

## **Augmentation and Strengthening of drinking Water Supply Scheme for Hazaribagh Municipal Corporation in the State of Jharkhand**

### **Justification for Location the Project in Forest Land**

Jharkhand Urban Infrastructure Development Company (JUIDCO) Limited has prepared a scheme to augment and strengthening of drinking water supply system for Hazaribagh Municipal Corporation area. By implementing this scheme potable water will be supplied (as per CPHEEO norms) in Hazaribagh Nagar Parishad command area and thereby quality of life will be improved for the residents of Hazaribagh town.

Hazaribagh is the district head quarter of Hazaribagh District in Indian state of Jharkhand. It is also the divisional headquarters of North Chhotanagpur division. Hazaribagh is situated on NH 33, Total population of Hazaribagh district is 1,734,495 as per census 2011. The corporation area of the town spreads for approximately 4,302 sq. km.

Present sources of raw water are from Charwa Reservoir (located approximately 6.00 km from Hazaribagh Town) and Jheel (located within the heart of the town). Existing system is not sufficient enough in terms of population as well as distribution to cater the present population. Existing plants are old and require immediate attention to ensure estimated design production including quality of potable water. A major part of the pipeline have completed its full life cycle. Apart from this Hazaribagh Town is also facing water shortage due to rapid urbanization and industrialization as many of the industries, residential and commercial establishment are largely depending on ground water. Existing drinking water supply facility such as source, Water Treatment Plants, distribution system, transmission mains, bulk water storage, water supply pumps, zonal reservoir etc. are not equipped to meet the present and future demand.

Considering the above fact, a new scheme has been prepared to fulfil the objective of supplying potable water to each and every house hold (i.e. 100% service coverage) of Hazaribagh Town at an affordable cost by selecting a sustainable source and by implementing a reliable & environment friendly process.

A detailed study was carried out and it has been observed that only sustainable source of Raw Water in the nearby area is "Konar Reservoir" on the river "Konar" which is approximately 47.00 Km away from the Hazaribagh Town. It has been also mentioned in the study report that, it (Konar Reservoir) would be able to meet the additional demand of Hazaribagh town, without affecting the other utility of the reservoir i.e. irrigation and flood control. Therefore, the same has been selected to lift required quantity of raw water. Water shall be collected / lifted by installing suitable design capacity pump and motor set inside intake structure.

From "Konar Reservoir" raw water will be transported through pipe lines of various sizes to the proposed location of Water Treatment Plant at Rola. Transportation of water will be carried out through a combined system of pumping main and gravity main. In order to transport raw water from "Konar Reservoir" to proposed Water Treatment Plant through multistage pumping system, three numbers ground reservoirs along with pumping station will be constructed. These pumping stations to be located at a fair distance and appropriate height to minimize the water hammer effect during pumping / transportation. The identified land fulfils the above criteria of design.

The proposed improvement envisages diversion of 7.90334 Ha of forest land at various locations and 4.0074 of Non-forest land.

The diversion of forest area has been limited to the minimum requirement for construction of conventional WTP design and techniques. Other alternatives were examined in consultation with Water Resources Department, Government of Jharkhand and found that no other better alternatives are available for collecting Raw Water (to meet the demand of Hazaribagh Town for next 30 years) are available in the nearby area. Intake Well, approach road, Raw Water Pipe line, booster pumping station along with reservoir and conventional Water Treatment Plant have been designed in such a way that requirement forest land is bare minimum.



  
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