197	6.57
3	Industrial	205	9.11	111	10.77	360	12.00
4	Public/semi public	96	4.27	40	3.88	302	10.07
5	Recreational	76	3.38	13	1.26	120	4.00
6	Mixed use	174	7.73	-	-	174	5.80
7	Reserved Agricultural	14	0.62	-	-	-	-
8	Transport & communication	323	14.36	245	23.76	600	20.00
9	Facilities	426	18.93	18	1.75	45	1.50

Source: Burhanpur Draft Master Plan, 2021

As per Burhanpur Master Plan 2005 (MP2005), the proposed land under residential use for the year 2005 was 846 ha, which was 37.6% of the total planning area 2005. But out of 846 ha, only 530ha could be developed by 2006 accounting for 23.56% of the total city planning area 2005. In case of commercial, it was proposed, that 4% (90ha) be developed under commercial use but by 2006 only 3.29% (74ha) could be developed. Similarly for industrial use 9.11% (205ha) was proposed to be developed but 4.93% (111 ha) was developed.



Sex Ratio

With regards to Sex Ratio in Burhanpur, it stood at 951 per 1000 male compared to 2001 census figure of 944, which is equal to Burhanpur sub-district average of 942 but higher than the state sex ratio of 920. The average national sex ratio in India is 940 as per latest reports of Census 2011 Directorate. In 2011 census, child sex ratio is 924 girls per 1000 boys compared to figure of 934 girls per 1000 boys of 2001 census data.

Social Composition

Social Composition of town is representing the percentage of Scheduled Caste and Scheduled Tribe out of the total population. As per census 2001, 7.6% and 9.1% of the total population are SC and ST respectively, which is also represented in Table.3-7

Table Error! No text of specified style in document..4: Social Composition in Burhanpur Town

Social Composition	Population	Male	Female	Percentage of population
SC	14440	7375	7065	6.85
ST	2179	1094	1085	1.03
Others	194267	185798	186117	92.11
Total Population of Town	210886			100

(Source: Census, 2011)

Literacy Rate

The literacy rate of Burhanpur is 63.12% (2001) which is comparable to sub-district literacy rate of 64.6 per cent, state literacy rate of 64.1% and national average of 64.8%. This shows that Burhanpur is an educationally forward district in the state. Male literacy rate is 68.8% and female literacy rate is 57.07%, pointing towards the high degree of gender discrimination in the area, which reflects substantial gender gap in work force participation ratio.

Table 4.5 Literacy level of Burhanpur town

Year	Total Male	Total Female	Total Literate	Total literate (% share of the total Population)	Average Growth Rate (in %)	Female Literacy Rate (in %)	Male Literacy Rate (in %)	Ratio Of Female To Male
2001	68657	53632	122289	63.13%	NA	57.07%	68.83%	0.78
2011	82945	67054	149999	71.13%	2.30%	65.32%	76.64%	0.81

Religion

Table 4.6. Religious composition

Population	Hindu (%)	Muslim (%)	Christianity (%)	Sikh (%)	Buddhist (%)	Jainism (%)	others (%)	not stated (%)
210886	45.81	50.53	0.17	0.15	2.67	0.60	0.03	0.04

(Source: Census, 2011)

Occupational structure

Occupational structure of the populace is the primary indicator of nature of economy and economic base of the town. Occupational structure of the Municipal area has been shown in. Workforce participation rate of the Burhanpur town is 32. The total workforce of Burhanpur town is 32% out of this 82.07% are male and only 17.93% are of female workers. The marginal workers in Burhanpur town are 91.38% out of total work force, the male marginal workers are 83.17% and female are 16.83%.

Table 4.7 : Occupational Distribution of Workers in Burhanpur

Area	Total Population	Total Workers			WFPR
		Main Workers	Marginal Workers	Total Workers	
Municipal Area	210886	69394 (32.91%)	65060	134454 (63.76%)	32

Table 4.8(A): Occupational Structure (Main Workers) of Burhanpur (2011)

Area	Total Population	Total Workers	Total Main Worker				
			% Workers	Male Workers	% Male worker	Female Workers	% female worker
Municipal Area	210886	69394	32.91	57457	82.79	11937	17.20

(Source: Census 2011)

Table 4.8 (B): Occupational Structure (Marginal Workers) of Burhanpur (2011)

Area	Total Population	Total Marginal Workers	Total Marginal workers				
			% Marginal Workers	Male Marginal Workers	% Male Marginal worker	Female Marginal Workers	% female Marginal worker
Municipal Area	210886	65060	93.75	55051	84.61	10009	15.38

(Source: Census 2011)

It can be observed from **Table 4.7**, 32.91% of the working population are main workers having full time employment showing less employment level in town. Out of the total main workers 17.20% are female workers.

Table 4.9: Male-Female Workers in Burhanpur (2011)

Area	Main Workers			Non Workers(district)		
	Male	Female	Total	Male	Female	Total
Municipal Area	57457 (82.79%)	11937 (17.20%)	69394 (100%)	434867 (45.63%)	544060 (59.14%)	978927 (52.26%)

(Source: Census 2011)

Category of main workers in any area is an actual representative of the important economic activities of the town and thus the same has been shown in **Table 4.9** to understand the economic base of the town. The non workers population of district is 52.26%.

Table 4.10: Category of Main Workers in Burhanpur (2001)

Type of	Cultivator	Agricultural Labourers	Household Industry	Other	Total
Main Workers	140	109	276	48666	53928
Marginal	42	612	471	249	3616
Total Workers	144	170	323	51157	57544

(Source: Census 2001)

It can be observed that 3149 of the main workers are engaged in primary activities in which are mainly agricultural labourers and 3238 are engaged in household industries. It is evident from the **Table 4.10** that majority of the main workers are categorised into 'Other Workers' category which includes other than agricultural and household industry workers. 'Other Workers' includes workers engaged mainly in manufacturing industries, trade and commerce, construction activities, transport and communication and other service activities. Thus majority of population is engaged in secondary and tertiary sector activities in Burhanpur town.

Industrial activity

Burhanpur was a well developed industrial town in earlier times. It was internationally famous for its fine cloth manufacturing, Gold-wire drawing and other allied industries and crafts. Other than this, there were industries involved in making gold and silver jewelry. Burhanpur was famous for Copper, bronze and iron utensils as well as making of glass from a special stone from the river. In Jainabad, near Burhanpur, handmade paper and pan masala industries were also famous.

Table 4.11 Production and employment in loom industry from 2000-01 to 2004-05 for Burhanpur District

S.No.	Description (District level)	2000-01	2001-02	2002-03	2003-04	2004-05
1	Total power looms	35640	42257	42131	37902	38015
2	Functional handlooms	30289	31849	31019	33254	34250
3	Cooperative looms	6090	6357	3858	7457	5539
4	Production(in million meters)	131.59	197.34	89.05	77.10	122
5	Employment	81529	76372	60274	81002	85635

Source: District Industries Department, Burhanpur

Note: Most of the looms in the district are located within the walled city.

Agricultural activities

Burhanpur has a high potential for agricultural development. The average rainfall in the district is 980.75mm. Total area under agricultural is 1193.17 sqkm of which 1028.98 sqkm (86%) is under Kharif and 164.19 sqkm (14%) under Rabi crop. A total of 459.16 sqkm (38%) is irrigated.

Major crops in the district are cotton, banana, sugarcane, wheat, chilly etc. Major occupation of district is agriculture.

Housing Gaps

Table-4.12. Houses

Category	Assumptions in Master Plan based on Census 2001	Census 2001
Number of Households	26616	30528
Household size	7.3	6.3

As per Master Plan 2021, there is a shortage of 2431 houses in Burhanpur for the year 2001. By including requirements to relocate *Gandi Bastis* and to provide facilities in *Gandi Basti*, which account for 80% relocation, the total housing demand becomes 13,546 houses. Draft Master Plan Burhanpur has made Projections for housing demand till year 2021; by taking into consideration that population in year 2021 would be 3.00 lakh with average family size of 5.0 people per household. It is assumed that every year 1% of total houses become unliveable and reconstruction of such houses has also been taken into consideration while projecting housing demand.

Table 4.13: Housing Projection as per Draft Master Plan, 2021

S.No	Description	Housing Demand		
		2001	2011	2021
1	2	3	4	5
1	Population in lakhs	1.93	2.50	3.00
2	Additional population in lakhs	---	0.56	0.50
3	Average family size	7.30	5.00	5.00
4	Additional families	---	11200	10000
5	Housing demand as per year 2011(85%) and year 2021(90%)	---	9520	9000
6	Gaps including housing demand of year 2001	+13546	23066	32066
7	Reconstruction of houses @ 1%	---	2419	4838
	Total	13546	25485	36904

Source: Draft Master Plan Burhanpur, 2021

Commercial land use

As per Draft Master Plan Burhanpur 2021, 197.0 Hectare of area is proposed under commercial landuse. This is 6.57% of the total city planning area, and this also includes 74.0 Hectare of existing commercial area.

Table 4.14: Proposed commercial area in Burhanpur

S.No	Description	Area in Hectare
1	Cold storage and Godown	5.0
2	Mandis	
	a. Grains/ cotton Mandi	20.0
	b. Kadvi and Patti Bazar	2.0
	c. Vegetable and fruit Mandi	2.0
	d. Retail market	2
3	Wholesale and special markets	
	a) Wholesale markets	4.0
	b) Building construction material	8.0
	c) Wood market	8.0
	d) Junk market	2
4	Transport Nagar/Mechanic Nagar	3
5	Investment unit level	20.0
6	Vrittkhand Level	10.0
7	Upvrittkhand Level	5.0
8	Present area	74.0
	Total	197.0

Source: Draft Master Plan Burhanpur, 2021

Unorganised Commercial Streets

Burhanpur town has retail and wholesale markets for special agricultural tools, agricultural products and related manufacturing products. There are wholesale markets for vegetables, hardware, medicines, agricultural products and agro based industrial products, cotton, Loom clothes from which town and its surrounding areas fulfil their daily needs. In addition to above

hardware, iron, construction material, auto parts, and agricultural tools are the major items of retail and wholesale market of Burhanpur. Major retail and wholesale products and prominent location of their markets are represented in **Table 4.15**. Due to lack of space for commercial activities, shops on footpaths and stalls on road sides have established creating traffic congestion on roads. These informal shops are concentrated on Bhusawal road, Khandwa road, near bus stop etc.

Table 4.15: Various Types of Retail and Wholesale Markets

S. No.	Type of Commercial Activities
1	Cotton, Loom materials,
2	Hardware, construction material, auto parts and agricultural equipments
3	Cycle parts and Repair shop
4	Cloth, Readymade Garments Shops, Grossery Shop
5	Plastic, Glass, China Clay potteries
6	Gold & Silver Jewellery
7	Commercial Offices
8	Vegetable and Fruit market
9	Books and Stationary
10	Timber market, wooden furniture and wood
11	Utensils Market
12	Electrical equipments
13	Medical Stores
14	Truck Body Making
15	Truck Repairing/Mechanic Nagar

(Source: Master Plan 2011)

Below Poverty Line population and Identified Slums of Burhanpur

Slums

Though all the 48 wards in the city have been declared as slums, based on survey of the city, it was found that declaring the entire ward as slum area is unjustified. There are slum pockets in each ward, the concentration of which is higher in some wards, but apart from this the housing and infrastructure conditions in the remaining portion of the ward are reasonable. Based on the observations so far, it has been found that 1. Lalbagh, 2. Chinchala, 3. Tapti mill area, 4. Malviya ward, 5. Ambedkar Nagar and 6. Nagjhiri are some of the areas with major slum concentrations.

BPL Population

As per preliminary survey in 2010/11, the city has 33,645 BPL ration card holders including 3040 Antoday card holders. The BPL card survey conducted in 2006/07 showed that the city had 28,463 BPL card holders including 3034 Antoday card holders. This implies that the number of BPL card holders in the city has increased by 5182 HHs in 3 years whereas, the total number of HHs in the

city has increased by 8042 HHs in 10 years (30528 HHs in 2001 to 38570 HHs in 2010/11); which is very unlikely. Considering that the city has 33,645 BPL families, at a HH size of 5.57 the city should have 1.87 lakh persons below poverty line which accounts for nearly 87% of the city population. But based on knowledge of the city, this cannot be considered accurate

Table 4.16. Below poverty line population

District	Below poverty Line				
	Population	Population below poverty line	% of Population below poverty line	Number of Households below poverty line (based on Avg. HH size)	Number of Households below poverty line (based on Avg. HHD size of BPL hhd)
Burhanpur (West Nimar)	210886	1.87	87	38570	33645

Source: State planning commission

Table 4.17: Ward Wise distribution of BPL and Antoday CARD HOLDER Population.

Ward number	BPL families (as per 2010/11 survey)	Antoday card (as per 2006/07 survey)	Ward number	BPL families (as per 2010/11 survey)	Antoday card (as per 2006/07)
1	604	5	2	534	47
2	1406	7	2	1117	65
3	976	7	2	727	70
4	477	4	2	401	45
5	327	5	2	753	62
6	255	3	3	596	56
7	446	7	3	707	62
8	1453	12	3	565	71
9	932	6	3	611	39
1	965	5	3	611	60
1	453	4	3	303	46
1	421	106	3	682	82
1	1035	9	3	470	72
1	806	5	3	868	64
1	967	7	3	1101	80
1	581	6	4	615	72
1	1274	9	4	455	63
1	751	8	4	603	84
1	583	6	4	343	40
2	435	6	4	770	56
2	467	4	4	641	53
2	900	5		837	
2		3			52
2		4	4		44

Source: Burhanpur Nagar Palik Nigam

SOCIAL SECURITY SCHEMES

There are many ongoing schemes for the development of rural areas of Burhanpur undertaken by the Zila Panchayat for example NREGS (National Rural Employment Guarantee Scheme), IAY (Indira Aawas Yojna), SJSRY (Swarna Jayanti Shahri Swarozgar Yojna, etc.). For the development of infrastructure in the urban area, BRGF (Backward Region Grant Fund) scheme is ongoing. An amount of 12.62 Crore had been sanctioned for 2009/10 for Khandwa and Burhanpur under

BRGF. Other than this, there are many other schemes related to social security, widow pension, handicapped pension, old age pension, girl marriage schemes and labor security schemes, etc. which are being implemented in the city through Nagar Palik Nigam but because of lack of awareness, most of the poor are not able to reap the benefits of these schemes. These schemes are as follows:.

Table 4.18 Schemes operated through BMC

S.No.	Name of Scheme
1	Indira Gandhi old age pension
2	Social Security Pension
3	Indira Gandhi Widow pension
4	Indira Gandhi Handicapped Pension
5	National Family help Scheme
6	Chief-Minister's girl marriage scheme
7	Common person insurance scheme
8	Chief Minister's urban household/ working woman
9	Swarn Jayanti Shahari Rozgaar Yojna
10	Multi Disability/ multi handicapped Pension scheme
11	Disability instrument help scheme
12	Chief minister's hand cart & cycle rickshaw scheme

Apart from Zila Panchayat, DUDA (District Urban Development Agency) also undertakes social security

Health

Basic health indicators

The basic health indicators for the city are listed below:

IMR = 40/1000 approx.

Birth rate = 28/1000 approx

MMR = 300/100000 approx

Disease pattern

The most prevalent disease in the city is Chronic Respiratory Disease which is misinterpreted as TB. Apart from this, AIDS, Malaria and other water borne diseases are also common. Data on these is not available.

Table 4.19 Details on Health facilities

Details on number and quality of health facilities in the city	One, District Hospital in Burhanpur (Nehru Hospital)
	OPD, IPD, Emergency Attendant, Major and minor operation facilities

Health indicators (infant Mortality rate etc.)	Health indicators: IMR = 40/1000 approx. Birth rate = 28/1000 approx MMR = 300/100000 approx		
Shortage of health facilities	Shortage of staff		
	Lack of place (space in hospital)		
	C.T. Scan		
	I.C.U.		
	Operation theatre for Orthopedics & trauma centre		
Proposal for up gradation	Separate 300 bed District Hospital proposed for construction at Raver		
	Fulfillment of vacant posts in different facilities		
Number of Doctors	Total number of available doctors in Distt. Hospital		
	Sanctioned	Working	Vacant
	40	16	24

Source: Health department Burhanpur

CHAPTER 5

ASSESSMENT OF ANTICIPATED IMPACTS

5.1 Introduction

This Chapter identifies and discusses both positive and negative impacts associated with the proposed project and their mitigation measures. The anticipated impacts and corresponding mitigation measures are discussed in Phases namely: design, construction, operation and decommissioning Phases. This chapter focuses on the prediction and assessment of impacts on the various ES components due to the project activities. Based on the magnitude and duration of the project activities, the nature, duration and extent of impact are assessed. Minor project impacts have also been identified and basis for their insignificance has been provided. Wherever relevant, the EMP/SMP also addresses the minor impacts and provides environmental and social mitigation / environmental enhancement measures.

