1. What is the exact problem that your project has addressed?

- India is a developing country in which majority of population lives in rural and suburban area where infrastructure facility is not available as per the standard of city and Metros.
- The proposed project of entitled by UPGRADATION OF INFRASTRUCTURE AND FUTURE DEVELOPMENT PLAN OF A VISNAGAR CITY aims at study of existing infrastructure like Water supply, Drainage, Internal roads of the city, Storm water drainage and Solid Waste Management of the city.
- In first phase, we have taken UPGRADATION OF EXISTING WATER SUPPLY SYSTEM OF THE CITY OF VISNAGAR.

2. Proposed outcomes/impact of your innovation?

- Visnagar is located at 23.42^0 N 72.73^0 E. It has an average elevation of 120 meters (404 feet). At present there are nine ESRs and 13 tube wells, out of which eight tube wells are being utilized for pumping water while on five tube wells are pumping machinery is to be installed and put into commission in due course, these tube wells will augment the water demand of town. Provision of 19.81 MLD water is made in the Dharoi dam based project which was approved by GWSSB covering 378 villages and five urban center of area.
- Some of the water supply lines were laid in preindependent era when the population density of city was very low. Now population has been increased.
- After making to detailed survey of entire city, we feel that we should provide air valve at different location as per requirement by analyzing the L-section of different lines. Also, determine capacity of ESR and Sump and compare same with existing.

3. Who have made contribution towards this project and specific detail?

Principal	: - **Dr. K. G. MEHTA**
	Merchant Engineering College, Basna
Hod	: - **Mr. AMRUTBHAI M. PATEL**
Project Coordinator	: - **Mr. AKASH V. MODI**
Chief Officer	: - **Mr. PRAKASHBHAI G. RAYCHANDANI**
	Visnagar Nagarpalika, Visnagar
Helping hands	: - Mr. HARDIK B. PATEL
	Mr. KIRAN P. PATEL
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	Mr. CHETAN S. PRAJAPATI
	Mr. ASHUTOSH D. PATEL
	Ms. RASHMI D. MODH

Ms. POONAM K. PRAJAPATI
Ms. MONIKA S. PATEL

And our **79** final year CIVIL Engineering students of Merchant Engineering College, Basna, Mehsana, North Gujarat.

4. Abstract of innovation-

- At present there is a wide gap in infrastructure facility available in Urban, Suburban and rural areas of our country.
- Majority of the population of our country still stays in rural and suburban areas, where infrastructure facility is not available as per the standards. Our proposed project is on **UPGRADATION OF INFRASTRUCTURES AND FUTURE DEVELOPMENT PLAN OF VISNAGAR CITY.** Initially we made detailed Chaining, Ranging and Leveling of entire city. We have established TBM at different places and determine the slope of entire city. We draw L-section of main branch and sub branch line with help of **AUTO CAD.** Our aim is that to upgrade the facilities of water supply in Visnagar city. Present need of water supply in Visnagar city is 33.32 MLD. On the basis of available and prospective population of **DIFFERENT HEADWORKS,** we are estimating population up to year 2041. We have verified capacity of existing **ELEVATED STORAGE RESERVOIR (ESR)** and find out whether there is any deficiency in capacity of ESR or not. Also checked capacity of sump; studied Total water requirement of city and availability of sources.

5. For research work to develop into a commercially viable product/ service, what would be the resources required?

- This is the project work which would be widely useful to people of VISNAGAR city or in other words it can be said as community service project.
- Being an academic institute, we don't consider commercial viable product/service in terms of monitory gain, but its intangible benefits will being prosperity of people of Visnagar city.
- As such institute did not charge single N.P. from the VISNAGAR NAGARPALIKA for survey of entire city, Preparing L-section of all the main lines and branches with providing technical solution for problematic areas where adequate quantity of water is not available to the household in the city.

6. Do you think this research should continue further? If Yes, why and with objective? If No, why?

- Yes, Visnagar is a developing city. 100% area of the city is not covered by municipal water supply, adequate drainage; storm water drainage facility is required to be created.
- Some of the roads are to be repaired/reconstructed according to necessity and solid waste management is prime requirement of the city. So, work is required to be continued for above area.

7. **Have you filled any patent for your research work?**
    - No.
8. **Have you published any research paper in referred journal?**
    - No.
9. **Any other information about your research you would like to share?**
    - India is developing country. Our honorable **Prime Minister Mr. NARENDRABHAI MODI** is insisting about **CLEAN INDIA**. But unfortunately majority of the city are not having adequate drainage system.
    - With the help of this survey, we would be able to provide adequate and sustainable drainage system in entire Visnagar city. So, that problem of cleanliness will be resolved.
10. **How do you feel that your innovation/project can "Create more value /benefit from less resource/cost/effort for more and More People"?**
    - We are academicians about **79 students** of final year civil engineering and **14 faculty members** worked very hard without any extra remuneration for the people of Visnagar city.
    - Students will learn problem related to field such as how to prepare scheme of Water supply, Drainage, Roads which they have to face in future and local body would be extensively benefited without hiring any consultant or paying any extra fees for this work.
    - Entire population of Visnagar city will be greatly benefited by this project.
    - If such projects are taken up by all engineering colleges in country, We would be able to prepare project plan for each city and villages of our country.