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Research Papers

Drinking Water Supply Schemes For Solapur Town Development, Problems In Future

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ABSTRACT

Solapur is an historical place dating back to 90 BC. Solapur is one of the imperative town place in Maharashtra state. It is all around connected by rail and street with different urban areas, and is arranged 400 km. SE of Mumbai. It is spread around between 17 0 36' to 17 0 42' N scope and 75 0 50' to 75 0 58' E longitude. (SOI top sheet 47 0/14. It is the seventh biggest city in the state by populace size heading towards 10 lakh, to be a metropolitan. Solapur is under the dry to semi parched climatic condition. It gets sporadic, inconsistent inadequate precipitation, with yearly normal of around 500 mm to 700 mm It is incorporated into downpour shadow zone and dry season inclined area of some portion of south focal India. Solapur encounters moderately higher temperature consistently, coming to most astounding up to 45 0 - 47 0 in April-May months, and has relative dampness fluctuating between 20 to90%. Topographically the region is secured by Deccan basalt of the mainland tholeiitic area of India having Cretaceous - Eocene age. Two unmistakable magma streams are perceived alongside different stream units. The thickness of the different stream units in the magma streams fluctuate horizontally and vertically throughout the city zone. Because of which the ground water accessibility change. Heterogeneity in the conveyance of break example, weathering mantle and so on has obstructed the development of groundwater, which has brought about partition of water pockets of distinctive measurements with variable stockpiling. There is no coherence in groundwater stream for the most part at more profound profundities. Reviving of upper shallow aquifer amid monsoon,, happens. As the stock/stockpiling of water stops after utilize, the groundwater accessibility is in question, uniquely at profundities.

Keywords: *historical place, Heterogeneity, groundwater.*

INTRODUCTION:

History of Physical Growth Solapur Municipality was built up a first August 1852 .Municipal points of confinement were initially characterized in the year 1865 with 13 peth as and populace of 30819 (1851-52 registration).In 1871 Municipal cutoff points were characterized correctly as Shelginala on north and GIP railroad on the west. .As per 1872 evaluation there were 15 peth as in the town and the aggregate populace was 54,744. Municipality pulverized the fortress divider. Till 1880 Siddheshwar Tank-crude water was just wellspring of water alongside 20 private wells. In the year 1881 water was supplied through channels to the town from Ekrukh tank. After this the town grew quickly with modern advancement. In 1913, Railway station, and in 1927 piece of Shelgi town range

were added to as far as possible to make all out territory of around 1844 hects. (4557 sections of land). In 1938 a territory of around 363 hects (900 sections of land) from south and West Side was incorporated into as far as possible. In 1955 the points of confinement of civil gathering was then 23.23 sq. kms. Due to increment in income and populace, with the metropolitan region of 23.23 sq. kms, and population of around 3,37,583 according to 1961 registration.

EXTENSION OF CIVIL COMPANY LIMITS :

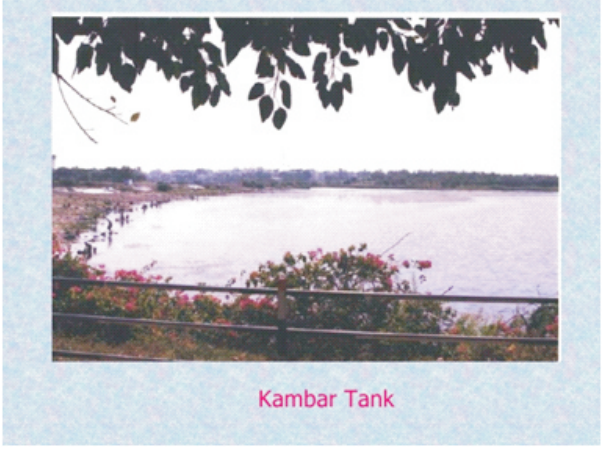
1 st expansion On 1/7/1979 expansion of little range of 2.30 sq. kms, of Hotgi and Vijapur streets for execution of Integrated Urban Development plan to the zone, brought about aggregate region of 25.53 sq. kms with populace of 3,98,361 according to 1971 statistics

2 nd expansion - From 1/4/1989 with the extra zone of 7.5 sq. kms, the new aggregate territory got to be 33.03 sq. kms with the number of inhabitants in 5,11,103 according to 1981 registration.