5.2. Environmental Impact

In the proposed WSS, direct and/or indirect impacts are generated which are rather short-term as they are felt and manifested during the actual performance of the construction activities. It is expected that impacts from these types of activities will cease once the contractor completes the project and demobilizes from the site. Following table shows the influence area of the proposed sub project components:-

Table 5.1: Influence area details of proposed Burhanpur WSS

S.No.	Components	Influence Area	Description of Construction activity and impacts
1.	Water Intake facilities- Anicut of 4.7 m height and 4m wide R.C.C. intake well of 9.0 m diameter and 19 m height.	1 km upstream and 1km downstream of river	<ul style="list-style-type: none"> • Influence area of Intake facilities covers 1km u/s and 1km d/s length of Tapti River, but there is no noticeable aquatic life and flora & fauna present in the influence area. There is no fishing or any water related activity in this area. • There are no major water abstraction points or dams on the downstream side on anicut site. River water quality is good, and there are no notable pollution sources in the proximity. The sewage through Nallah is at the downstream side of the town and hence, it will not have any impact on the water quality. • Water Intake facilities will involve construction within the water body. An enclosed area (about 10 m dia) will be created at the selected site using temporary barriers like sand bags or sheet piles and the water will be pumped out to make the area dry for construction. Once this is

			<p>created, the rest of the construction will follow the general construction procedures to create a RCC well of size 9 m diameter. Once the work is over, the temporary barriers will be removed, hence construction activity have temporary and moderate impacts.</p> <ul style="list-style-type: none"> • Construction of anicut and intake well in the river may lead degradation of water quality due to increase in turbidity and chemical contamination from fuels and lubricant used in construction work. Increase in silt content and water turbidity, chemical quality can affect the aquatic life, silting/chocking of spill ways/canals etc., though there are no notable aquatic life, to ensure that any negative impacts are mitigation, the contractor will be required to take mitigation measures as elaborated in section 5.2.
3.	WTP- Construction of 50 MLD capacity Rapid Gravity Filter based Treatment Plant is proposed at a total land area of 3.44 ha.	200 m periphery around the WTP site	<ul style="list-style-type: none"> • Influence area of WTP site covers vacant government land and agricultural land, hence no sensitive impacts in the WTP influence area. • WTP construction works will be confined to sites, and construction will include general activities like excavation for foundation, construction of foundations, columns, walls and roof in cement concrete and masonry, and fixing of mechanical and electrical fixtures, etc. these are not general construction activities, but are are special activities. How is river pollution is controlled during construction and labor camps, etc.
4.	CWRM- from WTP to OHTs (150mm to 800mm)	1.5 m each side - Along the pipe line laying	<ul style="list-style-type: none"> • In one side of Influence area, BT road is present and on other side vacant land is present, so there is no noticeable impacts in the influence area. • Civil works in the CWRM include linear excavation for laying pipes along the roads, placing pipes in the trench and refilling with the excavated soil. The trenches will be of maximum 1.2 m wide and 1.5 m depth.
5.	OHT- 8 overhead tanks each are proposed	50 m dia	<ul style="list-style-type: none"> • All the overhead tanks are proposed on government vacant land, hence there is no sensitive area comes under influence area of OHTs sites.
6.	Distribution Network-	The whole town is	<ul style="list-style-type: none"> • Construction activity: Earth work excavation will be undertaken by machine (backhoe

	Total length of proposed Distribution pipe = 164099 m or 164.099 Km.	influenced by this activity.	<p>excavator) and include danger lighting and using sight rails and barricades at every 100 m., while pipe laying works will include laying pipes at required gradient, fixing collars, elbows, tees, bends and other fittings including conveying the material to work spot and testing for water tightness. Sufficient care will be taken while laying so that existing utilities and cables are not damaged and pipes are not thrown into the trenches or dragged, but carefully laid in the trenches. As trenches are a maximum of 1.2 m, there is no risk of collapse of trenches or risk to surrounding buildings. Once they are laid, pipes will be joined as per specification and then tested for any cracks or leakages. The minimum working hours will be 8 hours daily, the total duration of each stag depends on the soil condition and other local features. About 85% of the excavated soil will be used for refilling the trench after placing the pipe and therefore residual soil after pipe laying and refilling is not significant. This soil shall be used for construction of WTP in ground leveling.</p> <ul style="list-style-type: none"> • Excavation along the roads, hauling of construction materials and operation of equipment on-site may cause traffic congestions. Narrow roads in the core/old town area of Burhanpur are 3m wide. However, most of the roads are used by pedestrians and two wheelers, and four wheelers vehicles are very limited. Potential impact is negative but short term and reversible by mitigation measures.
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5.2.1. Design Phase Impacts

Technical design of the (i) intake facilities (ii) water treatment plant; (iii) raw water and clear water mains, (iv) storage reservoirs, and (v) distribution network, connections, flow meters, etc., follows the relevant national planning and design guidelines, focusing on providing a robust system which is easy to operate, sustainable, efficient and economically viable. Besides, the project also included the following environmental considerations:

- (i) Discontinuation of current unsustainable groundwater source and creating a new water supply system based on nearest surface water sources
- (ii) Recovering backwash water from treatment process
- (iii) Treatment and reuse of sludge from treatment process
- (iv) Minimizing water losses from pipelines by perfect jointing and alignments using

- appropriate techniques (HDPE pipes up to 150 mm dia joined by electro fusion couplers using on-site electro fusion welding, and all higher dia pipes by on site butt welding)
- (v) Designing the entire system to maintain optimal flow and terminal pressure, and optimising the overall energy usage
 - (vi) Reducing the incidence of water borne diseases by providing 100% population including urban poor with potable water supplies
 - (vii) Improve water use efficiency and reduce water wastage at household level by recording and monitoring the water usage, and charging the consumers as per usage; due consideration to urban poor
 - (viii) Minimize unaccounted for water (UFW) losses using district metered area approach with flow meter and pressure logging arrangements to identify and rectify the leaks, and unauthorized connections
 - (ix) Using low-noise and energy efficient pumping systems

5.2.2. Construction Phase Impacts

1. Positive Impacts

(i). Employment opportunities: With the construction of the proposed Project, there will be employment opportunities for both skilled and unskilled workers. This will be beneficial both from the economic and social point of view. Economically, it means abundant unskilled labour will be used in production. Several workers including casual labourers, plumbers and engineers are expected to work on the site for a period of time. Semi-skilled, unskilled and formal employees are expected to obtain gainful employment during the period of construction. With labour intensive construction technologies, the project will provide employment for youths and provide support to the GoMP initiatives on creation of jobs.

(ii). Creation of a market for construction: The Project will require materials, some of which will be sourced locally and some internationally. These include plant (pump sets, switch gear, instrumentation) pipes, valves, cement, sand and chemicals. This will provide a ready market for suppliers in and outside the project area.

1. Negative impacts during construction

The following negative impacts are associated with the construction of the proposed Project:

(i). Interference with the physical setting: The proposed project could result into the following negative impacts to the physical setting:

- Changes in the local topography during site grading, development of treatment systems and laying of pipes among others;
- Blockage of natural drainage system at valley crossings;
- Excavation for creation of access routes and related structures; and

Mitigation:

- The design shall in no way propose to implement developments that will hinder drainage, change the topography or introduce physical changes that are not in harmony with the physical setting of the Project area;
- The structures such as WTP and OHT, to be developed should be aesthetically acceptable to blend in with the surrounding. These structures should not form or end up being used by the resident population as access or bridges;
- The proponent shall as much as possible complete the works in such a way that natural aesthetics shall be retained at the locations;
- Restoration shall be undertaken to ensure that the original setting is as much as possible retained.

(ii). Interruption of existing installations on the pipeline route: The various installations will cross, move in or move along installations among them:

- Property accesses;
- Roads
- Underground utilities e.g. electricity and telephone links; and
- Fences and structures.

These services are critical and have implications with spillover effects on the social and economic performance.

Mitigation:

- Formal request for permission to cross, break in and build the water pipeline should be sought from affected property owners and the relevant institutions such as MPEB;
- Formal engagement should be done with key land and other property owners neighbouring the pipeline;
- Ensure dissemination of relevant information to each of the affected parties;
- A work plan with clear responsibilities for each party should be developed to ensure smooth execution of the construction.

(iii). Noise generation: Construction of the proposed Project will most likely result in noise emissions as a result of the machines that will be used e.g. excavation equipment and construction vehicles delivering materials to site. Significance of noise impacts depends on whether the Project would increase noise levels above the existing ambient levels by introducing new sources of noise. Noise impacts would be considered significant if the Project would result in the following:

- Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to, or generation of, excessive ground-borne vibration or ground-borne noise levels;
- A substantial permanent increase in ambient noise levels (more than 3 dBA) in the project vicinity above levels existing before the project; and
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing before the project.
- The Proponent through the Contractor shall put in place several measures that will mitigate noise pollution arising during the construction phase.

Mitigation

- Install portable barriers to shield compressors and other small stationary equipment where necessary;
- Use of quiet equipment (i.e. equipment designed with noise control elements);
- Limit pickup trucks and other small equipment to a minimum idling time and observe a common-sense approach to vehicle use, and encourage workers to shut off vehicle engines whenever possible;
- Provision of appropriate personnel protective equipment;
- Construct only during the day; and
- Consider labour based construction methodologies.

(vi). Dust emissions: Dust will be emitted during excavation and related earthworks. Air-borne particulate matter pollution is likely to occur during the route clearance and excavation. This is likely to affect site workers, in extreme situations leading to respiratory problems.

Mitigation:

- Minimizing the number of motorised vehicles on use;
- Provide scour checks on over-15% slopes or when working in loose soils;
- Use predetermined tracks;
- Avoiding machinery working in seasonally marshy areas, pans and floodplains;
- Wet all active construction areas as and when necessary to reduce dust;
- Undertake staff training and allocate roles to trained/responsible staff members.

(v). Disposal of spoil: Project construction will involve earthworks and excavation. This will result in the generation of some spoil materials. But there will be little carting away of excavated material. The soils may affect the surrounding environment if not adequately disposed.

Mitigation:

- Maximize the re-use of excavated materials in the works as far as feasible to ensure that no permanent spoil dumps are created;
- Properly dispose off the spoil in the identified by the design team and approved by the confirmed land owners;
- Care should be taken to avoid spoil location in land that could otherwise be used for productive purposes.

(vi). Solid waste generation: Solid wastes generated from the construction activities are excess excavated earth (spoils), discarded construction materials, cement bags, wood, steel, oils, fuels and other similar items. Domestic solid wastes may also be generated from the workers' camp. Improper waste management could cause odor and vermin problems, pollution and flow obstruction of nearby watercourses and could negatively impact the landscape.

Mitigation:

- Construction waste should be recycled or reused as much as possible to ensure that materials that would otherwise be disposed off as waste are diverted for productive uses;

- The Proponent shall put in place measures to ensure that construction materials requirements are carefully budgeted and to ensure that the amount of construction materials left on site after construction is kept minimal;
- Minimization of solid waste during construction of the proposed Project through use of durable, long-lasting materials that will not need to be replaced often, thereby reducing the amount of construction waste generated over time;
- Skips and bins should be strategically placed within the campsite and construction site, they should also be adequately designed and covered to prevent access by vermin and minimize odour. They should also be emptied regularly;
- Measures to ensure that waste materials from the Project are disposed at suitable sites will be taken. These will include engaging only reputable truckers and conducting appropriate spot checks to verify that disposal are done in accordance with the requirements of MSW rules;

(vii) Vegetation loss: The construction of the proposed project will involve clearing of vegetation cover especially in proximity to proposed developments. During construction, a small amount of vegetation will be cleared to give way for the proposed water pipelines and water treatment plants. Riverine vegetation will also be cleared around the Tapti river. Not only may vegetation be lost, but also faunal habitats may also be lost or at least partly destroyed. In addition, the removal of areas of vegetation could mean that the same degree of interception will no longer occur, and consequently increased run-off might be expected. However, the significance of the vegetation loss during the site clearance is minimal.

Mitigation:

- The Contractor will ensure proper demarcation of the Project area to be affected by the construction works;
- Strict control of construction vehicles to ensure that they operate only within the area to be disturbed by access routes and other works;
- Retention of trees and shrubs, where possible on the potential sites for screening of the visual impact;
- Where the proposed route requires the removal of any vegetation, care will be taken to minimize the destruction or damage of trees.
- Replanting of destroyed trees in cleared areas where works are complete.

(viii). Workers accidents and hazards: Construction workers are likely to have injuries and hazards as the construction works unavoidably expose workers to occupational health and safety risks. The workers are also likely to be exposed to risk of accidents and injuries resulting from accidental falls and injuries from hand tools and construction equipment.

Mitigation:

- To reduce the workers accidents and hazards the Proponent will develop and commit the Contractors to Site Occupational Health and Safety rules
- All construction workers should be advised of the dangers associated with construction work;
- Workers should be provided with suitable personal protective equipment (PPE);
- Provision of adequate sanitary facilities to workers;

- Train all workers on Safety Health and Environment (SHE) with an aim of improving awareness;
- Where construction activities interfere with the movement of traffic, the site should be signed and controlled by trained flagmen/flag women and lit by night.

5.2.3. Operation Phase Impacts

1. Positive impacts during operation: Just as in the construction phase, there are positive impacts associated with the operation phase of the proposed Project. These positive impacts are discussed below.

(i). Improved water quality and quantity: Improved water quality will in turn reduce exposure to water borne diseases to the consumers. General hygiene in the served area will improve through use of acceptable water quality. Markets and communities within Burhanpur town will greatly benefit from the project.

(ii). Reduced exposure to health risks and improved nutrition: Improved water quality for domestic consumption reduces the risk to the health of the consumers and dependants of water resources that could translate into financial saving through less related expenditures.

(iii). Improved performance and living standards within the project area: Water provision is one of the goals for 2018. It is therefore envisaged that the continued existence of the project area as a sustainable settlement is reliant of the supply clean potable water for each and every person. This will immensely contribute to the property value, land value and aesthetic value of the Project area while ensuring that the population in this area remains healthy and productive. Accesses to water will in the long term result in improved income levels and health of the people, this consequently leads to poverty reduction. Reduced distances travelled and time used to collect water is then put to economic activities.

2. Negative impacts during operation phase: The following negative impacts are associated with the proposed Burhanpur Water Supply Scheme.

(i). Reduced downstream flows: The construction of water treatment plants at the bank of Tapi river may lead to increased abstraction of water from River. The downstream flow is likely to be affected as a result of over abstraction. However, this impact is expected to be minimal because no additional abstraction will be done at the existing intake sites.

Mitigation:

- There should be due adherence to the safest maximum abstractable water quantities of throughout the project life;
- Adhere to WRD water use permits;
- The Proponent shall monitor the hydrology to determine whether there is reduced downstream flow.

(ii). Increased domestic wastewater generation: The proposed Project will result in increased wastewater generation through the introduction of more water in the system. This may lead pollution of the environment. The urban region in Burhanpur do not have proper conventional sewerage infrastructure. Residents rely on pit latrines and septic tanks for sewer disposal and gray water through surface drain to farmland for irrigation and goes finally in river Tapi.

Mitigation

- Plans should be put in place by the UADD/MPUDC on how to address sewer and waste water especially in fast growing towns like Burhanpur.

(iii). Sludge management: One of the main by-products resulting from the treatment plant activities is sludge. This sludge will be kept on site temporarily before disposal or other uses such as use as fertilizer. The sludge, if not properly managed can have impacts on water quality, health of people around the plant, aquatic life and the natural habitat

2. Social impacts

The study has predicted and evaluated anticipated impacts using acceptable standard methods of impact prediction and evaluation. The significance of impacts is subjective, and expert judgments were used. Public participation and consultation with a wide sector of the community were conducted to reduce uncertainty. Table 5-1 below summarizes the anticipated environmental problems observed which may be created by the project.

Table 5-2: Summary of social impacts

social impact	Impact/ No impact	Direct / indirect	Temporary /permanent	Major / Minor	Occurrence	
					Design and Construction	Operation
loss of dwelling land and structure	No impact	indirect	Temporary	minor	Y	
loss of agricultural land and structure	No impact	indirect	Temporary	minor	Y	
loss of commercial/ industrial/ Institutional land and structure	No impact	-	-	-	-	
loss of access to common resources and or facilities	impact	direct	temporary	minor/ major	Y	
losses to host communities	No impact	-	-	-	-	
impact on indigenous people	No impact	indirect	temporary	minor	Y	Y
any induced development	No impact	-	-	-	-	
impact on CoI (linear corridor)	impact	direct	temporary/ permanent	minor	Y	Y
social	Positive/	Direct /	Temporary	Major /	Occurrence	

impact	negative	indirect	/permanent	Minor	Design and Construction	Operation
Employment opportunities	Positive	Direct/ Indirect	Permanent/ Temporary	Major	Y	Y
Creation of awareness	Positive	Direct	Permanent	Minor	Y	
Creation of markets for construction material	Positive	Direct	Permanent	Minor	Y	
Increased water quality and	Positive	Direct	Permanent	Major	-	Y
Improved performance and living standards of the residents within the project area	Positive	Direct	Permanent	Major	-	Y
Creation of Wealth	Positive	Direct	Permanent	Minor	-	Y
Reduced exposure to health risks	Positive	Direct	Permanent	Major	-	Y
Sustainability of the Water	Positive	Direct	Permanent	Major	-	Y
Enhanced gender and participation in development	Positive	Indirect	Permanent	Minor	-	Y
Education benefits to girl child	Positive	Indirect	Permanent	Minor	-	Y
Interference with the physical Setting	Negative	Direct	Permanent	Minor	Y	Y
Interruption of existing installations on the	Negative	Direct	Permanent	Major	Y	-
Land take	Negative	Direct	Permanent	Major	Y	-
Accidental spills and leakages	Negative	Direct	Temporary	Minor	Y	-
Worker accidents and hazards	Negative	Direct	Permanent	Major	Y	Y
Increased water demand	Negative	Direct	Temporary	Minor	Y	-
Immigration and settlement	Negative	Direct	Temporary	Minor	Y	-
Growth of unplanned Settlements	Negative	Indirect	Temporary	Minor	Y	-
Child labour	Negative	Direct	Temporary	Minor	Y	-
Indigenous people participation	Positive	Direct	Permanent	Major	Y	Y

5.3 Positive impacts during planning and design phase:

Employment opportunities

With the planning and design phase of the proposed Project, there will be employment opportunities especially for professionals. Those involved in planning and design include engineers, surveyors, valuers, environmentalists and sociologists among others. Those employed will improve their living standards from the fees they will be paid for their services.

Creation of awareness

During the planning and design phase of the proposed Project, the community will be informed of the Project and their views sought on the Project. In this way, awareness will be created for both the community and the Proponent. The Proponent will also be in a position to put into practice the useful advice from the community when planning and designing the Project.

