

# Assessment of Water Supply Management For PMC Area

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**Abstract-** One of the problems for water supply systems with intermittent supply is the peak flow produced at some hours of the day, which is usually much larger than that in a system with continuous supply. The main consequence is the reduction of pressure and flow at the ends or highest points of the system network. This in turn generates inequity in water supply and complaints from users. To reduce the peak flow, some sectors of the system must be assigned a different supply schedule. As a result, the supply curve is modified and the peak flow is reduced. This reorganization seeks some optimal allocation schedule and must be based on various quantitative and qualitative technical criteria. Irregular timing of Garbage collector van is also big issues in metropolitan city. To reduce this kind of problems proper scheduling is required. In order to achieve the above mentioned objectives and solve the structural and operational problems listed above, PMC has decided to undertake a radical and comprehensive approach which clearly defined the main concepts to be developed in the present project this solution does not seek perpetuating intermittent water supply. On the contrary, this methodology can be a useful tool in gradual transition processes from intermittent to continuous supply.

**Keywords-** Water supply schedule, Optimization.

## I. INTRODUCTION

Water supply to different wards or areas is one of the most important activities for the municipal corporations. The current system of water supply is un-useful and can cost a major waste of water as the people don't get the information of water supply is started. The main purpose to design this application is providing an environment where people will know the information about started water supply. In metropolitan cities timing of garbage collector van in different wards are main duty for Municipal Corporation. The necessity of designing this application is that let the people know supply is started and they will be ready to store water and they also known details about garbage collector vans were coming today or not. The disadvantage of current system is that which is irregular and not for certain period of time. A normal user may login and get the all information about water supply

timing and all municipal corporations' updates. This Application will provide user information about their area and a user that who is unknown to that area will get information about water supply, garbage collection van time in this Android Application. As per the growing demands of wireless communication there is enormous new technologies participating to make sophisticated environment for an end user. In a recent survey of International Telecommunication Union (ITU) it was found that the number of mobile phone subscribers exceeds seven billion subscriptions at the end of 2014 using more than 10 to 15 Internet utility apps which is more than the entire population of planet.

## A. MAIN PROBLEMS OF PUNE WATER DISTRIBUTION

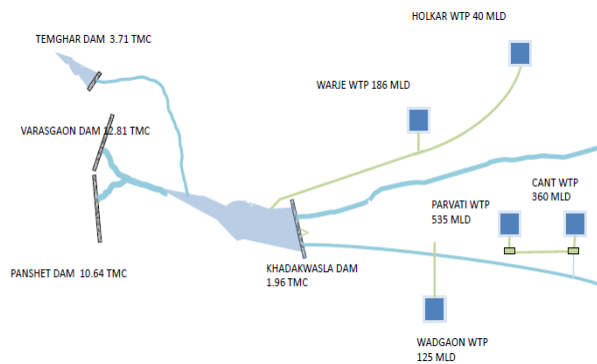
The Pune water supply system is affected by many problems which are due to the fast and chaotic development of Pune and by the consequent need-based development of the water distribution network for keeping the pace of the water demand growth in various parts of the town. This irregular development determined the progressive accumulation of the following problems and deficiencies of the water supply service:

- The marginal parts of the town receive water in insufficient quantity and pressure and distributed over few hours per day. On the contrary some central parts of Pune are benefited by large availability and adequate pressure.
- The water resources have been exploited up to their maximum potential and it will be more difficult to find additional water sources able to meet the water demand if growing with the current level of consumption.
- The system is presently affected by a high level of Non-Revenue Water and water losses largely exceeding the government established target of 15%.
- Over 70% of the consumer connections are not metered and many illegal or unregistered connections are present. The water charges of the un-metered connections are collected through a specific quota

paid with the property taxes. This system does not encourage efficient and rational usage of water which is progressively becoming a scarce resource.

the following existing pump stations and or WTPs

- Vadgaon WTP
- Warje New WTP-180 MLD
- Warje WTP, under construction-200 MLD
- Pune Cantonment -100 MLDWTP
- Holkar WTP
- Rajeev Gandhi Udyan Pump station



**A. Objectives**

The main objectives of the project are:

- To ensure safe and equitable water supply to the entire population in Pune city for the next 30 years,
- To ensure the distribution of the water during the entire day (24x7 modality)
- To reduce the level of water losses and Non-Revenue Water.
- To ensure the technical and economical sustainability of the water supply service.
- The goal of this project is to produce an Social Awareness About water saving Activity and Municipal Corporation application for the Android marketplace. . This application will be serve information one of which is open source, the rest custom made.