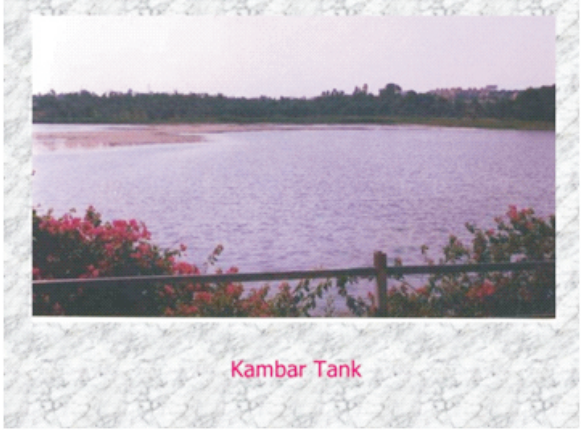
3 rd augmentation – according to 1991 registration populaces was 6,20,846 with zone of 33.03 sq. kms. To minimize and defeat the challenges emerge because of high thickness and over-burden on open utility administrations in the old city limits and to raise the income and so forth the encompassing range of 13 towns which was around 145.54 sq. kms. was incorporated into as far as possible to bring about aggregate region of 178.57 sq kms. Alongside populace of 88,471 of new augmented zone the aggregate populace came to the tune of 7,09,317 according to 1991 registration.

KAMBAR TANK

Kambar Talao is a great bird watching center with the many migratory birds found flocking here in winter. This tank was first filled with white and pink lotuses; but with the SMC cleaning it, the face of the tank was brought down. However there are still lotuses blooming there now to add to the beauty of the place.



Kambar Tank



EKRUKH TANK

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Ekrukh Tank

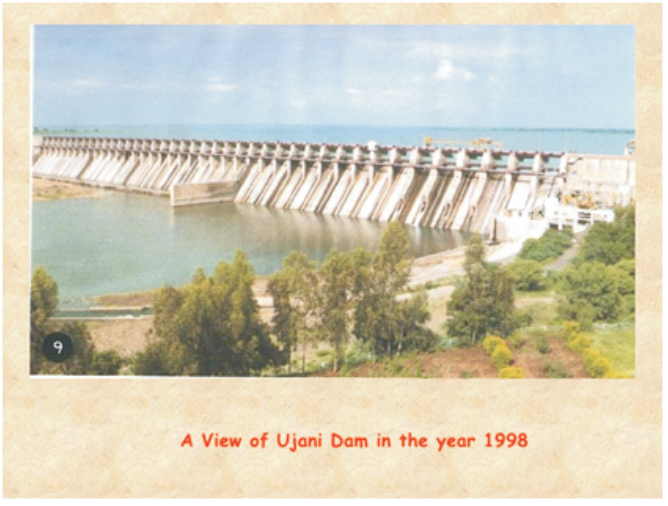
M.B.R. at Kondi

M.B.R. at Kondi

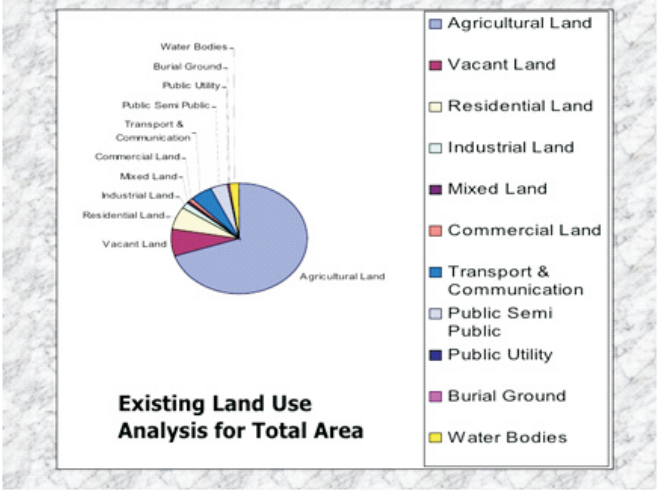
A View of Ujani Dam in the year 1998:

Ujjani Dam, also known as Bhima Dam or Bhima Irrigation Project, on the Bhima River, a tributary of the Krishna River, is an earthfill cum Masonry gravity dam located near Ujjani village of Madha Taluk in Solapur district of the state of Maharashtra in India.

The Bhima River, which originates in Bhimashankar of the Western Ghats, and forms the Bhima Valley with its tributary rivers and streams, has twenty-two dams built on it of which the Ujjani Dam is the terminal dam on the river and is the largest in the valley that intercepts a catchment area of 14,858 km2 (5,737 sq mi) (which includes a free catchment of 9,766 km2 (3,771 sq mi)).[1][4][5][6] The construction of the dam project including the canal system on both banks was started in 1969 at an initial estimated cost of Rs 400 million and when completed in June 1980 the cost incurred was of the order of Rs 3295.85 million



Existing Land Use Analysis for Total Area



GROUNDWATER SOURCE:

Groundwater as source Solapur Municipal Corporation is one of the principle body in the Maharashtra State which has effectively propelled the extraction of ground water through bore wells for people in general. For the most part the drag wells are supplied with the hand pumps and not very many are with electric pump. However private bore wells are for the most part having electric pump on expansive scale for pumping of ground water. When all is said in done hand pump working is regular and in summer they didn't work because of exhaustion of water table. Be that as it may they get revived amid rainstorm. According to record of civil organization first bore well in Solapur city – in 1975 for 150' profundity Upto 1977 - 60 drills wells were penetrated predominantly in old city territory. Upto 2001 - 2195 bore wells were bored including augmented territory. In Solapur city zone by electrical resistivity technique, three diverse conceivable aquifer zones are explored. The first is shallow aquifer met at the profundity of around 10 to 20 mts, or 20 to 40 mts. The second one is at more profound profundities meeting at either 60 to 80mts. then again 80 to 100mts. The third one is at still more profound profundity of 120 to130 mts. on the other hand 140 to150 mts