Further, there will be enhanced interaction between key parties including government and private institutions in the Project area. The key players in this process shall include Officials, relevant departments and the local community in the Project area. The administration will also be of vital importance in the disclosure.

Negative impacts during planning and design phase

The Consultant will mobilise a large team of skilled and unskilled human resource to undertake the surveys and other studies required to complete the designs. Among the activities to be undertaken are excavations for beacons and control stations establishment. These studies shall however not allow for large scale destruction and disturbance of vegetation and soils.

Mobilisation of the skilled and non-skilled labour and the process of disclosure and consultations among the residents and other stakeholders shall however lead to heightened expectations and speculations.

With the foregoing, it is envisaged that there will be minimal to no negative impacts during the planning and design stage.

Mitigation:

Impacts during this phase of the project are not significant. The Design Team has taken all necessary measures to avoid direct impact on loss of land, assets and livelihood. The PIU shall have a community development Officer who shall manage any concerns identified during construction phase with the help of ULB and Contractors.

Positive impacts during construction phase

Employment opportunities

With the construction of the proposed Project, there will be employment opportunities for both skilled and unskilled workers. This will be beneficial both from the economic and social point of view. Several workers including casual labourers, plumbers and engineers are expected to work

on the site for a period of time. Semi-skilled, unskilled and formal employees are expected to obtain gainful employment during the period of construction.

Creation of a market for construction

The Project will require materials, some of which will be sourced locally and some nationally based on standards. These include plant (pump sets, switch gear, instrumentation) pipes, valves, cement, sand, hardcore and chemicals. This will provide a ready market for suppliers in and outside the project area.

Interruption of existing installations on the pipeline route

The various installations will cross, move in or move along installations among them:

- Property accesses;
- Roads
- Underground utilities e.g. electricity and telephone links; and
- Fences and structures.

These services are critical and have implications with spillover effects on the social and economic performance.

Mitigation:

- Formal request for permission to cross, break in and build the water pipeline should be sought from affected property owners and the relevant institutions .
- Formal engagement should be done with key land and other property owners neighbouring the pipeline;
- Ensure dissemination of relevant information to each of the affected parties;
- A work plan with clear responsibilities for each party should be developed to ensure smooth execution of the construction.

CHAPTER 6

STAKEHOLDER AND PUBLIC CONSULTATION

6.1 Background

Public consultation is useful for, understanding likely impacts, determining community and individual preferences, selecting project alternatives and designing viable and sustainable mitigation and compensation plans. Extensive public consultation meetings for the Burhanpur Water Supply Project took place while undertaking this EIA study. The main objective for the consultation process was to involve the community at the very early stages so as to identify likely negative impacts and find ways to minimize negative impacts and enhance positive impacts of the project.

6.2 Objectives of the Public Consultations

The overall goal of the consultation process is to disseminate project information and to incorporate the views of the project beneficiaries and Project Affected Persons (PAPs) in the design of the mitigation measures and a management plan. The specific aims of the consultation process are to:

- Improve project design and, thereby, minimize conflicts and delays in implementation;
- Facilitate the development of appropriate and acceptable entitlement options;
- Increase long term project sustainability and ownership;
- Reduce problems of institutional coordination;
- Make the resettlement process transparent; and
- Increase the effectiveness and sustainability of income restoration strategies, and improve coping mechanisms.
- An important element in the process of impact assessment is consulting with stakeholders to gather the information needed to complete the assessment. The main objectives of community consultations were to:
 - Provide clear and accurate information about the project to the beneficiary community;
 - Obtain the main concerns and perceptions of the population and their representatives regarding the project;
 - Obtain opinions and suggestions directly from the affected communities on their preferred mitigation measures; and
 - Identify local leaders with whom further dialogue can be continued in subsequent stages of the project.

6.3. Public consultations scheduled

Public sensitization and inclusion meetings were held within the wards of the project area from 23rd April' 2016 to 25th April' 2016 with the help of respective local administration

and the elected representatives. A total of 12 meetings were held as shown in **Table 6-2** below, with enthusiastic community members. The attendance lists and minutes of meetings are presented in **Appendix 5**.

Table 6-1: Public consultation meetings during SIA

S. No.	Date	Venue	Number of Participants		
			Total	M	F
1.	24-4-2016	Ward No. 01	24	14	10
2.	24-4-2016	Ward No. 04	34	20	14
3.	24-4-2016	Ward No. 05	25	15	10
4.	25-4-2016	Ward No. 13	28	20	08
5.	25-4-2016	Ward No. 15	20	10	10
6.	25-4-2016	Ward No. 17	27	19	08
7.	24-4-2016	Ward No. 24	25	15	10
8.	24-4-2016	Ward No. 34	30	25	05
9.	24-4-2016	Ward No. 38	26	16	10
Total			239		

Table 6-2: Public Consultation Details

S. No.	Ward no.	Location	Date	Participants	Issues Raised/Discussed	Suggestion from Participants	Mitigation Measures
1	Ward no.1	at Balaji Temple, Mahajan Peth	24.04.16	Local Residents, Shopkeepers and Public representative of ward- 1 Total -24 (M=14,F=10) Participants	<p>The Project Background, Environmental, Social, traffic safety issue and benefit from the project were explained to the Stakeholders.</p> <ul style="list-style-type: none"> Ward is having acute shortage of water in summer it get worse and not able to access Quality water The Consultants Team raise the issue for the hike in monthly water tariff for proper operation and maintenance of water supply system for 30yrs No major impact on environment and no land aquisition in project. 	<p>The people who can afford the hiked water tariff gave consent ,but those are from low income group reacted on this issue and demanded subsidyThe main suggestion of participants was:</p> <ul style="list-style-type: none"> The community gave suggestion regarding water connection. They will take connection only when they get sufficient water through out the year. As present water tariff is Rs. 30 only three times it get hiked .the suggestion from people came that not to hike immediately as the supply gets start properly than people get convinced and get ready to pay. 	<p>It is being in the Project that 135LPCD given to the whole population covered under town</p> <p>Suggestion are noted down. The decision will be taken by local body representatives this has been discussed with them</p>

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2	Ward No. 04	Dharamshala, Silanpura	24.4.16	Local Residents, And public representative of ward 04 Total -34 (M=20,F=14) Participants	<p>The Project Background, Environmental, Social, traffic safety issue and benefit from the project were explained to the Stakeholders.</p> <ul style="list-style-type: none"> • For Safety of Local Traffic as well as to reduce the traffic congestion which interns reduce the noise and air pollution • The Consultants Team raise the issue for the hike in monthly water tariff for proper operation and maintenance of water supply system for 30yrs 	<p>The main suggestion of participants was:</p> <ul style="list-style-type: none"> • Peoples also demanded for proper traffic signage for speed limits for minimising the accident • people showed concern on hiked tariff and user charges.They suggested to finalise it under affordability. 	<p>The suggestion was noted down and forwarded to the high official for proper compliances</p> <p>The costing incorporated in Detailed project report.</p> <p>1.As water policy of state under draft stage suggestion/problem of the community people helps in finalizing the draft policy.</p> <p>2.Ground level views help in proper implementation of project</p>
3	Ward No. 05	at Pratappura Chouraha, Shikarpura	24.04. 2016	Local Residents, And public representative of ward 05 Total -25 (M=15,F=10) Participants	<p>The Project Background, Environmental, Social, traffic safety issue and benefit from the project were explained to the Stakeholders.</p> <ul style="list-style-type: none"> • Besides above issues the following issues discussed with the community • Road Side Water logging due to presence of Built-up Zone on either side. • Effect of Noise and Dust Pollution during construction and after construction. • Safety of Local traffic and pedestrian in Built-up Zone 	<p>The main suggestion of participants was:</p> <ul style="list-style-type: none"> • Provision of Drain in Built-up Section to eliminate the issue of road side water-logging • For Safety of Local traffic and pedestrian in Built-up Zone, footpath should be provided. • Adequate provision for minimizing the Dust and Noise Pollution during 	<p>The suggestion was agreed and Incorporated</p> <ul style="list-style-type: none"> • Proper traffic signage shall be provided for speed limits. • Proper EMP shall be fiinalise to minimise Dust and noise Pollution during Construction work in Built-up Zone. • Proper Improvement of Major Cross Junction on main roads included in design for minimising the Traffic Congestion as

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							well <ul style="list-style-type: none"> to minimise the Noise, Dust and air pollution in Built-up Section.
4	Ward No. 13	behind Khan Bhai house, Kharati bazar	25.04. 2016	Local Residents, And public representative of ward 013 Total -28 (M=20,F=08) Participants	The Project Background, Environmental, Social, traffic safety issue and benefit from the project were explained to the Stakeholders. <ul style="list-style-type: none"> For Safety of Local Traffic as well as to reduce the traffic congestion which interns reduce the noise and air pollution The Consultants Team raise the issue for the hike in monthly water tariff for proper operation and maintenance of water supply system for 30yrs 	The main suggestion of participants was: <ul style="list-style-type: none"> Peoples also demanded for proper traffic signage for speed limits for minimizing the accident The people who can afford the hiked water tariff gave consent, but those are from low income group reacted on this issue and demanded subsidy 	The suggestion was noted down and forwarded to the high official for proper compliances The costing incorporated in Detailed project report. 1.As water policy of state under draft stage suggestion/problem of the community people helps in finalizing the draft policy. 2.Ground level views help in proper implementation of project
5	Ward No. 15	near Masjid, Nagjhiri	20-4-16	Local Residents, And public representative of ward 15 Total -20 (M=10,F=10) Participants	The Project Background, Environmental, Social, traffic safety issue and benefit from the project were explained to the Stakeholders. <ul style="list-style-type: none"> Besides above issues the following issues discussed with the community Road Side Water logging due to presence of Built-up Zone on 	The main suggestion of participants was: <ul style="list-style-type: none"> Provision of Drain in Built-up Section to eliminate the issue of road side water-logging For Safety of Local traffic and pedestrian in Built-up Zone, footpath 	The suggestion was agreed and Incorporated <ul style="list-style-type: none"> Proper traffic signage shall be provided for speed limits. Proper EMP shall be finalise to minimise Dust and noise Pollution during Construction work in Built-up Zone. Proper Improvement of

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					<p>either side.</p> <ul style="list-style-type: none"> • Effect of Noise and Dust Pollution during construction and after construction. • Safety of Local traffic and pedestrian in Built-up Zone 	<p>should be provided.</p> <ul style="list-style-type: none"> • Adequate provision for minimizing the Dust and Noise Pollution during 	<p>Major Cross Junction on main roads included in design for minimising the Traffic Congestion as well.</p> <ul style="list-style-type: none"> • to minimise the Noise, Dust and air pollution in Built-up Section.
6	Ward No. 17	at open area near prakash house, Alamganj	25.04. 2016	<p>Local Residents, And public representative of ward 17</p> <p>Total -27 (M=19,F=08) Participants</p>	<p>The Project Background, Environmental, Social, traffic safety issue and benefit from the project were explained to the Stakeholders.</p> <ul style="list-style-type: none"> • For Safety of Local Traffic as well as to reduce the traffic congestion which interns reduce the noise and air pollution • The Consultants Team raise the issue for the hike in monthly water tariff for proper operation and maintenance of water supply system for 30yrs 	<p>The main suggestion of participants was:</p> <ul style="list-style-type: none"> • Peoples also demanded for proper traffic signage for speed limits for minimising the accident • The people who can afford the hiked water tariff gave consent ,but those are from low income group reacted on this issue and demanded subsidy 	<p>The suggestion was noted down and forwarded to the high official for proper compliances</p> <p>The costing incorporated in Detailed project report.</p> <p>1.As water policy of state under draft stage suggestion/problem of the community people helps in finalizing the draft policy.</p> <p>2.Ground level views help in proper implementation of project</p>
7	Ward No. 24	Burahanud din Aullia ground,Ch andrakala ward	24.04. 2016	<p>Local Residents, And public representative of ward 24</p> <p>Total-25 (M=15,F=10) Participants</p>	<p>The Project Background, Environmental, Social, traffic safety issue and benefit from the project were explained to the Stakeholders.</p> <ul style="list-style-type: none"> • Ward is having acute shortage of water in summer it get worse and not able to access Quality water • The Consultants Team raise the 	<p>The main suggestion of participants was:</p> <ul style="list-style-type: none"> • The community gave suggestion regarding water connection. They will take connection only when they get sufficient water through out the year. • As present water 	<p>It is being in the Project that 135 LPCD given to the whole population covered under town.</p>

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					issue for the hike in monthly water tariff for proper operation and maintenance of water supply system for 30yrs	tariff is Rs. 30 only three times it get hiked .the suggestion from people came that not to hike immediately as the supply gets start properly than people get convinced and get ready to pay.	Suggestion are noted down .The decision will be taken by local body representatives this has been discussed with them
8	Ward no.34	at residence of Corporator, Mr.Akeel aullia,Jaista mbh ward	24.04.16	Local Residents, Shopkeepers and Public representative of ward- 34 Total -30 (M=25,F=05) Participants	<ul style="list-style-type: none"> ▪ The Project background, Environmental, Social, traffic safety issue and benefit from the project were explained to the Stakeholders. • The Consultants Team raise the issue for the hike in monthly water tariff for proper operation and maintenance of water supply system for 30yrs 	<p>The main suggestion of participants was:</p> <ul style="list-style-type: none"> • The community wanted to know who will be responsible for compensation when pipes burst and destroy their properties. They were informed that this will be the responsibility of the water service providers; ▪ Peoples also demanded for proper traffic signage for speed limits for minimising the accident • The people who can afford the hiked water 	<p>The suggestion was noted down and forwarded to the high official for proper compliances</p> <p>Told about O & M.</p>

						tariff gave consent ,but those are from low income group reacted on this issue and demanded subsidy	<p>The costing incorporated in Detailed project report.</p> <p>1.As water policy of state under draft stage suggestion/problem of the community people helps in finalizing the draft policy.</p> <p>2.Ground level views help in proper implementation of project</p>
9	Ward No. 38	behind Khan Bhai house,Kh arati bazar	24.04. 2016	Local Residents, And public representative of ward 38 Total- 26 (M=16,F=10) Participants	<p>The Project Background, Environmental, Social, traffic safety issue and benefit from the project were explained to the Stakeholders.</p> <ul style="list-style-type: none"> • For Safety of Local Traffic as well as to reduce the traffic congestion which interns reduce the noise and air pollution • The Consultants Team raise the issue for the hike in monthly water tariff for proper operation and maintenance of water supply system for 30yrs 	<p>The main suggestion of participants was:</p> <ul style="list-style-type: none"> • Peoples also demanded for proper traffic signage for speed limits for minimizing the accident • The people who can afford the hiked water tariff gave consent ,but those are from low income group reacted on this issue and demanded subsidy 	<p>The suggestion was noted down and forwarded to the high official for proper compliances</p> <p>The costing incorporated in Detailed project report.</p> <p>1. As water policy of state under draft stage suggestion/problem of the community people helps in finalizing the draft policy.</p> <p>2.Ground level views help in proper implementation of project</p>

Key recommendations came out during Stakeholders Consultations are summarized below:-

- Rich people, traders and migrants may turn to be major beneficiaries, while other local residents particularly, vulnerable people may not gain immediately and directly from the project so during implementation all will be treated equally.
- Scheduled castes, woman headed households and other vulnerable social groups affected by the project needed to be identified. They require special consideration for water supply connections on priority basis.
- Physical relocation and resettlement should be minimised. The social fabric of the persons relocated should be maintained. The time factor in any resettlement programme and compensation should be monitored properly.
- Efforts should be made to prevent loss of access to livelihood activities
- Community should be consulted before the drawings of the design and Alignments are finalized.
Safety is an important issue especially for children, women and cattle and therefore utmost safety measures must be provided during civil construction works. Accidents will be controlled through various safety measures.
- The participants emphasized the provision of diversions and aligning the way in the interest of community safety and environmental protection, repeatedly.
- Special care should be taken if any structure came in the alignment in case of removing or shifting the sacred trees, temples, mosques and other places of cultural and historical significance (by following the rituals and customs of community concerned).
- Stray cattle, domestic and wild animals accentuate road accidents. emissions from road works, higher traffic volume, etc., will deteriorate air quality leading to various health hazards and damage to the vegetation. Protection of local flora and fauna need protection on priority basis.
- Hand pumps, tanks, wells and other traditional sources of surface water may get affected due to the project excavations.

Women's Participation in Consultations and out comes

The participation of women in FGDs during the census survey was not encouraging because of their shy nature and ignorance. Out of 20 FGDs conducted with different stakeholders the women members were turned up only at twelve locations due to non availability of time as they are working as construction labour/domestic maid servants. Some of their specific concerns are summarized below.

- FGD conducted in fringe areas where piped water supply not reached. The major part of the fringe area of town depends on the hand-pumps for its water needs; the issue of replacement of hand-pumps attains a very special significance in context of the women.
- Almost two hours get spend daily in the morning for bringing water from hand pumps.

- In summer the condition get worst when the near by area hand pumps get exhausted, women have to fetch water from long distance or depend on the tankers provided by ULB.
- Working women's livelihood get hampered in fetching water daily from neighbouring public stand post or from distance place
- Maximun women revealed that they are facing health problem in carrying water containers.
- The working women and girl students face lot of problem for fetching out water have to stand in queue for longer time, due to no availability of water in summer sometimes compels the girl students, abstains from classes.
- Responsible girl child of house gets dropout from school to manage household work specially water.

During FGD some other concerned/issues raised regarding project by the women group:

- Women from poor families concerned was that they will get job opportunity during construction work as casual labour or at office so that they get regular wage during implementation period .
- Some women demanded to operate individual / family enterprise by opening small tea stalls, shops/eateries to provide meals to the construction officials /temporary labourers coming from outside. This will enhance their family income as well as their entrepreneurial skill, which may be useful in future.