**II. PROPOSED SYSTEM**

We propose a system for monitoring the water supply provided in the city. The application is handle by the municipal corporation and it is usable for people who daily surviving peak flow problem. The proposed systems overcome the problems of household women or peoples who don't know the information Research Article Volume 6 Issue No. 11

International Journal of Engineering Science and Computing, November 2016 3462 <http://ijesc.org/> about today's water supply and Also the information about garbage collector. The proposed system also consists of android module which provides option for user to directly complaint to the municipal officer or the corporate of the local area. The proposed system also consists of many application features for daily information about corporation updates. The overall architecture of water supply management and garbage collector management is shown in following diagram

**A. DATA COLLECTED**

- DPR report and methodology of project of pune 24\*7 water supply management
- 3 ZONES service implementation plan i.e. BanerHill,RamnagarLaxminagar ,balewadi

**B. ZONE- BALEWADI**

In order to understand the project of aforesaid nature in large scale with vast scope, it's advisable that a zone has to be taken for studying the entire scope. In this respect, BALEWADI was selected as one of the zones for this package, which covers an area of around 2.8661 sqKms. Also, this particular zone has only two DMA to it. The network is designed for the 2047 year demand for the estimated population of 81827. The water for the entire distribution zone will be supplied by PropoBalewadiJakat Naka which has a Prop capacity of 3 ML.

**Existing Pipeline Network Survey**

Diameter (mm)	Material (Length in meters)				Total Length (meters)
	GI	DI	CI	MS	
100		980	2683		3663
150		3305	2593		5898
200		1433	1572		3005
250		33	0		33
300		2510	2065		4575
<b>Total</b>		<b>8261</b>	<b>8913</b>		<b>17174</b>

Valve Type	No. of valves
Burried Sluice Valve	11
Open Sluice Valve	2
Operational Sluice Valve	3
<b>TOTAL</b>	<b>16</b>

Existing Network summary

DIAMETER (mm)	LENGTH (m)	
	As per DPR	As per L&T survey
100	1806	3663
150	13000	5898
200	5586	3005
250	1938	33
300	3268	4575
400	38	0
450	2620	0
500	54	0
<b>TOTAL</b>	<b>28310</b>	<b>17174</b>



III. OBSERVATIONS

A. THICKNESS TEST

S. No	Site	Material	Diameter (mm)	IS Standard Thickness	Actual Thickness	Avg. Thickness	Remarks
1	Mahavir Park Balewadi	C.I	200	11	11.8	11.7	Pass
					12.1		
					11.3		
2	Shree mart stationery and gifts	C.I	150	10	10.5	10.7	Pass
					10.9		
					10.7		
3	Mahadev temple Balewadigaon	C.I	100	9	9.1	9.1	Pass
					8.8		
					9.5		

Photograph of Thickness Test

1) Mahavir Park Balewadi



2) Shree Mart stationery and gifts

B. HARDNESS TEST

S. No	Site	Material	yyDiameter (mm)	Brinell Hardness Number (HBS)	Average (HBS)	Remarks
1	Mahavir Park Balewadi	C.I	200	130	135	Pass
				135		
				150		
2	Shree mart stationery and gifts	C.I	150	200	178	Pass
				177		
				153		
3	Mahadev temple Balewadigaon	C.I	100	100	113	Pass
				109		
				120		

Photograph of Hardness Test

1) Mahavir Park Balewadi



2) Shree Mart stationery and gifts



#### IV. EXPECTED CONCLUSION

- Urban water supply systems are reeling under the stress of supplying adequate, reliable and safe drinking water.
- Some of the major issues to be addressed to meet consumer demand in an urban water supply system are equitable supply of water at different levels, leakage and energy minimization, pressure and asset management, managed groundwater pumping, etc.
- Industries and the government need to progressively implement water optimization technologies, establish water audit standards, and use a collaborative approach to wade through the water crisis.
- Water-efficient technologies will continue to be developed just like they are already being today, but more importantly, it is the renewed understanding of water as a shared commodity that will help these technologies find acceptance with industry, agriculture and individuals alike.
- Supplying new water services to people requires not only technical skills but also social understanding of the demand of each stakeholder.
- For a water project to be successful, along with technical expertise it is necessary to have proficient social engineering skills as well. Equitable distribution, sustainable development of resources and awareness with respect to conservation are all equally important.
- The journey towards 24x7 water supply in India will be long but first experiences are in place to inspire other cities to enter the twenty-first century with high quality services.

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