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| Sector | Urban Development |
| Sub - sector | Water Supply and Sewerage |
| Profile No. | UD-06 |
| Project Title | Improvement of Water Supply and Sewerage Systems at Amreli town |

Project Description

Amreli is a potential business hub for Diamond polishing and trading centre in Saurashtra region of Gujarat. Amreli town, having population of about 1 lakh, is having status of Municipality and is spread over about 27 hectares.

The town is facing severe water shortage. The town also faces a problem of dilapidated sewerage system which needs complete up-gradation. Hence, there is a need to upgrade the urban infrastructure - water supply and sewerage system in the town.

The project would comply with the Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) Guidelines 2005. The project is proposed to be implemented on the basis of Public Private Participation.

Water supply

The proposed water supply project is suggested in the view of following benefits:

- 100% population coverage will get 100 lpcd of continuous water supply.
- Potable water.
- Improvement in ground water table.
- Reduction in system losses.
- Elimination of unaccounted water losses.

Present Status of water supply

The present supply to the town is to the tune of 9 -10 MLD. The supply systems and their individual supply quantities are as follows:

| Sr. | System particulars | State of the system | Supply quantity |
|-----|---|---|-------------------|
| 1 | Khodiyar Dam | Discontinued due to heavy overdue since 2005. | None |
| 2 | Mahi – Parihej WSS | Functioning | 4 – 5 MLD |
| 3 | Varudi WSS | Re-instated to supplement supplies | 3 MLD |
| 4 | Ground water sources (Tarvadi and others) | Functioning | 2 MLD |
| | Total Supplies | | 9 – 10 MLD |

Water supply to the town for 2 hours per day through clear sump and ESR as per requirements

Issues in water supply

Much of the problem of water supply to the town is attributed to the de-functioning of Khodiyar Dam, in the wake of earth quake in 2001. Narmada Main Canal (NMC) - Mahi – Parihej pipeline is made available at Tarvadi head works of Amreli town.

The current revenue stream of Amreli Municipality from water supply and other taxes is poor as compared to the actual Operation & Maintenance costs. About 27 – 30 % of the actual cost incurred on the existing infrastructure is being recovered by the Amreli Municipality. Thus, apart from the Upgradation of the existing infrastructure, there is need for institutional restructuring and capacity building.

Water demand for the town on the basis of demographic trends is as follows:

| Sr. | Year | Population | Water Demand (MLD) |
|-----|------|------------|--------------------|
| 1 | 2006 | 1,04,300 | 18.17 |
| 2 | 2021 | 1,37,700 | 24.35 |
| 3 | 2035 | 1,80,700 | 32.08 |

Project Components

A total of 18.48 MLD will be made available under NMC – Mahi – Parihej pipeline up to the year 2021. About 6 to 7 MLD water will be made available from local sources under phase – I of the project, while 10.35 MLD water will be collected from Khodiyar dam under phase – II of the project. Total cost of the project is estimated at INR 117.514 million.

The project also anticipates private sector participation in carrying out Operation and maintenance and main head works.

Estimates of operation and maintenance cost of the project are:

| Sr. | Year | O & M cost (INR million) |
|-----|------|--------------------------|
| 1 | 2006 | 9.693 |
| 2 | 2021 | 11.629 |
| 3 | 2036 | 13.565 |

Financial Indicators

The stake holders and their contribution in the project are as follows:

1. Urban Local Body – 10%
2. State Government – 10%
3. Government of India – 80%

Sewerage system

Sewerage system for the town has been designed based on the parameters like population density, commercial activities and growth trends. The demand of water has been estimated at the rate of 140 litres per capita per day (lpcd).

The project involves design and execution of all the major components of sewerage system, which will cover the town and its peripheral areas.

The project is designed for a period of 25 years from 2006 to 2031 and would be executed in two phases:

- Phase 1 – Period 2006 to 2021
- Phase 2 – Period 2021 to 2031

The total sewerage flow is assumed to be 80% of the total water demand with 5% of this as infiltration.

Issues

The booked expenditures available for the sewerage system show that the municipality is spending very less on the improvement of the sewerage system of the town.

The following areas have been found to have priority for improvement:

1. Increasing carrying capacities of existing distribution systems.
2. Increasing extent of internal distribution network.
3. Augmenting storage capacities of run off water as well as purchased water.
4. Identification, better management of potential sources for water supply.
5. Institutional restructuring.

Project Cost

The break up of project cost for sewage system is as given below. The total cost of the sewage system is estimated at INR 152.61 million (US \$ 3.39 million)

| Sr. | Item of work | Cost (INR million) |
|-----|--|--------------------|
| 1 | Sewerage collection system | 110.59 |
| 2 | Civil works | 3.57 |
| 3 | Electromechanical works | 7.2 |
| 4 | Sewage treatment plant (10 MLD + additional 4 MLD capacity) | 18.00 |
| 5 | Contingencies | 5.02 |
| 6 | Lump sum cost for obtaining electrical connection and sewer cleaning machinery | 3.00 |
| 7 | Cost of land | 1.03 |
| | Total | 148.41 |

Source: Feedback Ventures

Agencies to be contacted

Gujarat Urban Development Company Limited

Gujarat Infrastructure Development Board (GIDB)

Industrial Extension Bureau

Mott MacDonald India