Chapter 7

ENVIRONMENTAL MANAGEMENT PLAN

7.1 Overview

The EMP presented in this Chapter summarizes the key impact elements identified and the remedial measures, the actions to be taken by various parties and the monitoring activities. An indication of the time scale for implementation and cost involved is also provided. The EMP can be further be updated during implementation with documented procedures and guidelines for work practices so as to be as responsive to the situations that various Contract Parties will encounter. The Parties should formulate procedures and practices and maintain records. The implementation of the EMP should be done within the provisions of the law and for the ultimate benefit of the people in the Project area. The effectiveness of the EMP shall be monitored and assessed during spot checks, formal inspections and at the end of the Project when an overall audit of the works shall be carried out.

A Construction Environmental Management Plan is a practical and achievable plan of management to ensure that any environmental impact during the design, planning and construction phase are minimized. An Operational Environmental Management Plan is focused on sound environmental management practices that will be undertaken to minimize adverse impacts on the environment through normal operation of a facility. The management plan further identifies what measures should be taken in the event of emergencies or incidents during the operation of the facilities.

Table 7-1 : Environmental Management Plan during Construction and Operation Phase

Impact	Mitigation Measures	Institutional Responsibility	Time Frame	Cost
Construction Phase				
Interference of existing installations on the pipeline route	<ul style="list-style-type: none"> CWRM laid along the PWD roads, Formal request for permission to cross, break in and build the water pipeline should be sought from the relevant institutions such as PWD etc; A work plan with clear responsibilities for each party should be developed to ensure smooth execution of the construction. 	D(R)BO contractor / ULBs	Throughout construction period	Not required
Utilities	<ul style="list-style-type: none"> Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during construction phase; and Require construction contractors to prepare a contingency plan to include actions to be done in case of unintentional interruption of services. Measures are taken to ensure they are protected and conserved. 	D(R)BO contractor	Throughout construction period	10,00,000.00
Dust emissions	<ul style="list-style-type: none"> Minimizing the number of motorised vehicles on use; Provide scour checks on over-15% slopes or when working in loose soils; Use predetermined tracks; Avoiding machinery working in seasonally marshy areas, pans and floodplains; Wet all active construction areas as and when necessary to reduce dust; 	D(R)BO contractor	Throughout construction period	25,00,000.00
Construction work camps, stockpile areas, storage areas, and disposal	<ul style="list-style-type: none"> Prioritize areas within or nearest possible vacant space in the subproject location (WTP site for Intake and WTP, Vacant BMC land opposite BMC office and OHT sites within the town); If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply 	D(R)BO contractor	Throughout construction period	Included in the component cost

areas	<ul style="list-style-type: none"> systems; Do not consider residential areas; Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community. 			
Air Quality	<ul style="list-style-type: none"> Consult with MPUDC/PMC on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; Damp down exposed soil and any stockpiled on site by spraying with water when necessary during dry weather; Use tarpaulins to cover sand and other loose material when transported by trucks; and Fit all heavy equipment and machinery with air pollution control devices which are operating correctly. 	D(R)BO contractor / MPUDC	Throughout construction period	10,00,000.00
Noise Pollution	<ul style="list-style-type: none"> Plan activities in consultation with MPUDC/PMC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance; Require horns not be used unless it is necessary to warn other road users or animals of the vehicle's approach; Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise- reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from the vehicle/s. 	D(R)BO contractor	Throughout construction period	10,00,000.00
Socio cultural resource	<ul style="list-style-type: none"> Obtain ASI permission for laying of water pipelines within 300 m of protected monuments prior to start of bidding Include ASI as project stakeholder, Burhanpur local representative of ASI should be included in the town level 	D(R)BO contractor and PMU	Throughout construction period	Not required

	<ul style="list-style-type: none"> committee Proper procedures (protocol) shall be used by the construction contractors in conducting any excavation work, to ensure that any chance finds are recognised and measures are taken to ensure they are protected and conserved. 			
Accessibility	<ul style="list-style-type: none"> Confine work areas along the roads to the minimum possible extent; all the activities, including material & waste/surplus soil stocking should be confined to this area. Proper barricading should be provided; avoid material/surplus soil stocking in congested areas immediately removed from site/ or brought to the as and when required Leave spaces for access between mounds of soil; Provide walkways and metal sheets where required to maintain access across for people and vehicles; Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites; Schedule transport and hauling activities during non- peak hours; Locate entry and exit points in areas where there is low potential for traffic congestion; Keep the site free from all unnecessary obstructions; Coordinate with Traffic Police for temporary road diversions, where necessary, and for provision of traffic aids if transportation activities cannot be avoided during peak hours 	D(R)BO contractor	Throughout construction period	20,00,000.00 (included in BoQ)
Disposal of Spoils	<ul style="list-style-type: none"> Maximize the re-use of excavated materials in the works as far as feasible to ensure that no permanent spoil dumps are created Properly dispose off the spoil in the identified by the design team and approved by the confirmed land owners; Care should be taken to avoid spoil location in land that could otherwise be used for productive purposes. 	D(R)BO contractor	Throughout construction period	2,00,000.00
Solid Waste	<ul style="list-style-type: none"> Construction waste should be recycled or reused as much as possible to ensure that materials that would otherwise be disposed off as waste are diverted for productive uses; The Proponent shall put in place measures to ensure that 	D(R)BO contractor and BNN	Throughout construction period	1,00,000.00

	<p>construction materials requirements are carefully budgeted and to ensure that the amount of construction materials left on site after construction is kept minimal;</p> <ul style="list-style-type: none"> • Minimization of solid waste during construction of the proposed Project through use of durable, long-lasting materials that will not need to be replaced often, thereby reducing the amount of construction waste generated over time; • Skips and bins should be strategically placed within the campsite and construction site, they should also be adequately designed and covered to prevent access by vermin and minimize odour. They should also be emptied regularly; • Measures to ensure that waste materials from the Project are disposed at suitable sites will be taken. These will include engaging only reputable truckers and conducting appropriate spot checks to verify that disposal are done in accordance with the requirements of MPUDC; • The ultimate fate of the wastes should be monitored so that they are not illegally disposed of; • Provide portable sanitary conveniences for the construction workers for control of sewage waste. A ratio of approximately 25 workers per chemical toilet should be used. 			
Vegetation Loss	<ul style="list-style-type: none"> • The Contractor will ensure proper demarcation of the Project area to be affected by the construction works; • Strict control of construction vehicles to ensure that they operate only within the area to be disturbed by access routes and other works; • Retention of trees and shrubs, where possible on the potential sites for screening of the visual impact; • Where the proposed route requires the removal of any vegetation, care will be taken to minimize the destruction or damage of trees. • Re planting of destroyed trees in cleared areas where works are complete. 	D(R)BO contractor	Throughout construction period	50,000.00

Accidental spills or leakages	<ul style="list-style-type: none"> • Maintain vehicles and machineries at manufacturers specifications; • Ensure proper storage of chemicals / materials; • During the course of the construction works, temporary drainage channels should be constructed to encourage dispersal of meteoric waters 	D(R)BO contractor	Throughout construction period	Not required
Workers accident and hazards	<ul style="list-style-type: none"> • To reduce the workers accidents and hazards the Proponent will develop and commit the Contractors to Site Occupational Health and Safety rules and regulations as stipulated in the Labour Law; • All construction workers should be advised of the dangers associated with construction work; • Workers should be provided with suitable personal protective equipment (PPE); • Provision of adequate sanitary facilities to workers; • Train all workers on Safety Health and Environment (SHE) with an aim of improving awareness; • Trenches over 1.5 m deep or wherever soil conditions dictate should be shored and secured against accidental entry by workers and the public; • Install safety signage along the work areas; • Where construction activities interfere with the movement of traffic, the site should be signed and controlled by trained flagmen/flag women and lit by night. 	D(R)BO contractor	Throughout construction period	5,00,000.00
Spread of communicable diseases and other infections	<ul style="list-style-type: none"> • Treat affected local and migrant workers which will control the movement of disease vectors (through contaminated water and between people); • Provision of personal hygiene facilities in good condition with adequate water supply; • Ensure awareness raising on proper sanitation and personal hygiene to promote proper health. 	D(R)BO contractor	Throughout construction period	50,000.00
Child Labour	<ul style="list-style-type: none"> • The contractor should ensure that all the personnel employed should be adults and should possess valid national identification 	D(R)BO contractor	Throughout construction	No additional cost

	cards.		period	
Operation Phase				
Reduced downstream Flows	<ul style="list-style-type: none"> There should be due adherence to the safest maximum abstract able water quantities of throughout the project life; Adhere to WRD water use permits; The Proponent shall monitor the hydrology to determine whether there is reduced downstream flow. 	BNN/ D(R)BO contractor	Throughout Operation Phase period	-
Increased domestic wastewater generation	<ul style="list-style-type: none"> Plans should be put in place by the ULBs/MPUDC on how to address sewer and waste water 	BNN/ D(R)BO contractor	Throughout Operation Phase period	-
Sludge Management	<ul style="list-style-type: none"> Apply quicklime treatment to dewatered sludge in order to create a pathogen and odor free product; Dry sludge on the drying beds before disposing off in a dedicated disposal site; Preparation and enforcement of operational guidelines for sludge treatment / management. 	BNN/ D(R)BO contractor	Throughout Operation Phase period	2,00,000.00
Safety hazards (Chlorine and Alum Storage)	<ul style="list-style-type: none"> Provide the following measure at the chlorine application unit: <ol style="list-style-type: none"> Chlorine neutralization pit with a lime slurry feeder Proper ventilation, lighting, entry and exit facilities Facility for isolation in the event of major chlorine leakage Personal protection and safety equipment for the operators in the chlorine plant Provide training to the staff in safe handling and application of chlorine; this shall be included in the contract of Chlorinator supplier 	BNN/ D(R)BO contractor	Throughout Operation Phase period	3,00,000.00
Noise generation and vibration	<ul style="list-style-type: none"> The design shall propose noise and vibration proofed systems installation. These shall be monitored during operation and if the values go above ambient or specifications, the necessary measures shall be undertaken which may include: <ol style="list-style-type: none"> Improvement of proofing systems; Servicing of the offending equipment; 	BNN/ D(R)BO contractor	Throughout Operation Phase period	1,50,000.00 (It is a part of Contractor's responsibility)

	<ul style="list-style-type: none"> iii. Development of foundations and mountings; and iv. Complete or partial overhaul. • Personal protective equipment shall be provided at noisy areas for use by workers and visitors. 			
Emergency preparedness and response	<ul style="list-style-type: none"> • Design and implement an emergency response plan; • Coordinate with aid organizations/agencies such as with the local fire brigade; • Install fire hydrants within the proposed development; • Install a fire extinguisher at the plant and train workers on how use. 	BNN/ D(R)BO contractor	Throughout Operation Phase period	2,00,000.00
Capacity building	<ul style="list-style-type: none"> • Provide a forum for human resources development on environmental conservation; • Establish a schedule for continuous improvement of human capacity on environmental management; • Develop in-house guidelines on environment, health and safety management. 	BNN/ D(R)BO contractor	Throughout Operation Phase period	Included in TA Component
	Total EMP cost			92,50,000.00

The entitlement framework proposed in ESMF chapter-7 is adapted based on the present version of the RFCTLARR, 2013. The impact category and compensation has been defined as per RFCTLARR 2013.

Table 7-2: Resettlement Action Plan

Sr.	Impact Category	Yes/No	Entitlement Framework as per RFCTLARR Act	Social Management Measures	Estimated Cost in INR
1.			Impacts to Title holders (Loss of Private Properties)		
A	Loss of Land (agricultural, homestead, commercial or otherwise)	No	Compensation as per RFCTLARR Act, 2013 criteria provided in paragraph 26 of the Act 1. One time grant not exceeding Rs. 5,00,000/- for each affected household or annuity policy that shall pay Rs.2000/- per month for 20 years with appropriate indexation to Consumer Price indexation.	i. No.of HHs (with valid title) to be given developed plots and house ii. No. of HHs to be given cash compensation = iii. No. of squatters to be given developed plots and house = iv. No .of HHs to be given shifting allowance = v. No. of HHs to be given transitional assistance =	Not applicable
B	Loss of residential structure	No	The Compensation for the structure will be paid as per the provisions of the RFCTLARR Act 2013 . 1. Cash compensation as per the Market Value of the structure and 100 % solatium. 2. Each affected family having cattle will be provided one time financial assistance of Rs. 25,000 . 3. Provision of alternative house or Minimum of Rs. 1,50,000	i. No.of HHs (with valid title) to be given alternative land = ii. No.of HHs (with valid title) to be given cash compensation = iii. No. of individuals to be given cash compensation = iv. No. of individual tenants / leaseholder / sharecroppers to be given cash assistance = v. No. of individuals to be given notice for harvesting = vi. No. of individuals to be given cash compensation for non-	not applicable

			<p>financial assistance in Urban Areas. Provision of House in case of rural area as per IAY specifications or equivalent cost of the house.</p> <p>4. Transportation cost of Rs. 50,000/-</p> <p>5. Right to salvage affected materials</p>	<p>perennial crops =</p> <p>vii. No. of individuals to be paid cash compensation for perennial crops =</p> <p>viii. No. of individuals to be paid cash assistance for loss of agricultural labour =</p>	
C	Loss of Commercial structure	No	<p>The Compensation for the structure will be paid as per the provisions of the RFCTLARR Act 2013.</p> <p>1. Cash compensation as per the Market Value of the structure and 100 % solatium.</p> <p>2. One time grant to artisan, small trader and certain others shall get a one-time financial assistance of Rs. 25,000/-</p> <p>3. Transportation cost of Rs. 50,000/-</p> <p>4. Right to salvage affected materials</p>	<p>i. No. of units (with valid title) to be given alternative land = ...</p> <p>ii. No. of units (with valid title) to be given cash compensation =</p> <p>iii. No. of units (with valid title) to be given livelihood assistance =</p> <p>iv. No. of tenants to be given livelihood assistance =.</p> <p>v. No. of tenants to be given shifting assistance =</p> <p>vi. No. of squatters to be given developed plot and built shop =</p> <p>vii. No. of squatters / encroacher to be given cash compensation =</p> <p>viii. No. of squatters to be given shifting assistance =</p> <p>ix. No. of squatters to be given livelihood assistance =.....</p> <p>x. No. of employees to be given livelihood assistance =</p>	not applicable
D	Impacts to tenants (residential /	No	<p><u>Residential</u></p> <p>1. Each affected family that is</p>	<p>i. No. of HHs to be provided CPRs</p> <p>ii. No. of HHs to be provided amenities</p>	not applicable

	commercial/agricultural)		<p>displaced due to land acquisition shall be given a monthly subsistence allowance equivalent to Rs. 3000/- per month for a period of one year from the date of award.</p> <p>2. One time financial assistance of Rs. 50,000 as transportation cost for shifting of the family, building materials, belongings and cattle.</p> <p>3. Right to salvage affected materials</p> <p><u>Commercial</u></p> <p>1. One time financial assistance of Rs. 50,000 as transportation cost for shifting of the family, building materials, belongings and cattle.</p> <p>2. One time grant to artisan, small trader and certain others shall get a one-time financial assistance of Rs. 25,000</p> <p><u>Agricultural Tenants</u></p> <p>In case of agricultural tenants advance notice to harvest crops or compensation for lost crop at market value of the yield determined by agricultural department</p>		
E	Impacts to	Yes	The Collector for the purpose of determining the value of trees,	i. Money to be spent on	as per collectorate rate

	trees, plants and standing crops,		plants and standing crops attached to the land acquired, use the services of experienced persons in the field of agriculture, forestry, horticulture, sericulture, or any other field, as may be considered necessary by him.	restoration of losses due to resettlement = nil ii. Money to be spent on restoration of amenities = 40		
2.			Impacts to Non-title holders (Squatters)			
A	Loss of House	No	<ul style="list-style-type: none"> • Compensation at Market Value for the affected structure OR Alternative house with minimum area as per Government norms • One time Subsistence grant of Rs. 18,000/- • One time financial assistance of Rs. 5,000/- as transportation cost for shifting of the family, building materials, belongings and cattle. • Right to salvage the affected materials; 	No. of houses= transportation charge=	not applicable	
B	Loss of Shop	No	<ul style="list-style-type: none"> • Compensation at Market Value for the affected structure. • One time financial assistance of Rs. 5,000/- as transportation cost for shifting • One time grant of Rs. 2500/- for loss of trade/self-employment for the business owner • Right to salvage the affected materials; 	i. No. of HHs (with valid title) to be given land for land = nil ii. No. of HHs to be given cash compensation = nil iii. No. of HHs to be given livelihood assistance = 40 iv. No. of squatters to be given developed		

				plots and house / shop = nil v. No. of squatters / encroachers to be given cash compensation = nil	
C	Encroached Structure	No	<ul style="list-style-type: none"> Cash compensation for the affected structure as per the Market Value One time shifting assistance of Rs. 5000/- for Kiosks Right to salvage material. 	No. of vendors= nil	Not required
3.	Loss of Income Livelihood	yes	Subsistence allowance equivalent monthly minimum agricultural / industrial wages for 3 months		As per collectorate rate
4.	Impact to Vulnerable Displaced People	No	<p>Training for skill development. This assistance includes cost of training and financial assistance for travel/conveyance and food.</p> <p>One adult member of the affected household, whose livelihood is affected, will be entitled for skill development.</p> <p>Additional assistance for SC/ST and other vulnerable households whose livelihood/loss of shelter is impacted by the project will be paid additional one time assistance of Rs. 5000 in case of non-title holder families.</p>	no.of HHs=10	INR 50,000
5.	Unidentified Impacts	Yes	Unforeseen impacts encountered during implementation will be addressed in accordance with the principles of this policy		INR 10,0000
			Total		INR 10,50000

7.2. Monitoring and Evaluation

Monitoring is an important tool in establishing the success or failure of a project in regards to compliance to environmental safeguards. Evaluation is also important in assessing the achievement of the mitigation measures set out in the Environmental Management Plan, performance and efficiency of the project in regards to ESMP. Monitoring and evaluation process will involve the assessment of the following benchmarks

- The implementation process of guidelines stipulated in the ESMP
- Evaluate impact of the project to the environment and social setting of Burhanpur Town
- Monitoring of the involvement of the community through public consultations in decision makings and the implementation of the project

Project implementation involves various interventions to achieve the objectives of providing safe, clean and adequate drinking water on sustainable basis and improving health and sanitation conditions in Burhanpur. Simultaneously, to protect and improve the environmental conditions to achieve the goal, various mitigating measures would be taken up.