Of the event that these the shallow aquifer is found to get revived amid general storm, while the other two at profundities are ordinarily not energized and are likely stock waters. Lessening in permeation amount and there by away because of urbanization, metallic and tarring of streets, solid structures, solidifying and pressing of grounds and so forth brought about exhaustion in ground water accessibility. Prior in 1980 and 1990's drag wells of around 100' profundity were adequate all in all for a little unit of 5 to 6 individuals from family, with day by day necessity of around 500 To 600 liters for each day. However with current circumstances, bores are yielding less water or no water or irregularly stock

water if is accessible through feeble permeation, does not full fill the necessities. However a few bores are with profundity of 300' to 500', which are attempted in distinctive zones by couple of people, temporary workers, and industrialist are yielding great waters. Be that as it may it is found that these are having brief length of time and a transitory stage. The achievement rate of good yield of bores for generally long length of time is around 4 to 6 %. However just 5% exhausts waters are viewed as usable for drinking reason according to Standards i.e.95% are just usable waters. However the individual householders/fiat proprietors, social orders businesses, business focuses and so forth have bored bore wells in their private zone as standby or as customary source basically in broadened territories where company channel water is not accessible.

DEVELOPMENT FOR WATER RESOURCES:

In twelfth century, halfway found excellent tank was developed by Shri. Sidheshwar for the general population and by the general population, which has served drinking water assets for long time alongside 20 private burrowed wells till 1881. Water was made accessible for developing populace by the then region powers from a noteworthy watering system tank-Ekrukh or Hipparaga tank, assembled by Britisher's in 1859-1869 on Adila waterway. Arranged around 6 kms. North wards of the city. On sixth Nov. 1879 the water works (channel plant/treatment plant at Bhavani peth,) began working and supplied treated faucet water for the residents almost 27 MLD by putting away in two stores. Water supply was expanded with water supply from Hotgi tank arranged close town Hotgi, around 12 kms. South east of Solapur, inherent 1944 on Hotgi nala. This crude water is utilized by about town populaces and businesses. According to 1962 records through Ekrukh tank (channel water) was 30.9 MLD and through Hotgi tank (crude water) 2.7 MLD

In 1858 Municipality manufactured a little tank Kambar/Sambhaji tank-2 kms. S-SE of Solapur City. However, it was caught by then military Administration and is of no utilization as source.Organization can charge vigorously for additional and abundance utilization of water than the recommended or institutionalized necessity for a family/people and so forth. The recyclation of utilized water/waste water from commercial ventures, seepages channel plant and so forth should be actualized. A genuine need is to instruct the general population for appropriate, restrained and least utilization of water. The channel water use must be confined. They should be prepared for utilizing crude water, re-flowed water. Getting water from Alamatti Dam in Bijapur District of Karnataka might be thought as one of the choice in extraordinary cases or as perpetual source. Bury interfacing Bhima and Krishna streams at upper ranges in Sahyadri Ghat, if considered, might satisfy the required states of flooding of Ujani Dam consistently as ghat area gets general and high rain fall.

FUTURE AND SUGGESTION:

1.Additional pipeline similar to present one with double capacity is at most essencial and is an urgent need to implement the scheme at earliest.
2.two separate pipe lines-onereserved for treatment and another for general use as raw water will help in development of the city.
3.Supply of raw water to the different villages placed on lateral sides may be thought off to cater their needs as well to divide the incurring cost. further small units of treatments plants may be constructed in a collective group of villages.
4. The importance of additional pipeline is that there will be no evaporation loss or percolation loss of water which is presently occurring when water is supplied through canals and stream and river beds.
5. supply of filtered water in restricted and required capacity for drinking purpose along with supply of raw water separately for general utility may be thought off. Similarly number of small to middle capacity centers for purification/filtration of used water may be installed at suitable places.
6. New elevated reservoirs in different areas should come up at earliest to cater the needs of the growing population. The reservoirs position must be sector wise and may also be interconnected.

CONCLUSION:

Water was made accessible for developing population by the then region powers from a noteworthy watering system tank-Ekrukh or Hipparaga tank, assembled by Britishers in 1859-1869 on Adila waterway.

Ujjani Dam, also known as Bhima Dam or Bhima Irrigation Project, on the Bhima River, a tributary of the Krishna River, is an earthfill cum Masonry gravity dam located near Ujjani village of Madha Taluk in Solapur district of the state of Maharashtra in India.

However private bore wells are for the most part having electric pump on expansive scale for pumping of ground water.

However with current circumstances, bores are yielding less water or no water or irregularly stock water if is accessible through feeble permeation, does not full fill the necessities.

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