

Water supply project for Bharuch Nagar Palika area and surrounding area

General

Bharuch as it is an ancient city known as a 'Bhrugukutch'. Also it has established a religiously important river Narmada as per 'SKUND' mythology geographically located on the western coast of the country and was having a great potential for marine trade. It is the oldest harbor and city on the western coast of India and also located on the N.H.E between Baroda and Bombay. It is also connected with the western main line railway. Bharuch district is well known for agricultural products like 'TURDAL', 'BAJARA' and cotton etc. Recent past three decades. It has developed great industrial potential of all types of products, i.e. chemical, petrochemicals, pharmaceuticals, fertilizers, Engineering products also. As per its old culture of marine trade, marine activities started again by putting up new giant industries near the sea coastal area of Bharuch and marine harbours also cropped up by chemical terminals and some agricultural products like Coconuts, Salt etc. Other parts of the district like Zagadia, Panoli, Vilayat, Dahej etc. have staid development with industrial potential along with the Ankleshwar industrial zone, which is one of the biggest industrial zones. This has given continuous impact on increasing of population, either by migrating or floating population or for short duration.

Bharuch is being a city of district and district place and of such industries and continuous growing of industrial potential has resulted ultimately establishment of many townships around the city as well as within the city also and add to the population resultant of addition of population has also increase the demand of water.

Water is a finite renewable natural source. It is critical to survival of all living beings and also essential for maintaining of bio-chemistry and quality of environment. No agro economic or industrial development is possible without water. Such development can only be done by human beings only. The developments have also increase of population as stated above for survival of all the water is must. Thus, water has multiple roles and is backbone of the human development.

It is expected that other big well known industries are putting up their units in the district along with GNFC, NCPL, GACL, IPCL, Well Span, Birla Copper other big chemical and pharmaceutical industries which may lead to increase of population two or three times more in coming future.

Water Supply Project for Bharuch by Surface Water

The present potable supply of water is done by local authority partly from supply of GNFC and partly through bore wells. The water of bore wells is now a days

decrease in pot ability by contamination by increase in saline intrusion due to increase of bore wells, lowering of under ground water table and continuous pluming for agricultural and drinking purpose.

This has given compulsion to thought to meet the permanent demand of potable water through surface water only.

As stated above non development of district would not have create the demand but due to potential industrial growth and development has open a golden corridor to the district in two ways namely by land and by marine and forced to increase of population with migrating or flotting. Which has considerable increase in water demand. With this reason this project report for water supply to Bharuch through surface water source is prepared.

Various observations and considering permanent supply it is found that the water can be await either by from one of the cema TAPI River and from Narmada branch canal.

Looking to the aspect from Tapi Canal which is about 12 K.M. away and also across the river Narmada. This will be costly and the pipe line or other Conveying mean has to the river which will be an additional financial burdon and as well as maintained also. Also the canal has to be modify to meet the additional supply and demand of water from the take off point can also lead to a more cost. Hence economically it is more expensive.

Now the canal net works from Sardar Sarover Dam located on River Narmada is passing the district with main and branch canal to feed the requirement of North Gujarat and saurashtra region. A central is passing a distance of about 5 K.M. from the city limit can meet the demand of area water can be collected to the destination location either by open Canal or a pipe line of required diameter.

Existing Water Supply Scheme of area

The present supply of water is done partly through the bore wells located at various places of city and partly through the supply from GNFC pipe line. The continuous drywall of water from bore wells as well as saline ingression due to near coastal region and alluvial soil started toiling and ground water qualitatively some blackish and salinity and an initiatively not sufficient. Nagar palika, despite this has bored the wells to yield the demand. This is not accounted for yield as the above experience shours the changes of characteristic of water. At present 8 Nos. of bore wells are drilled at various places of Bharcuch with 3 MLD supply of water.

Other source i.e. from GNFC water supply project, which is supplying 5 to 6 MLD of water supply. Looking to the present demand to 26 MLD there is a shortage of 20 MLD

Population

The population of Bharuch city as per census of 2001, is 1,57,000. Other souls surrounding the city impacted on increase of various industrial growth and business, are not accounted. The growth per decade as per observation is about 21% to 23% and per year growth rate is about 2% to 5%. Means that the demand offer 15 years will be almost double.

Existing Storage Capacity

To meet the requirement of water, the local authority has put underground storage and elevated storage reservoir/tanks to coter the meet, which is about 200 lacks liter i.e. 20 MLC.

Proposed Water Supply Scheme

The detail of existing water supply senior and looking the future requirement a preliminary project report is prepared. The source is considered from the canal toping of Amleshwar branch or from nearest canal and to bring the water to the raw water reservoir located land near by the city, acquired with an area of 30 to 40 Hectors of land with area open canal filtration plant, filtered storage reservoir pump house, substation, and main distributaries lines/connections with other storage area roads and , material storage etc.

Design Data

1. Ultimate requirement 40 MLD
2. Considering Canal closer period for fifteen days the demand will be 80 MLD
3. Water will be taken from take point, with consideration that the level will permitted the gravity flow and with R.C.C. pipe as assumed as a gravity main (details will be worked out after approval) but present for 1200 dia R.C.C. pipe taken with 3.00 K.M. length
4. Land require 40 Hectors
5. Canal remodeling as per authority, if require.
6. Raw water storage reservoir

- Canal closing 15 days
 - Net storage require
 - Total storage with 25% losses
7. Land for filter water storage, filter plant, pump house, staff quarters, roads etc. All ready which is to acquire if not with local authority.

Cost Estimate

The approximate expenditure is prepared on the basis of design data as above.

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| a. | Land cost 40 Hectors | Rs. 40 lacs approx. |
| b. | Rout survey and site survey | Rs. 1 lacs approx. |
| c. | Canal take i.e. as per irrigation authority of government | Rs. 1.5 lacs approx. |
| d. | Intake rout from canal to raw water reservoir | |
| e. | Raw water reservoir
300 ML x 10000 | Rs. |
| f. | i. Filtration plant | |
| | ii. Filter water reservoir
20 ML x 1000000 | Rs. |
| | iii Pump house | Rs. 15 lacs approx. |
| | iv Pumping Machinery | Rs. 50 lacs approx. |
| | v. Internal all other connections | Rs. 25 lacs approx. |
| g. | Pipe line distributaries mains to storage at other areas. Approx 5 K.M. length Rs. 20000 | Rs. 100 lacs |
| h. | Roads staff quarters. | Rs. 70 lacs |
| i. | Electrification etc. | Rs. |

Add 10% Admi.	Rs..
And Sup. Charges	Rs.
	=====
	Rs.
Say	Rs.

Conclusion

The above report and cost estimate is worked at to arrive and the estimated value of the project based on the preliminary survey. Details with cost estimate will be worked out after approval of the project.

Bharuch is established on Banks of River Narmada, a largest perennial River of western India. In absence of proper waste water collection system it finds its way through existing storm water drains in to river Narmada due to controlled discharge from Narmada dam in to river worsen the situation due to ingress of tidal water deep in to river Narmada. Because of Bharuch is location advantage on Golden corridor of Gujarat an attractive location with good infrastructure facility for industrial investment and its near vicinity to well developed industry estate like Ankleshwar, Jhagadia, Panoli & fast developing Dahej area the population growth is relatively high.

Hence some system to arrest the flow of waste water collecting system in Bharuch is urgently required.

.... Recycling this waste water & sewage not only the water At Narmada River will improve but will also irrigate large stretch of fertile lands on Banks of River Narmada downstream of Bharuch affected because of sailings in River Narmada.