Table 7-3 : Environmental Monitoring Plan during Construction Phase

S.No.	Attributes	Stage	Parameters to be monitored	Location	Frequency	Responsibility
1.	Debris/ Construction materials disposal	Construction Stage	Safe disposal of construction wastes including bituminous wastes	All construction sites	Random checks once a week	Contractor to implement Monitoring by PMC / PIU
2.	Dust Suppression	Construction Stage	No. of tankers for water sprinkling, Timing of sprinkling, Location of sprinkling, Log Book	All construction sites	Random Checks once a week	Contractor to implement Monitoring by PMC / PIU
3	Ambient Air Quality	Construction Stage	PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , CO	All construction sites within town	Once in a season (except monsoons) for the entire construction period	Contractor, Monitoring by PMC / PIU
5	Noise Levels	Construction Stage	Equivalent Day & Night Time Noise Levels	All construction sites within town	Once in a season during construction and operation stages	Contractor, Monitoring by PMC / PIU
7	Establishing Medical Facilities	Construction Stage	Access to health facilities for the construction workers	All construction sites within town	all through the construction period	Contractor Monitoring by PMC / PIU
8	Accident Record	Construction Stage	No. of fatal accidents, No. of injuries, No. of disabilities	All construction sites	Continuous	Contractor Monitoring by PMC / PIU
9	Post construction clearance of	Construction Stage	Whether temporary locations for workers camp, site office,	All construction sites	Post construction	Contractor Monitoring by PMC / PIU

	site		batching plant and other construction locations are restored to preproject conditions			
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Table 7-4 : Environmental Monitoring Plan: Operation Phase

Monitoring field	Monitoring parameters	Frequency	Responsibility	Cost & Source of Funds
Source water quality	pH, Cl, F, NO3, TC, FC, Hardness, Turbidity BOD, COD, DO, Total Alkalinity heavy metals & pesticides	Quarterly	DBO Contractor and BMC	Operating costs
Monitoring of quality of water supplied to consumers	pH, Nitrite, Nitrate, Turbidity , Total Alkalinity, Fluoride, Iron, Total coliform and Feacal coliform etc . and follow IS:10500-2012 .	Monthly Once, five water samples	DBO Contractor and BMC	Operating costs

SMP Monitoring & Evaluation

No land acquisition and R&R is anticipated. In case of impact on structures or loss of livelihood if any is identified during implementation phase same shall be assessed through joint verification between PIU, ULB and contractor representatives and shall be managed as per the ESMP. The PIU and MPUDC shall monitor the implementation of SMP and track indicators for IEC activities, grievance redressal, participation of women, scheduled Tribes and other disadvantaged people.

7.3. Project implementation and Monitoring Agencies

Urban Development and Environment Department (UDED) of Government of Madhya Pradesh (GoMP) will be the Executing Agency for the Program, responsible for management, coordination and execution of all investment program activities. Implementing Agency will be the Madhya Pradesh Urban Development Company (MPUDC) of GoMP, which will implement this program via a Project Management Unit (PMU) at Bhopal, and Project Implementation Units (PIUs) at project towns. PMU will appoint contractors to build infrastructure and PIUs will coordinate the construction. PMU and PIUs will be assisted by Program Management Consultants (PMC).

Table 7-5: Organizational Roles

Level	Organization	Role
State	UDED	Monitor and evaluate the works and execution of EMP
State	MPUDC (PMU)	Appraisal and approval of sub-projects and variations Execution Financing and monitoring Forwarding Grievances Procurement of services of consultants Procurement of Centralized Goods and Works (with ULB's consent)
	Empowered Committees	Review and appraise sub-Projects Approval of sub-projects and variations Approval and clearances for various activities including the contracts etc.
	Project Management Consultants	Help in Project Execution and Preparation Supervision Quality Control
	Panel of Consultants	Consultancies required of MPUDP at state and ULB level
	MPUDC (PIU)	Implementation through contractors and ensure effective implementation of safeguards through

		<p>rigorous monitoring</p> <p>Obtaining various clearances and approvals required and essential for project implementation</p> <p>Implementation, supervision and progress monitoring of reforms consolidation activities</p> <p>Implementation, supervision and progress monitoring of sub project activities</p> <p>Implementation, supervision and progress monitoring of all Community Awareness and Participation activities</p>
District Level	District Collector (Revenue)	Transfer of Government Lands, Grievance Redressal in case any.
City level	Council	<p>Overall monitoring of EMP</p> <p>In case of any grievance, bring it to the notice of appropriate authority through Mayor/Chairman / Commissioner/ Chief Municipal Officer</p>
	ULB	<p>Support in Implementation</p> <p>Assistance in obtaining necessary government approvals and orders for implementation of project</p> <p>Implementation, supervision and progress monitoring of reforms consolidation activities</p> <p>Implementation, supervision and progress monitoring of town planning activities</p> <p>Implementation, supervision and progress monitoring of all Community Awareness and Participation activities</p>

CHAPTER 8

Vulnerable Group (SC/ST) in Burhanpur

8.1 Distribution of Scheduled Tribes in Madhya Pradesh in Relation to India

1. The tribal population of Madhya Pradesh increased to 15,316,784 in 2011 from 12,233,474 in 2001. The decadal growth rate during this period is 25.20 percent. The trends in the population of the Scheduled Tribes by residence (total, Rural and Urban) for Census Years 1961- 2011 shows that the percentage of Scheduled Tribes Population in the Rural Areas (11.3 percent) much higher than Urban Population (2.8 percent). In Madhya Pradesh certain areas have been declared as scheduled area as Specified by the Scheduled Areas under the fifth Schedule of Indian Constitutions¹. List of Schedule Areas in Madhya Pradesh is provided in **Appendix 6**.
2. Government of Madhya Pradesh has a dedicated Tribal Welfare Department; their role is limited to awarding stipends, running residential schools, hostels and implementing other central schemes for development of Schedule Tribes. They have no role in land acquisition or rehabilitation and resettlement. Safeguards related to land acquisition and resettlement and rehabilitation as outlined in the LARR Act, 2013 is also applicable for the tribal community or the indigenous people of the land and this has been adopted by the State Government of Madhya Pradesh. The regulations outlined for adverse social impacts and risks are also applicable for the tribal community. The LARR Act, 2013 provides some additional benefits to the affected SC/ST people. The provisions and benefits that are listed here is deemed appropriate for urban projects.
3. According to the Census of India 2011, 8.61 percent of the Indian population is classified as ST. In comparison to the national figure, Madhya Pradesh has 14.7 percent of its populations classified as ST. The major tribes of Madhya Pradesh are classified in **Appendix 7**.
4. The social composition of Burhanpur given in table below states that out of total population of Burhanpur town SC and ST comprises of 6.85% and 1.03% respectively.

Table 8-1: Social Composition in Burhanpur Town

Social Composition	Population	Male	Female	Percentage of population
SC	14440	7375	7065	6.85
ST	2179	1094	1085	1.03
Others	194267	185798	186117	92.11
Total Population	210886			100

(Source: Census, 2011)

¹ Scheduled areas are autonomous areas within a state, administered federally, usually populated by a predominant Scheduled Tribe.

Table 8-2. Wardwise detail of Indigenous people population of Municipal Corporation Burhanpur are as follows:-

S.no	Ward no.		Total population of ward	Total population (Schedule Tribe)	Male	Female	Total population (Schedule caste)	Male	Female
1	01	885	4498	32	6	3	62	30	32
2	02	1537	8577	496	104	49	990	494	496
3	03	1013	5551	424	28	14	912	488	424
4	04	677	3690	26	34	17	62	36	26
5	05	616	3137	36	16	7	64	28	36
6	06	691	3506	12	7	7	26	14	12
7	07	628	3393	8	16	7	11	3	8
8	08	1094	5934	905	11	7	1822	917	905
9	09	924	5310	83	15	9	183	100	83
10	10	824	4503	183	61	31	356	173	183
11	11	531	2756	15	13	6	28	13	15
12	12	540	3348	50	9	5	104	54	50
13	13	888	5296	325	14	6	636	311	325
14	14	601	3888	29	0	0	63	34	29
15	15	717	4172	35	205	100	85	50	35
16	16	756	3732	1	23	10	1	0	1
17	17	1332	7926	920	34	18	1919	999	920
18	18	716	4018	14	0	0	27	13	14

ESA Report: Burhanpur Water Supply Scheme

19	19	630	3280	61	18	9	148	87	61
20	20	502	2718	1	7	3	1	0	1
21	21	708	4067	1	151	76	2	1	1
22	22	1033	5864	456	21	9	952	496	456
23	23	653	4226	1	2	2	2	1	1
24	24	720	4348	10	0	0	26	16	10
25	25	360	2320	0	0	0	0	0	0
26	26	732	4790	8	58	28	20	12	8
27	27	630	3951	3	0	0	8	5	3
28	28	643	4336	8	1	1	15	7	8
29	29	722	4594	0	0	0	0	0	0
30	30	530	3457	0	0	0	0	0	0
31	31	644	4238	6	1	1	13	7	6
32	32	566	3556	6	0	0	10	4	6
33	33	590	3720	0	0	0	0	0	0
34	34	445	2857	0	0	0	0	0	0
35	35	628	3497	51	24	8	116	65	51
36	36	631	3246	124	25	14	227	103	124
37	37	625	3543	55	14	8	117	62	55
38	38	1162	5871	134	158	75	258	124	134
39	39	1550	8524	641	236	122	1310	669	641
40	40	1317	6652	83	184	96	163	80	83
41	41	1603	7360	321	483	321	985	502	483

42	42	1513	7073	178	251	178	512	261	251
43	43	578	2604	42	79	42	156	77	79
44	44	569	2542	1	106	1	224	118	106
45	45	633	3244	4	3	4	6	3	3
46	46	647	3440	14	76	14	148	72	76
47	47	547	2707	18	351	18	718	367	351
48	48	1037	5026	105	473	105	952	479	473
Total		38118	210886	2179	1094	1085	14440	7375	7065

Source: Census 2011

As Burhanpur district is not coming under the scheduled V declared by Government of Madhya Pradesh. (**Appendix -7**) Social Impact screening done on different aspects no negative impact of project on Indigenous people .project is coming under category C.No IPP plan required for IPs but strategy should be planned for the active participation of Indigenous people.

8.2. Public Consultation

During the entire planning phase, an effort has also been made to help people understand the positive impacts and benefits from the project for them in terms of better connectivity and linkage with the surrounding areas, reduction in the problems, minimization of health risks through provisions of good services of quality supply, underpasses, median control and other design interventions, improvement in the economy of the people, better access to health, education facilities in the region. The process has helped in building confidence amongst the Indigenous people of different wards and mainstreamed them in the process and making them partners in the project. For consultation the wards selected on the basis of highest population of SC/ST in BMC. During consultation process it was ensured the participation of Indigenous people also. The Number of Indigenous people participated in consultation given in table ward wise given below:

Table 8.3. Participation of ST/SC population during Public Consultation

WARD no.	SC/ST Household		
	Total	M	F
08	17	07	10

17	20	15	05
22	19	14	05
39	15	08	07
41	22	12	10
47	27	13	14
48	28	18	10
TOTAL	148		

Key issues of consultations with vulnerable group:

- Not getting sufficient drinking water, as in some wards are not having 100% piped supply and the supply is alternate days in BMC.
- People complaint about contaminated water due to leakage in existing lines.
- In summers due to scarcity of water livelihood of working men & women get hampered.
- Demanded subsidy in water connection and user charges.
- Safety measured during excavation must be ensured as some working couples leave their small children at home.

8.3. STRATEGY FOR TRIBAL PEOPLE'S PARTICIPATION

- Consultations and information disclosure are an integral part of IPP preparation in order to ensure that the priorities, preferences, and needs of the tribal groups have been taken into consideration adequately. With that objective in view, a strategy for consultation with tribal communities and their leaders will be developed so that these are conducted in a participatory manner.
- The affected / Beneficiaries IPs will be actively engaged in all stages of the project cycle, including project preparation, and feedback of consultations with the IPs will be reflected in the project design, followed by disclosure. Their participation in project planning will inform project design, and the TPs should be convinced of their benefits from the project. The awareness material prepared will be translated into the local language of the IPs and made available to them before implementation of the project.

- iii) Local CBOs/tribal community representatives will be involved in IPP implementation and resolving all issues related to the IP through consultation and facilitation by the ULB and PMU. The PMU/ULB will ensure adequate flow of funds for consultation and facilitation of planned activities within IP.
- iv) The Schemes running by government of Madhya Pradesh for Vulnerable people, there participation will be ensured during project period.
- v) One project information disclosure (PID) brochure will be prepared, translated into a language understandable to the tribal people, and distributed among them.
- vi) Project Monitoring Indicators will be designed to monitor project impact as beneficiaries to the IPs. The regular participation of IPs ensured through the monitoring Indicators.
- vii) Ensure 100% access to water infrastructure facilities to IPs.

CHAPTER 9

CONCLUSION AND RECOMMENDATIONS

The Environmental Assessment (EA) Study was carried out based on field assessments and public consultations with the community who are likely to benefit or to be affected by the proposed Project and the Proponent in compliance with the World Bank environmental policies and EIA Notification 2006. The proposed sub-project is step towards providing water to the people of Burhanpur Town and in that case, there is overwhelming acceptance of the project by the local community.

There are no environmentally sensitive areas (like forest, sanctuaries etc) in or near sub-project area. Also there are no archeological and historical protected areas/ sites within or near the town. Hence the impact identified are mostly related to construction and operation phase.

The subproject is unlikely to cause significant adverse impacts because: (i) most of the individual components involve straightforward construction and operation, so impacts will be mainly localized; (ii) in most cases the predicted impacts are likely to be associated with the construction process and are produced because the process is invasive, involving excavation, obstruction at specific construction locations, and earth movements; and (iii) being located mainly in the already constructed facilities and built-up area will not cause direct impact on terrestrial biodiversity values. The potential adverse impacts that are associated with design, construction, and operation can be mitigated to standard levels without difficulty through proper engineering design and the incorporation or application of recommended mitigation measures and procedures.

The following recommendations are made with respect to the implementation of the proposed Burhanpur Water Supply Project:

- That all land required for the proposed sub-project is government land/ULB.
- That construction of all facilities in the proposed Project is carried out in accordance with approved plans, regulations, policies and laws.
- That the Operation and Maintenance of the Water Supply should comply with the international Best Practices and the principles of environmental management including the principles of sustainability, prevention, precaution and public participation.

Appendix 1: Environmental and Social Checklist

CHECKLIST FOR SUBPROJECTS IN PROPOSED MADHYA PRADESH URBAN DEVELOPMENT PROJECT

Part A

Name of the Department/cell: **Urban Development and Environment Department(UDED)**

Name of the City/Municipality: **Burhanpur Municipal Corporation**

Name, Address and Telephone of the Officers Responsible

(i)Commissioner: **Mr.Suresh Rewal**

(ii)Engineer: **Mr. D.K.Batra(EE), Mr.Sagir Ahmed Khan(AE)**

(iii)Others: **Mr.Gopal Mahajan, Kailash Bhawsar**

Name of the proposed sub project: **Water- Supply Augmentation Scheme Burhanpur(M.P)**

Name of the proposed site: **Burhanpur**

Proposed utility sub component/functions at the site: **Intake/WTP/Rising main/Distribution line** eg...Intake point/STP/WTP/Rising main/Distribution main/ distribution line etc..

Current land use of the proposed site(s):

S. no	Component proposed	capacity	Location	Khasra details	land availability / require area	ownership of land	Status of land	NOC
1	Annicut	10 MCM				Water Resource Department	vacant	
2.	Intake well	1500KL				Water Resource Department	vacant	
3.	Water Treatment Plant	50 MLD	Basad village (Nepanagar)	133/134/136/137/138/140/141	12.61 ha./ 3.44 ha.	Government Land	Vacant	recieved
4.	Over Head Tank(zone-5)	600KL	Sutwala area			Government Land	vacant	
5	Over Head Tank(zone-6)	2200KL	Marichika			Government Land	vacant	
6.	Over Head Tank(zone-7A)	1250KL	Near M.C. office			Government Land	vacant	

7.	Over Head Tank(zone-7B)	1650 KL	Nathwada Sumpwell			Government Land	vacant	
8.	Over Head Tank(zone-9)	2600KL	near community Toilet			Government Land	vacant	

Part B

(Please tick mark **✓** in the appropriate column and provide relevant information in Col.6)

			Probable social Impacts		
Sl. No	Social Screening Questions	Yes	No	Possible	Extent/Number/ Remarks
1	2	3	4	5	6
1	Is land in the possession of Municipality? What is the area?				Yes, Only WTP site possession received by ULB
2	Is the current ownership status of the proposed site clear? Who is the current owner?	yes			Current ownership Water Resource Department & Revenue Department
3	Is there any land transfer formalities to be completed before using the site for proposed function?		No		WTP land transferred to ULB,OHT land transfer proposals submitted to revenue Department
4	Will there be loss perennial crops (yielding and/or fruit bearing and other trees)?		No		
5	Will the project displace residential structures (Houses)?		No		
6	Will the project displace commercial structures (shops		No		

	workshops, factory and other establishments)?				
7	Will there be loss of structures other than buildings? (Compound wall/gate/water tanks/ slabs/ wells/ septic tanks, etc.		No		
8	Are any cultural properties (place of worship, religious structure memorial, monument, cemetery, etc.) affected or displaced?		No		
			Probable social Impacts		
Sl. No	Social Screening Questions	Yes	No	Possible	Extent/Number/ Remarks
1	2	3	4	5	6
9	Are any community properties (hand pump, well, tap, chabutra, community hall etc.) affected or displaced?			possible during excavation/laying of pipeline in lanes	
10	Are any tenants running enterprises or operating from the structures that would be displaced?		No		
11	Are there any tenants residing in the structures that would be displaced?		No		
12	Are there residential squatters within the proposed site boundary?	Yes			

13	Are there commercial squatters/vendors/Hawkers within the proposed site boundary?	Yes			
14	Will there be loss of incomes and livelihoods of employees of affected establishments / structures?		No		
15	Will people lose access to common facilities, services, or natural resources?		No		
16	Will there be loss of existing access to private properties and services?		No		
17	Is there any Tribal community members residing in group / cluster in close proximity to the site?	yes			Tribal community scattered in wards.They are not in cluster.
18	Is there possibility of any conflict/Grievances by the surrounding land users due to proposed activities on the site?		No		
			Possible Impacts		
S. No	Environmental Aspect	Yes	No	Possible	Extent/Affected Number/ Remark
19	Does the site currently have any important environmental features like trees, water courses, etc.?	Yes			
20	Are there any ecologically sensitive areas –e.g. mangroves or other protected areas – within close proximity (~50m) of the site?	Yes			ASI listed monument are there in project site
21	Are there any sensitive human receptors – E.g. school or hospital – within close proximity (~50m) of the site?	Yes			Overhead Tank sites are in the proximity.
22	Does the access to the candidate site pass through or close to any sensitive receptor – human or		No		

	ecological – mentioned above?				
23	increase the potential for noise, air and/or water pollution?		No		

Signature and Name of the Officer Responsible

Date

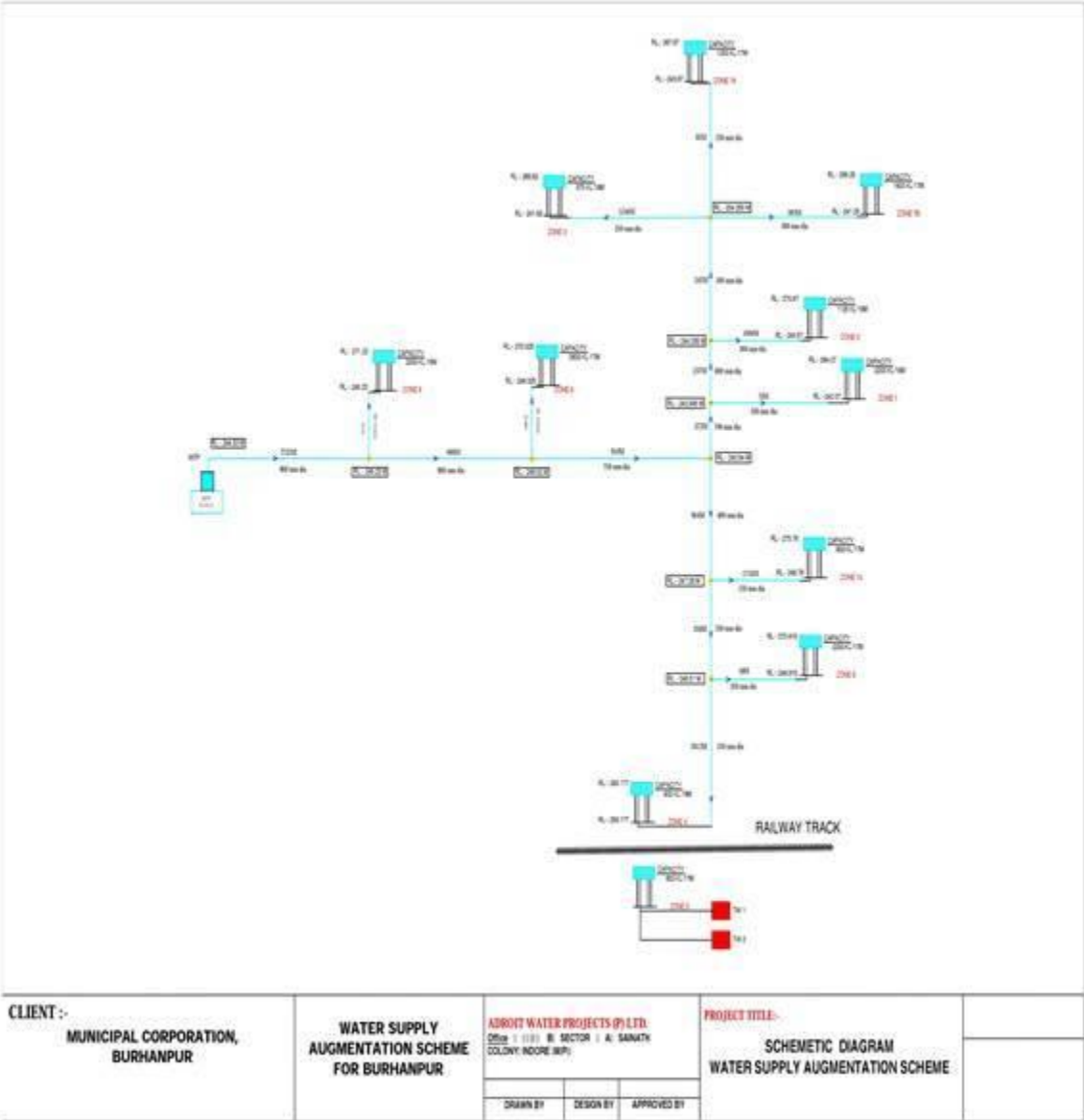
Part C

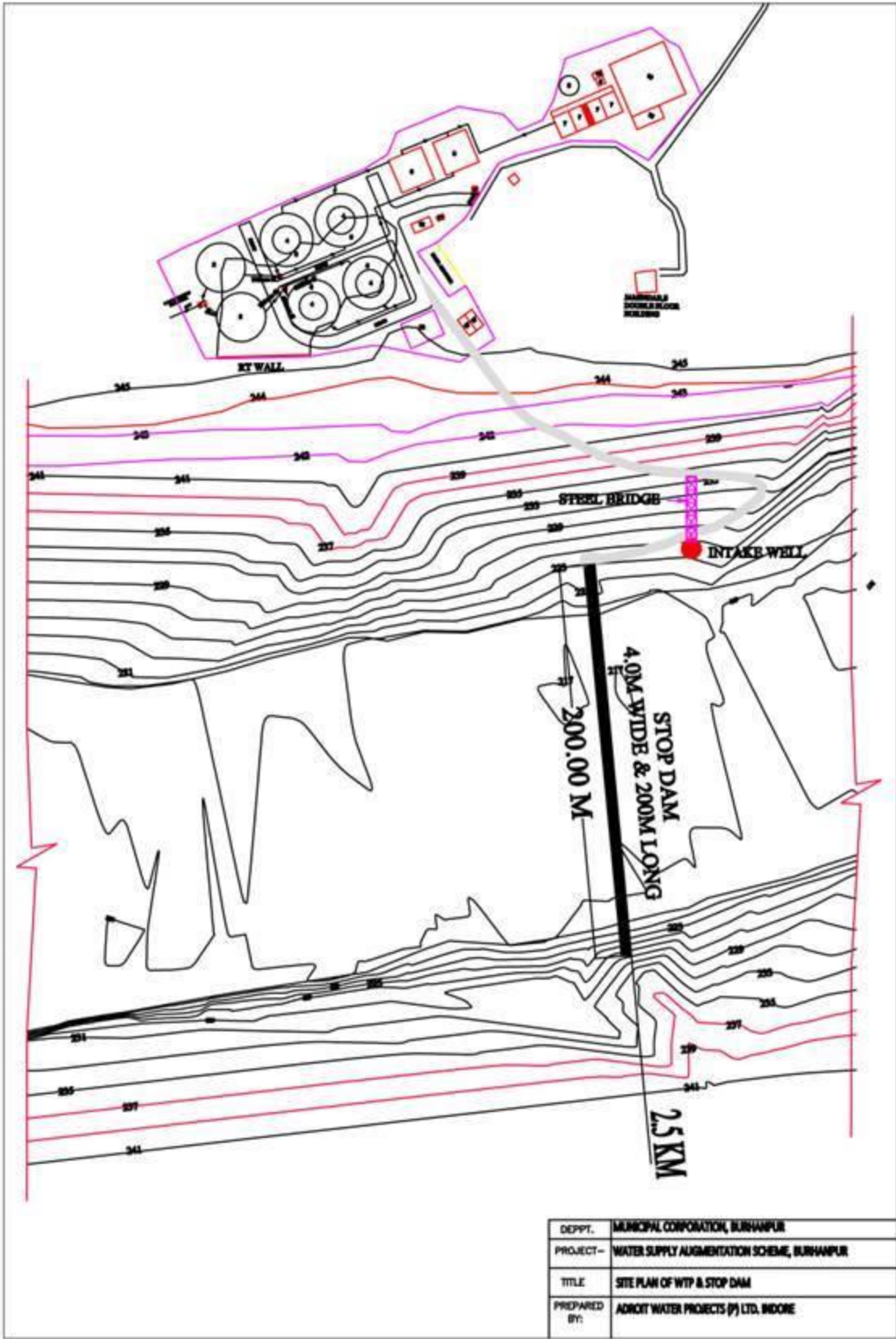
S.No	Other Questions	Answers/Remarks
1.	Who are the targeted beneficiaries of this project?	Target beneficiaries are residents of wards covered under project, slums coming under these wards & commercial centers coming under wards.
2.	Does this project and its sub components require any land acquisition? If yes, where and how much?	No, all sites have revenue land only formal transfer of land on ULB name is required.
3.	Does this project and its sub components require displacement of people or negative impact on their livelihood	No impact
4	Does this project require dismantling of buildings and structures?	No dismantling proposed
5	Is there any likelihood of this project to pass through tribal inhabited areas?	As Indigenous people are the part of project area scattered in different wards(as per census 2011,Total ST population in different wards is 2179 and SC population 14440 persons out of total population 210886.
6	Is there any public resistance expected for the project or any of its sub component? If yes, what is your plan to manage the same?	No public resistance .
7	Do you foresee any specific issues for women, which should be managed under the project	Beside water supply, Sanitation(individual toilets) is the other major problem faced by women of slum areas.

NOTE: If the response is yes to any of the above follow up question would be in which place and sub component.

Appendix: 2

Schematic Diagram of Burhanpur WSS





Appendix 3: NOC letter from WRD

**मध्यप्रदेश शासन
जल संसाधन विभाग
बृहद परियोजना नियंत्रण मंडल**

ब्लॉक क्रमांक 409, चौथी मंजिल, जल संसाधन मंडल
तुलसी नगर, भोपाल - 462001
Tlx. 0755-2557459
Email - ebmuphpf@gmail.com
भोपाल, दिनांक 11 सितंबर, 2013

पत्र क्र०/सावि.स-5-39/सक-375/2013/31/69

प्रति,
✓ मुख्य अभियंता,
नर्मदा साप्ती कछार,
जल संसाधन विभाग,
इन्दौर(म.प्र.)

विषय : नगर पालिका निगम बुरहानपुर को बुरहानपुर नगर की पेयजल आवर्धन योजना के निर्वहण साप्ती नदी से 10.00 मि.घ.मी. वार्षिक जल आवंटन प्राप्त। (प्रकरण क्रमांक - 39/375)

साधिकार समिति की पंचवीं बैठक दिनांक 7 सितंबर, 2013 के कार्यवाही विवरण की कड़िका 3.3 में लिए गए निर्णय अनुसार नगर पालिका निगम बुरहानपुर को बुरहानपुर नगर की पेयजल आवर्धन योजना के निर्वहण साप्ती नदी पर ग्राम बसाड के पास जल संग्रहण हेतु आर.सी.सी. स्टाफ डैम का निर्माण स्वयं के खर्च पर करने की शर्त पर साप्ती नदी से 10.00 मि.घ.मी. वार्षिक जल का आवंटन निम्न शर्तों के साथ प्रदान किया जाता है-

1. साप्ती नदी से 10.00 मि.घ.मी. वार्षिक जल हेतु नगर पालिका निगम, बुरहानपुर के प्राधिकृत अधिकारी को निर्धारित प्रारूप 7 (क) में कार्यपालन यंत्री, जल संसाधन समिति, बुरहानपुर को साथ अनुबंध करना होगा।
2. आवंटित जल की 10.00 मि.घ.मी. वार्षिक मात्रा के लिये नगर पालिका निगम, बुरहानपुर को, शासन द्वारा समय-समय पर लागू की गई जल दर अनुसार जल कर का विधिवत भुगतान समय पर कार्यपालन यंत्री, जल संसाधन समिति, बुरहानपुर को करना होगा। जल कर का भुगतान अनुबंध की तिथि से प्रभावशील होगा।
3. जल के उपयोग के लिये आर.सी.सी. स्टाफ डैम के निर्माण से संबंधित आवश्यक सिविल एवं यांत्रिकीय कार्य नगर पालिका निगम, बुरहानपुर अपने स्वयं के खर्च पर करेगी। ऐसे सिविल यांत्रिकीय निर्माणों के रुमाकन एवं ड्राइंग का पूर्व अनुमोदन जल संसाधन विभाग के मुख्य अभियंता से प्राप्त करना आवश्यक होगा।
4. जल आपूर्ति की अनुमति जिस उद्देश्य के लिये दी जा रही है, उसमें परिवर्तन नहीं किया जायेगा। नगर पालिका निगम, बुरहानपुर द्वारा अन्य उद्देश्य के लिये जल का उपयोग किये/चाहे जाने पर आवंटन/स्वीकृति निरस्त कर दी जायेगी।
5. नगर पालिका निगम, बुरहानपुर को उक्त जल स्रोत से लिये गये जल के मापने के लिये स्वचालित उपकरण का स्थापन तथा अनुरक्षण, कार्यपालन यंत्री का पूर्व अनुमोदन प्राप्त कर स्वयं के खर्च पर करना होगा।
6. पेयजल योजना/पेयजल आवर्धन परियोजना के लिये मध्यप्रदेश शासन जल संसाधन विभाग किसी भी प्रकार का वित्तीय भार वहन नहीं करेगा।

(एस.के.खरे) 11
सदस्य सचिव
साधिकार समिति
मध्यप्रदेश जल संसाधन विभाग
भोपाल, दिनांक 11 सितंबर, 2013

पुनः पत्र क्र०/सावि.स-5-39/सक-375/2013/31/70

प्रतिलिपि:-

1. प्रमुख सचिव, मध्यप्रदेश जल संसाधन विभाग, मन्त्रालय, भोपाल
2. प्रमुख सचिव, मध्यप्रदेश शासन, नगरीय प्रशासन एवं विकास विभाग, मन्त्रालय, भोपाल
3. प्रमुख अभियंता, जल संसाधन विभाग, मध्यप्रदेश भोपाल
4. कलेक्टर, जिला बुरहानपुर, मध्यप्रदेश
5. आयुक्त, नगर पालिका निगम, बुरहानपुर
6. कार्यपालन यंत्री, जल संसाधन समिति बुरहानपुर की ओर सूचना एवं आवश्यक कार्रवाई हेतु प्रेषित।

(एस.के.खरे) 11
सदस्य सचिव
साधिकार समिति
मध्यप्रदेश जल संसाधन विभाग

आबलिप्त मुख्य अभियंता, नर्मदा साप्ती कछार,
जल संसाधन विभाग, इन्दौर-462001 (X)8
प्रारण क्रमांक 41.79
दिनांक 16/9/13
ब्लॉक क्र. 409 - चौथी मंजिल, जल संसाधन मंडल

Appendix 4: Water test report

ANALYSIS REPORT FOR
WATER / WASTE WATER SAMPLE

Sample ID:49798 - Analysis Completion:09/11/2015

Project/Action Plans / LAB Inward : 5723

M.P. Pollution Control Board, Indore
Scheme No. 78, C-11, Plot-2
Aaranya, Vijay Nagar, Indore
Indore
Tele: 0731- 4035618

TEST REPORT

Test Report No. : 5723

Date: 09/11/2015

1. Name of the Customer : M/S. Adroit Water Projects (p) Ltd. - 65245
 2. Address : Anicut Location - source Tapti River, Burhanpur
 Burhanpur, Taluka : Burhanpur, District : Burhanpur, GIDC : Not In SIDC
 3. Nature of Sample : REP-Representative, (Insp Type : PAR-Party Sample)
 4. Sample Collected By & Analysed By : K.R. RAJGURU & SWETA SAHU, CHM
 5. Quantity of Sample Received : 1.0lit
 6. Code No. of the Sample : 49798
 7. Date & Time of Collection & Inwarding : 02/11/2015, (0900 to 0900) & 03/11/2015
 8. Date of Start & Completion of Analysis : 05/11/2015 & 09/11/2015
 9. Sampling Point : Anicut location - Tapti River
 10. Flow Details (Remarks) :
 11. Mode of Disposal :
 12. Ultimate Receiving Body :
 13. Temperature on Collection : & pH Range on pH Strip :
 14. Carboys Nos for : Anicut & Color & Appearance :
 15. Water Consumption & W.W.G (KLPD) : Ind : 0.000, Dom : 0.000 & Ind : 0.000, Dom : 0.000

Sr	Parameter	Unit	Test Method	Range of Testing	Result
1	pH	pH Units	IS:3025 (Part-11)-1983	0.5-13.5	8.24
2	Colour	Pl.Co.Sc.	IS:3025 (Part-4)-1983 (Pt-Co.Method)	2-99 Co.Pl. Unit	01
3	Turbidity	N.T.U.	Nephelometric Method (2130B APHA Std. Methods 22nd ed.)	1-1000 N.T.U.	3.0
4	Nitrite	mg/l	(4500-NO ₂ -B APHA Standard method 22nd ed.)	0.01-5 mg/l	NDL
5	Nitrate	mg/l	4500-NO ₃ -E APHA Standard methods 21 st ed.)	0.01-100.0 mg/l	0.93
6	Alkalinity as CaCO ₃	mg/l	(2320 B APHA Standard method 22nd ed.)	1-5000mg/l	200
7	Total Hardness as CaCO ₃	mg/l	(2340 C APHA standard method 22nd ed.)	2-1000mg/l	168
8	Chloride	mg/l	(4500 Cl-B APHA Standard methods 22nd ed.)	5-100mg/l	27.22
9	Sulphate	mg/l	APHA(22nd ed.)4500 SO ₄ E	1-400mg/l	1.01
10	Total coliform	MPN/100 ml	9221-B APHA std. method 22nd ed.	1.8-1600MPN/100ml	NA
11	Fluoride	mg/l	(4500_F_C APHA standard methods 22nd ed.)	0.1-10 mg/l	1.01
12	Iron	mg/l	(3111 B APHA Standard methods 22nd ed.)	0.02-150mg/l	3.26
13	Manganese	mg/l	(3500-mn B APHA Standard methods 22nd ed.)	0.0258-5.927mg/l	0.001
14	Calcium Hardness as CaCO ₃	Mg/Lts	(3500-Ca B APHA standard method 22nd ed.)	5-10000mg/l	132

Laboratory Remarks : Sample not collected by Regional Lab., MPPCB, Indore staff. Analysed on Payment basis. By:1169-lab_1169 Dt: 09/11/2015

Report issued on payment basis

D.K.WAGELA,C.C

(Dr. D. K. Wagela)
 Authorised Signatory (NABL)
 Regional Lab.

M.P. Pollution Control Board, Indore

Field Observation :

Note :



- * - These parameters are covered under the scope of NABL.
- The results refer only to the tested samples and applicable parameters. Endorsement of products is neither inferred nor implied.
- Samples will be destroyed after 10 days from the date of issue of test report unless otherwise specified.
- This report is not to be reproduced wholly or in part or used in any advertising media without the permission of the Board in writing.
- The Board is not responsible for the authenticity for the samples not collected by the Board's officials.
- Total liability of our laboratory is limited to the invoiced amount. Any dispute arising out of this report is subject to Madhya Pradesh Jurisdiction only.
- Permissible Limits: as per Schedule VI of EPA Rules, 1986 as amended by Second and Third amendment 1993 for Effluents
- Physicochemical and microbiological parameters, Std. Methods for Water and Waste Water- 22nd Edition by APHA.
- Bioassay test (for toxicity) -IS-6582-Part-2-2001: Reaffirmed 2007.

N I C

10/11/2015

Appendix: 5

Photographs & List of Participants during Consultations

Ward No. 01		
1	Mr K.D Patel	
2	Mr Ashish Bhagat	
3	Mr Shekh	
4	Mr Govind	
5	Mr Vijay	
6	Smt Leela	
7	Smt Amita	
8	Smt Madhura	
9	Smt Richa	
10	Smt Ujwal	
11	Smt sureja	
12	Smt Sant mani	
13	Smt Supadi	
14	Smt Madhuri	
Ward No. 04		
1	Mr Kishor	
2	Mr Dilip	
3	Mr Mukesh	
4	Mr Bhupendra	
5	Mr Hemendra	
6	Mr Bala ji	
7	Mr Jai singh	
8	Mr Bhagban Das	
9	Mr Suresh	
10	Mr Gajanand raman lal	
11	Mr Panna lal	
12	Smt Kamal	
13	Smt Sangita	
14	Smt Duarka Bai	

Ward No. 05		
1	Mr Manoj	
2	Mr Anil	
3	Mr Aanish	
4	Mr Sumit	
5	Mr Sadik Bhai	
6	Mr Rahul	
7	Smt Sardha Bai	
8	Smt Usha Bai	
9	Smt Sumitra Bai	
10	Smt Padhma Bai	
11	Smt Irsad Bai	
12	Smt Archana Bai	
13	Smt Sadhana Bai	
14	Smt Neela Bai	
15	Smt Sushila Bai	

16	Smt Simta Bai	
17	Smt Anura Bai	
18	Smt Sabana Khan	
19	Smt Sanjita Bano	
Ward No. 13		
1	Mr Saleem Khan	
2	Mr Firoj Khan	
3	Mr Mo. Kashim	
4	Mr Sekh Rafik	
5	Mr Sayad Hajji	
6	Mr Aamid	
7	Mr Aakhtar	
8	Mr Mo. Saleem	
9	Mr sayad khalim	
10	Mr Sahadatt meer	
11	Mr Sekh Imam	
12	Mr Ijjaj	
13	Mr Aslam	
14	Mr Rafeek	
15	Mr Rafik Bhai	
16	Smt Ruksana	
17	Smt Aabib Sabu	
18	Smt Sakina Bano	
19	Smt Wahida Khan	
Ward No. 15		
1	Mr Gulam	
2	Mr Mo. Sameer	
3	Mr Sekh Aajeej	
4	Mr Iftkar	
5	Mr Mo. Arif	
6	Mr Vasim	
7	Mr Sonu	
8	Mr Sakhir	
9	Mr Mo. Aayub	
10	Mr Mo. Inush	
11	Mr Sekh Manubar	
12	Mr Rafik	
13	Mr Faruk Aahemad	
14	Mr Saddam	
15	Mr Iliyash	
16	Mr Sekh Sadik	
17	Mr Mo. Sagir	
18	Smt Firoza B	
19	Smt Fatima B	
20	Smt Aavida B	
Ward No. 17		
1	Mr Santosh	
2	Mr Omprakash	
3	Mr Deepak	
4	Mr Jeetu	
5	Mr Asohk	
6	Mr Rajesh	

7	Mr Ravindra	
8	Smt Heeru Bai	
9	Smt Radha Bai	
10	Smt Heeru Bai	
11	Smt Tara Bai	
12	Smt Moutan Bai	
13	Smt Champa Bai	
14	Smt Aashiya Bano	
15	Smt Pramila	


Ward No. 24

1	Mr Aneesh	
2	Mr Remadh Khan	
3	Mr Sekh Majid	
4	Mr Akhlad	
5	Mr Aaslam	
6	Mr Sekh Jakir	
7	Mr Mo. Yusuf	
8	Mr Abdul Saleem	
9	Mr Sayad Nadim	
10	Mr Sahenamaj Kaji	
11	Mr Naim Ahemad	
12	Mr Gulam Husen	
13	Mr Majid Bhai	
14	Mr Hakim	
15	Mr Sameer	
16	Mr Sayad peer Baba	
17	Mr Sayad Alwar	
18	Mr A. Javed	
19	Mr Rafik Ahemad	
20	Mr Mo. Faijaan	
21	Mr Vasim	
22	Mr Mo. Aanish	

Ward No. 34

1	Mr Akeel	
2	Mr Gulam	
3	Mr S M Tarik	
4	Mr Mo. Aavid	
5	Mr Tajodin	
6	Mr Mo. Ajgar	
7	Mr Bashim Khan	
8	Mr Sayad Khan	
9	Mr Imran	
10	Mr Mo. Aayaz	
11	Mr Faim Akhtar	
12	Mr Sohil Khan	
13	Mr Mo. Aamin	
14	Mr Sakir Ahemad	
15	Mr Umer	

Ward No. 38

1	Mr Chintaman Mahajan	
2	Mr Bhagwan yuvraj Pavar	
3	Mr Vishnu Mahajan	
4	Mr Manoj	

5	Mr Dinesh	
6	Mr Kushal	
7	Mr Omkar	
8	Mr Ramdash	
9	Mr Hukamchandra	
10	Mr Omkar Ragunath	
11	Mr Bhogilal	
12	Mr Dinesh	
13	Mr Pradeep singh	
14	Mr Dipak	
15	Mr Ganesh	
16	Mr Shiva ji	
Ward No. 41		
1	Mr Vinod Rao	
2	Smt Suneeta	
3	Smt Rakhi	
4	Smt Sarila	
5	Smt Hina	
6	Smt Jaishri	
7	Smt Kusum	
8	Smt Salini	
9	Smt Asha	
Ward No. 44		
1	Mr Vithak	
2	Mr Vasant	
3	Mr Vivek	
4	Mr Vijai	
5	Mr Devlal	
6	Mr Toshib	
7	Mr Pavan	
8	Mr Sohil	
9	Mr Pravin	
10	Smt ChandrBhaga	
11	Smt Kalpna	
12	Smt Chandrabhaga	
13	Smt Hina Khan	
14	Smt Lakhmi	
15	Smt Sekh Subhan	
16	Smt Ruksana	
17	Smt Lata Bai	

Ward No. 48		
1	Mr Amer yadav	
2	Mr Asharam shagole	
3	Mr Jagdish malviya	
4	Mr Hari dagru	
5	Mr Yuvraj	
6	Mr Vithal vashepur	
7	Mr Ramesh voraje	
8	Mr Vashim khan	
9	Mr Santosh marker	
10	Mr Wala thakur	
11	Smt Meera Bai	
12	Smt Famida Khan	
13	Smt Neetu malviya	
14	Smt Suman Bai	
15	Smt Sufiya	
16	Smt Mangala Bai	
17	Smt Sindhu	
18	Smt Kalavati	
19	Smt Chandrakala	
20	Smt Heera Bai	
21	Smt Seru Bai	
22	Smt Kamla Bai	
23	Smt Manorama Gour	
24	Smt Aabran Bai	
25	Smt Uma Bai	
26	Smt Joity	
27	Smt Sangita Bai	
28	Smt Bashu Katare	
29	Smt Neeta	
30	Smt Nirmala	
31	Smt Indra	
32	Smt Anwari B	
33	Smt Kusum Bai	
34	Smt Suman Bai	
35	Smt Samanda Bai	
36	Smt Kamal bai	
37	Smt Kamal Bai	
38	Smt Sundha Bai	
39	Smt Sushila Bai	
40	Smt Mamta Bai	
41	Smt Premlata Bai	
42	Smt Marulam B	
43	Smt Jaishri	
44	Smt Rukmani	
45	Smt Munna B	
46	Smt Rahisha B	

सामुहिक परिचय		सामुहिक परिचय																																																							
(शेड्ड विभाग एवं उपविभागीय कार्यालय) दिनांक 23/05/16, शहर _____ समारंभ : A सेक्टर हाईप्रेस (उपविभाग : 4/1 (सिटी उपविभाग)) विभाग : <u>बुरहानपुर</u>		कोड : 91, शहर : <u>बुरहानपुर</u> , उपविभाग : <u>सिटी</u> दिनांक : 23/05/16, शहर : _____, उपविभाग : <u>सिटी</u> 1. सीटी/उपविभाग का विवरण : _____																																																							
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सांख्यिक परिवर्त		सांख्यिक परिवर्त	
(विक विभाग एवं जलविद्युत विभाग)		(विक विभाग एवं जलविद्युत विभाग)	
दिनांक २५/०५/१६		दिनांक २५/०५/१६	
स्थान : उमरीय उड्डाउड्डा		स्थान : उमरीय उड्डाउड्डा	
विभाग : उमरीय उड्डाउड्डा		विभाग : उमरीय उड्डाउड्डा	
वर्गिक के अनुसार	वर्गिक के अनुसार	वर्गिक के अनुसार	वर्गिक के अनुसार
क्र.सं.	नाम	वर्गिक	वर्गिक
१	मोहन-मोहन	मोहन	मोहन
२	मोहन-मोहन	मोहन	मोहन
३	मोहन-मोहन	मोहन	मोहन
४	मोहन-मोहन	मोहन	मोहन
५	मोहन-मोहन	मोहन	मोहन
६	मोहन-मोहन	मोहन	मोहन
७	मोहन-मोहन	मोहन	मोहन
८	मोहन-मोहन	मोहन	मोहन
९	मोहन-मोहन	मोहन	मोहन
१०	मोहन-मोहन	मोहन	मोहन
११	मोहन-मोहन	मोहन	मोहन
१२	मोहन-मोहन	मोहन	मोहन
१३	मोहन-मोहन	मोहन	मोहन
१४	मोहन-मोहन	मोहन	मोहन
१५	मोहन-मोहन	मोहन	मोहन
१६	मोहन-मोहन	मोहन	मोहन
१७	मोहन-मोहन	मोहन	मोहन

१. वी.पी.सी. के अनुसार

२. वी.पी.सी. के अनुसार

३. वी.पी.सी. के अनुसार

४. वी.पी.सी. के अनुसार

५. वी.पी.सी. के अनुसार

६. वी.पी.सी. के अनुसार

७. वी.पी.सी. के अनुसार

८. वी.पी.सी. के अनुसार

९. वी.पी.सी. के अनुसार

१०. वी.पी.सी. के अनुसार

११. वी.पी.सी. के अनुसार

१२. वी.पी.सी. के अनुसार

१३. वी.पी.सी. के अनुसार

१४. वी.पी.सी. के अनुसार

१५. वी.पी.सी. के अनुसार

१६. वी.पी.सी. के अनुसार

१७. वी.पी.सी. के अनुसार

[illegible]

<p style="text-align: center;">सामुहिक परिचय</p> <p style="text-align: center;">ग्राम विकास एवं उद्योगिक विकास</p> <p style="text-align: center;">विभाग: ग्रामीण विकास 11 PM</p> <p>प्रमाण: निम्नलिखित मंत्रालय में 22.6.2014</p> <p>स्थान: गुलामपुर</p> <p>ग्रामीणों के प्रस्ताव ग्रामीणों के प्रस्ताव</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>क्र.सं.</th> <th>ग्राम</th> <th>प्रस्ताव</th> </tr> </thead> <tbody> <tr><td>1</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>2</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>3</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>4</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>5</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>6</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>7</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>8</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>9</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>10</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>11</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>12</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>13</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>14</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>15</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>16</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> <tr><td>17</td><td>गुलामपुर</td><td>विभाग में प्रस्ताव</td></tr> </tbody> </table> <p style="text-align: right;">प्रमाणित किया जाता है</p>	क्र.सं.	ग्राम	प्रस्ताव	1	गुलामपुर	विभाग में प्रस्ताव	2	गुलामपुर	विभाग में प्रस्ताव	3	गुलामपुर	विभाग में प्रस्ताव	4	गुलामपुर	विभाग में प्रस्ताव	5	गुलामपुर	विभाग में प्रस्ताव	6	गुलामपुर	विभाग में प्रस्ताव	7	गुलामपुर	विभाग में प्रस्ताव	8	गुलामपुर	विभाग में प्रस्ताव	9	गुलामपुर	विभाग में प्रस्ताव	10	गुलामपुर	विभाग में प्रस्ताव	11	गुलामपुर	विभाग में प्रस्ताव	12	गुलामपुर	विभाग में प्रस्ताव	13	गुलामपुर	विभाग में प्रस्ताव	14	गुलामपुर	विभाग में प्रस्ताव	15	गुलामपुर	विभाग में प्रस्ताव	16	गुलामपुर	विभाग में प्रस्ताव	17	गुलामपुर	विभाग में प्रस्ताव	<p style="text-align: center;">सामुहिक परिचय</p> <p>क्र.सं. 11 PM विभाग: ग्रामीण विकास</p> <p>दिनांक: 22/6/14 प्रमाण: 11 PM प्रमाण: 11 PM</p> <p>1. ग्रामीणों के प्रस्ताव</p> <p>2. ग्रामीणों के प्रस्ताव</p> <p>3. ग्रामीणों के प्रस्ताव</p> <p>4. ग्रामीणों के प्रस्ताव</p> <p>5. ग्रामीणों के प्रस्ताव</p> <p>6. ग्रामीणों के प्रस्ताव</p> <p>7. ग्रामीणों के प्रस्ताव</p> <p>8. ग्रामीणों के प्रस्ताव</p> <p>9. ग्रामीणों के प्रस्ताव</p> <p>10. ग्रामीणों के प्रस्ताव</p> <p>11. ग्रामीणों के प्रस्ताव</p> <p>12. ग्रामीणों के प्रस्ताव</p> <p>13. ग्रामीणों के प्रस्ताव</p> <p>14. ग्रामीणों के प्रस्ताव</p> <p>15. ग्रामीणों के प्रस्ताव</p> <p>16. ग्रामीणों के प्रस्ताव</p> <p>17. ग्रामीणों के प्रस्ताव</p>
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सामुहिक परिचय		सामुहिक परिचय	
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संकेत निम्न पृष्ठ संश्लेषित करें

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सांख्यिक परिवर्तन

क्रमांक 100/25/16, स.स.प.

दिनांक 18/05/16, स.स.प.

पृष्ठ सं. 17 (गैर-संशोधित)

विषय: एन.डी.ए.

क्रमांक	विवरण	विवरण
1	श्री. निरंजन शर्मा	
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3	श्री. निरंजन शर्मा	
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सांख्यिक परिवर्तन

क्रमांक 100/25/16, स.स.प.

दिनांक 18/05/16, स.स.प.

पृष्ठ सं. 17 (गैर-संशोधित)

विषय: एन.डी.ए.

1. परिवर्तन का विवरण

1. पृष्ठ सं. 17 (गैर-संशोधित)

2. पृष्ठ सं. 17 (गैर-संशोधित)

3. पृष्ठ सं. 17 (गैर-संशोधित)

2. अनुसूची द्वारा उल्लेखित सभी पृष्ठ प्रत्यक्ष निम्न 18/11 को तारीख 17 में एक ही समय पर उपलब्ध कराए जाएंगे।

3. अनुसूची द्वारा उल्लेखित सभी पृष्ठ प्रत्यक्ष निम्न 18/11 को तारीख 17 में एक ही समय पर उपलब्ध कराए जाएंगे।

4. अनुसूची द्वारा उल्लेखित सभी पृष्ठ प्रत्यक्ष निम्न 18/11 को तारीख 17 में एक ही समय पर उपलब्ध कराए जाएंगे।

<p style="text-align: center;">सामुहिक परिचय</p> <p style="text-align: center;">(सर्वेक्षण विभाग एवं जलविभागीय विभाग)</p> <p style="text-align: center;">दिनांक <u>15/07/16</u> समय <u>3:30 PM</u></p> <p>स्थान : <u>Burhanpur</u> ब्लॉक : <u>01</u></p> <p>पिन : <u>471001</u></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>समिति के सदस्य</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>क्र.सं.</th> <th>नाम</th> <th>पता</th> </tr> </thead> <tbody> <tr><td>1</td><td>मोहन</td><td>डोबरा</td></tr> <tr><td>2</td><td>...</td><td>...</td></tr> <tr><td>3</td><td>...</td><td>...</td></tr> <tr><td>4</td><td>...</td><td>...</td></tr> <tr><td>5</td><td>...</td><td>...</td></tr> <tr><td>6</td><td>...</td><td>...</td></tr> <tr><td>7</td><td>...</td><td>...</td></tr> <tr><td>8</td><td>...</td><td>...</td></tr> <tr><td>9</td><td>...</td><td>...</td></tr> <tr><td>10</td><td>...</td><td>...</td></tr> <tr><td>11</td><td>...</td><td>...</td></tr> <tr><td>12</td><td>...</td><td>...</td></tr> <tr><td>13</td><td>...</td><td>...</td></tr> <tr><td>14</td><td>...</td><td>...</td></tr> <tr><td>15</td><td>...</td><td>...</td></tr> <tr><td>16</td><td>...</td><td>...</td></tr> <tr><td>17</td><td>...</td><td>...</td></tr> <tr><td>18</td><td>...</td><td>...</td></tr> <tr><td>19</td><td>...</td><td>...</td></tr> <tr><td>20</td><td>...</td><td>...</td></tr> </tbody> </table> </div> <div style="width: 45%;"> <p>अतिथियों के सदस्य</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>क्र.सं.</th> <th>नाम</th> <th>पता</th> </tr> </thead> <tbody> <tr><td>1</td><td>...</td><td>...</td></tr> <tr><td>2</td><td>...</td><td>...</td></tr> <tr><td>3</td><td>...</td><td>...</td></tr> <tr><td>4</td><td>...</td><td>...</td></tr> <tr><td>5</td><td>...</td><td>...</td></tr> <tr><td>6</td><td>...</td><td>...</td></tr> <tr><td>7</td><td>...</td><td>...</td></tr> <tr><td>8</td><td>...</td><td>...</td></tr> <tr><td>9</td><td>...</td><td>...</td></tr> <tr><td>10</td><td>...</td><td>...</td></tr> <tr><td>11</td><td>...</td><td>...</td></tr> <tr><td>12</td><td>...</td><td>...</td></tr> <tr><td>13</td><td>...</td><td>...</td></tr> <tr><td>14</td><td>...</td><td>...</td></tr> <tr><td>15</td><td>...</td><td>...</td></tr> <tr><td>16</td><td>...</td><td>...</td></tr> <tr><td>17</td><td>...</td><td>...</td></tr> <tr><td>18</td><td>...</td><td>...</td></tr> <tr><td>19</td><td>...</td><td>...</td></tr> <tr><td>20</td><td>...</td><td>...</td></tr> </tbody> </table> </div> </div>	क्र.सं.	नाम	पता	1	मोहन	डोबरा	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	क्र.सं.	नाम	पता	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	<p style="text-align: center;">सामुहिक परिचय</p> <p>ना. <u>01</u> स्थान <u>Burhanpur</u> ब्लॉक <u>01</u> समय <u>3:30 PM</u></p> <p>पिन <u>471001</u> स्थान <u>Burhanpur</u></p> <p>1. सौजन्य का विवरण</p> <p>2. सौ. / सौजन्य के लिए धन</p> <p>3. सौ. / सौजन्य के लिए धन</p> <p>4. सौ. / सौजन्य के लिए धन</p> <p>5. सौ. / सौजन्य के लिए धन</p> <p>6. सौ. / सौजन्य के लिए धन</p> <p>7. सौ. / सौजन्य के लिए धन</p> <p>8. सौ. / सौजन्य के लिए धन</p> <p>9. सौ. / सौजन्य के लिए धन</p> <p>10. सौ. / सौजन्य के लिए धन</p> <p>11. सौ. / सौजन्य के लिए धन</p> <p>12. सौ. / सौजन्य के लिए धन</p> <p>13. सौ. / सौजन्य के लिए धन</p> <p>14. सौ. / सौजन्य के लिए धन</p> <p>15. सौ. / सौजन्य के लिए धन</p> <p>16. सौ. / सौजन्य के लिए धन</p> <p>17. सौ. / सौजन्य के लिए धन</p> <p>18. सौ. / सौजन्य के लिए धन</p> <p>19. सौ. / सौजन्य के लिए धन</p> <p>20. सौ. / सौजन्य के लिए धन</p>
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सांख्यिक परिवर्तन

(किस विभाग का सांख्यिकी प्रभाग)

दिनांक [दिनांक] दि. सन् _____

प्रकार : नये कार्य सं. 75 (प्रमाणित)

दिनांक 24/01/75

वर्गीकृत प्रमाण **प्रमाणित में प्रमाण**

क्रमांक	विवरण	प्रमाण
1	आ. वि. वि. वि.	
2	आ. वि. वि. वि.	
3	आ. वि. वि. वि.	
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14	आ. वि. वि. वि.	
15	आ. वि. वि. वि.	
16	आ. वि. वि. वि.	
17	आ. वि. वि. वि.	

प्रमाणित में प्रमाण

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Appendix 6

**List of Tribal Communities in State of Madhya Pradesh as Provided by Ministry of Tribal Affairs,
Government of India**

1. Agariya
2. Andh
3. Baiga
4. Bhaina
5. Bharia Bhumia, Bhuinhar Bhumia, Bhumiya, Bharia, Paliha, Pando
6. Bhattra
7. Bhil, Bhilala, Barela, Patelia
8. Bhil Mina
9. Bhunjia
10. Biar, Biyar
11. Binjhwar
12. Birhul, Birhor
13. Damor, Damaria
14. Dhanwar
15. Gadaba, Gadba
16. Gond; Arakh, Arrakh, Agaria, Asur, Badi Maria, Bada Maria, Bhatola, Bhimma, Bhuta, Koilabhuta, Koliabhuti, Bhar, Bisonhorn Maria, Chota Maria, Dandami Maria, Dhuru, Dhurwa, Dhoba, Dhulia, Dorla, Gaiki, Gatta, Gatti, Gaita, Gond Gowari, Hill Maria, Kandra, Kalanga, Khatola, Koitar, Koya, Khirwar, Khirwara, Kucha Maria, Kuchaki Maria, Madia, Maria, Mana, Mannewar, Moghya, Mogia, Monghya, Mudia, Muria, Nagarchi, Nagwanshi, Ojha, Raj, Sonjhari Jhareka, Thatia, Thotya, Wade Maria, Vade Maria, Daroi
17. Halba, Halbi
18. Kamar
19. Karku
20. Kavar, Kanwar, Kaur, Cherwa, Rathia, Tanwar, Chattri
21. (Omitted)
22. Khairwar, Kondar
23. Kharia
24. Kondh, Khond, Kandh
25. Kol
26. Kolam

27. Korku, Bopchi, Mouasi, Nihal, Nahul Bondhi, Bondeya
28. Korwa, Kodaku
29. Majhi
30. Majhwar
31. Mawasi
32. Omitted
33. Munda
34. Nagesia, Nagasia
35. Oraon, Dhanka, Dhangad
36. Panika [in (i) Chhatarpur, Panna, Rewa, Satna, Shahdol, Umaria, Sidhi and Tikamgarh districts, and (ii) Sevda and Datia tehsils of Datia district]
37. Pao
38. Pardhan, Pathari, Saroti
39. Omitted
40. Pardhi, Bahelia, Bahellia, Chita Pardhi, Langoli Pardhi, Phans Pardhi, Shikari, Takankar, Takia [In (i) Chhindwara, Mandla, Dindori and Seoni districts, (ii) Baihar Tahsil of Balaghat District, (iii) Betul, Bhainsdehi and Shahpur tahsils of Betul district, (iv) Patan tahsil and Sihora and Majholi blocks of Jabalpur district, (v) Katni (Murwara) and Vijaya Raghogarh tahsils and Bahoriband and Dhmerkheda blocks of Katni district, (vi) Hoshangabad, Babai, Sohagpur, Pipariya and Bankhedi tahsils and Kesla block of Hoshangabad district, (vii) Narsinghpur district, and (viii) Harsud Tahsil of Khandwa district]
41. Parja
42. Sahariya, Saharia, Seharla, Sehria, Sosia, Sor
43. Saonta, Saunta
44. Saur
45. Sawar, Sawara
46. Sonr

Appendix 7.

List of Schedule Areas in Madhya Pradesh as Specified by the Scheduled Areas under the fifth Schedule of Indian Constitutions

1. Jhabua district
2. Mandla district
3. Dindori district
4. Barwani district
5. Sardarpur, Dhar, Kukshi, Dharampuri, Gandhwani and Manawar tahsils in Dhar district
6. Bhagwanpura, Segaoon, Bhikangaon, Jhirniya, Burhanpur and Meheshwar tahsils in Burhanpur (West Nimar) district
7. Khalwa Tribal Development Block of Harsud tahsil and Khaknar Tribal Development Block of Khaknar tahsil in Khandwa (East Nimar) district
8. Sailana and Bajna tahsils in Ratlam district
9. Betul tahsil (excluding Betul Development Block) and Bhainsdehi and Shahpur tahsils in Betul district
10. Lakhanadone, Ghansaur and Kurai tahsils in Seoni district
11. Baihar tahsil in Balaghat district
12. Kesla Tribal Development Block of Itarsi tahsil in Hoshangabad district
13. Pushparajgarh, Anuppur, Barhi, Kotma, Jaitpur, Sohagpur and Jaisinghnagar tahsils of Shahdol district
14. Pali Tribal Development Block in Pali tahsil of Umaria district
15. Kusmi Tribal Development Block in Kusmi tahsil of Sidhi district
16. Karahal Tribal Development Block in Karahal tahsil of Sheopur district
17. Tamia and Jamai tahsils, patwari circle Nos. 10 to 12 and 16 to 19, villages Siregaon Khurd and Kirwari in patwari circle no. 09, villages Mainawari and Gaulie Parasia of patwari circle No. 13 in Parasia tahsil, village Bamhani of Patwari circle No. 25 in Chhindwara tahsil, Harai Tribal Development Block and patwari circle Nos. 28 to 36, 41, 43, 44 and 45B in Amarwara tahsil Bichhua tahsil and patwari circle Nos. 05, 08, 09, 10, 11 and 14 in Saunsar tahsil, Patwari circle Nos. 01 to 11 and 13 to 26, and patwari circle no. 12 (excluding village Bhuli), village Nandpur of patwari circle No. 27, villages Nikanth and Dhawdikhapa of patwari circle no 28 in Pandurna tahsil of Chhindwara district.

Appendix 8. Disclosure and consultation of ESA



कार्यालय नगर पालिक निगम, बुरहानपुर (म.प्र.)

विषय :- म.प्र. अर्बन डेवलपमेंट कम्पनी के तत्वावधान में विश्व बैंक पोषित, बुरहानपुर नगर की तापी जलआवर्धन योजना हेतु सामाजिक एवं पर्यावरण पर संगोष्ठी का आयोजन ।

दिनांक : 11.07.2016

समय : दोपहर 03:00 बजे से

स्थान : नगर निगम कार्यालय, प्रथम तल, टेरेस हॉल, बुरहानपुर

उपस्थिति पत्रक

क्र.	नाम	पदनाम	मोबाईल नं.	हस्ताक्षर
1	Abdulla Ansari			
2	D.C. Naga Advani	MDA	9827035567	
3	अरुण शर्मा		9826078165	
4	वसंत मोहं गोवामोहं	गोवामोहं	94240-17272	
5	Main Ansari		9753054433	
6	महेश जैन	जनजातीय विकास	945086572	
7	अनुमेश च. दु. शर्मा	दु. शर्मा	8103205196	
8	Rajendra Joshi	Burhan	9425085711	
9	H.S. Hoshale	Amber, Bur	9424024949	
10	Nayam Kapadiya	Kapadiya	9425083956	
11	डॉ. लोकराज शर्मा		7477241586	
12	रमानीया लखार	रमानीया	9712352267	
13	विनीत विजय	विनीत	9009658044	
14	शिवराम पाटी	श. पाटी	9826632767	
15	रमेश ल. धन	र. धन	9827383081	
16	अशोक दुमेल	अ. दुमेल	9833684913	
17	सौमिली लक्ष्मीन मर्चेंट	सौमिली	9479600672	
18	Mahmood Merchant	मोहं मर्चेंट	9407456052	
19	CA. Prashant Shroff	CA Prashant	9826026539	
20	यशवन्त वाढे	अधिकारी	9827281718	
21	प्रभाकर शेलोने	प्र. शेलोने	8878606223	
22	महेश्वरी ल. अ. शर्मा	म. शर्मा	9926428822	
23	दिनेश लाल शर्मा	दीनेश लाल	9424025454	
24	जी. पी. विल्लोर	अ. विल्लोर	9826068712	
25	विठ्ठल शर्मा	वि. शर्मा	9526057243	

कार्यालय नगर पालिक निगम, बुरहानपुर (म.प्र.)

विषय :- म.प्र. अर्बन डेवलपमेंट कम्पनी के तत्वावधान में विश्व बैंक पोषित, बुरहानपुर नगर की तापी जलआवधन योजना हेतु सामाजिक एवं पर्यावरण पर संगोष्ठी का आयोजन ।

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उपस्थिति प्रत्रक

क्र.	नाम	पदनाम	मोबाईल नं	हस्ताक्षर
26	डा. राजेश कुमार			
27	गोपीचंद गोपाल		9893023277	गोपीचंद
28	Rahul R. Joshi	Contractor	9826067511	RJ
29	उत्तामकुमार (काका)		9753367368	U.K.
30	ABRAH SINGH		9907507461	AS
31	Santa Bhagat		9770660900	Santa
32	राजेश अशोक माधु		9827331566	R.A.
33	मो. अमली प्रमोद गड.		9827724277	Amali
34	Pavani Chavhan	Engineer	9827216231	Pavani
35	सुधीरचंद		942244735	S.D.
36	संजय राजेंद्र		9425086885	S.J.
37	शंकरा पटेल	डॉक्टर	9425086015	Shankar
38	अंकुश मीन	प्राध्यापक	8309118149	Ankur
39	नारिता मोरे पांडे	पांडे	8871615753	Narita
40	सुभाष माधु		9827275753	S.B.
41	अमरनाथ मुरगान		9826451413	A.M.
42	Prateek Phand	Lawyer	7415614582	Prateek
43	विश्वेश्वर	Lawyer	7694080916	Vishveshwar
44	Rahul Murchh	Lawyer	9630528861	Rahul
45	MANINDER CHAWLA	Lawyer	9826330405	Maninder
46	Sankar	Lawyer	9039550422	Sankar
47				
48	Mehar Chand	Ex-Parishad	9425343320	Mehar
49				
50				

Gururam

कार्यालय नगर पालिक निगम, बुरहानपुर (म.प्र.)

विषय :- म.प्र. अर्बन डेवलपमेन्ट कम्पनी के तत्वावधान में विश्व बैंक पोषित, बुरहानपुर नगर की तापती जलआवर्धन योजना हेतु सामाजिक एवं पर्यावरण पर संगोष्ठी का आयोजन ।

दिनांक : 11.07.2016

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उपस्थिति पत्रक

क्र.	नाम	पदनाम	मोबाईल नं.	हस्ताक्षर
51	विजय पांडे	वि. इंज.	9302225118	
52	Durgesh Bhale	Civil Engg.	9575239560	
53	Vijay patil	C.I.E	9993391210	
54	मोहन लाल खन्ना	म.प्र. निगम	9826024490	
55	निर्मल दासिनाथ माटी	सामाजिक कार्यकर्ता	9644790261	
56	मधुकर खन्ना	सामाजिक कार्यकर्ता	9993920398	
57	जोसे जॉनी	सामाजिक कार्यकर्ता	9407458743	
58	अमर उमर	सामाजिक कार्यकर्ता	9827216244	
59	महेश मंगवाल	पूर्व पार्षद	9827755303	
60	पु. मा. व. वार्ड		9755034041	
61	शैलेश दीक्षित		7389899688	
62			9303377072	
63				
64	Rohul Burde	Dukewadi	9098784448	
65	Naveen Aade	Sirpur	9406813400	
66	Santosh Bhalu	M.C.C.	9477282614	
67	Subhash Bani	Social Worker	9484557506	
68	Waman mote	M.H.O. 33	9009359655	
69	Shankar Putale	Social Worker	9926763665	
70	HARISH MORE	L.O.C.	9479715859	
71	Manohar modake		9455909141	
72	अमर	म.प्र. निगम	9277808225	
73	मधुकर खन्ना			
74	मोहन लाल खन्ना	म.प्र. निगम	9926703522	
75				

कार्यालय नगर पालिक निगम, बुरहानपुर (म.प्र.)

विषय :- म.प्र. अर्बन डेवलपमेन्ट कम्पनी के तत्वावधान में विश्व बैंक पोषित, बुरहानपुर नगर की तापी जलआवर्धन योजना हेतु सामाजिक एवं पर्यावरण पर संगोष्ठी का आयोजन ।

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उपस्थिति पत्रक

क्र.	नाम	पदनाम	मोबाईल नं.	हस्ताक्षर
76	रामिद			
77				
78				
79	शेर मजूम			
80	Pareez Akbar Ansari			
81	शुम्बर			
82				
83	रुबील खान			
84	Dinesh Shah			
85	मोहम्मद शहीद	contact	8109021868	किता
86	Shehzad Noor	contact	9826340858	
87	Kal-Baig	contact	9407451331	काल
88	अमर कश्यप		902822278	अमर
89	हरमन शर्मा		9039727773	
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