SEWER DEVELOPMENT OF VILLAGE (JUNONI)

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Abstract

A village development plan is a written document. It identifies issues of concern to that village. Opportunities, strengths, threats and weaknesses of a village are defined. It also provides practical actions that will result in an improved village. It provides opportunities for resource mobilization. A village plan does three essential things. It provides a VISION of what you would like your village to look like, sets out clear GOALS to achieve that vision, and gives you an ACTION PLAN to reach those goals. The objective of Village Development Plan is to develop the selected village in an integrated manner. This would include economic development, infrastructure development and other aspects of human development i.e., education, health, drinking water supply, sewer etc. Disposal of waste water is a major public health problem in rural areas. Stagnant waste water smells bad and also acts as breeding place for mosquitoes resulting in spread of diseases like dengue, malaria, filaria etc. Proper disposal and also reuse of waste water wherever possible will help in combating diseases as well as meeting water scarcity.

Index Terms: sewer, Junoni, Population.

I. INTRODUCTION

The need for genuine and organized initiatives in the rural wastewater management has been regularly voiced in India. Waste water management is term consisting of collection, transport, processing, recycling or disposal of wastewater, usually produce by human activity.

A practically affordable effort in wastewater management especially in the reuse of wastewater for agriculture purpose in Amarapur village was initiated considering following objective

- To avoid unhygienic and insanitary surrounding
- To avoid Mosquito and foul odour
- To reuse wastewater for irrigation

Purpose of Village Development Planning :

1. To learn the basic need of communities after analyzing their problems with sharp-eyed observations and experiences.
   To identify employment needs, scope of self employment – level of employment and farming system development for higher economic growth and stability with predefined economic indicators.
2. To identify gender wise critical educational, health, and recreation needs with specific social indicators like literacy, education, training and skills, and opportunities for all members of the society cutting across gender, age, caste and religion to evaluate the impact in the future.

In this Paper I am using the PVC pipes as a drainage system for Junoni village which is nearby osmanabad city. For this paper I have taken the help from Grampanchyat.

Background:-

The Junoni in Osmanabad district of Maharashtra is a village having total human population is 2500 in near about 400 households. Current situation in this village there is no provision of drains or sewer. Due to this waste water is comes on the roads and increase the mosquito and foul odour. So for that I have

decided to design the low cost PVC Drainage system and handover to Grampanchyat for future implementation.

Junoni village has lower literacy rate compared to Maharashtra. In 2011, literacy rate of Junoni village was 76.94 % compared to 82.34 % of Maharashtra. In Junoni Male literacy stands at 83.03 % while female literacy rate was 70.00 %.

As per constitution of India and Panchyati Raaj Act, Junoni village is administrated by Sarpanch (Head of Village) who is elected representative of village.

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Work Profile

In Junoni village out of total population, 534 were engaged in work activities. 81.84 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 18.16 % were involved in Marginal activity providing livelihood for less than 6 months. Of 534 workers engaged in Main Work, 111 were cultivators (owner or co-owner) while 227 were Agricultural labourer.

Particulars	Total	Male	Female
Total No. of Houses	329	-	-
Population	1,424	747	677
Child (0-6)	184	87	97
Schedule Caste	324	166	158
Schedule Tribe	17	9	8
Literacy	76.94 %	83.03 %	70.00 %
Total Workers	534	422	112
Main Worker	437	0	0
Marginal Worker	97	0	0

Taluka and District :Osmanabad
State : Maharashtra
Region : Marathwada
Division : Aurangabad
Language : Marathi and Hindi
Time zone: IST (UTC+5:30)
Elevation / Altitude: 679 meters. Above Seal level
Telephone Code / STD Code: 02472
Pin Code: 413501 Post Office Name: Osmanabad

In this project Arithmetic progression method is used from the data given by Grampanchyat.

Year	Population	Increase in population
1980	900	500
1990	1400	400
2000	1800	400
2010	2200	
	Total	**1300**
	Average	**433.33**

$$\mathbf{P_n = P_0 + nX}$$

Where
P_{n-} forecasted population after n decades
P_0-Previous decades population
n- Number of decades
X- Average increase in population

P_{2020}=2200+1 X433.33= 2634
P_{2030}=2634+1 X433.33=3067
So in this project 3100 population is considered.

Design of sewer:-

Area to be served:-6 Hector.
Forecasted population:-3100
Maximum permissible velocity:- 2.4 m/sec.
Rate of water supply:-135litres/day/capita.
From above data
Quantity of water supply = 3100 x 135/(24 x 60x 60)
= 4.84 lit./sec.
Assuming maximum discharge as 1.5 times the average
Q= 1.5 X 4.84
Q= 7.26 lit./sec
Q= 0.00726 cu.m/sec.
Q=AV
A=Q/V
A= 0.00726/2.4
A=0.003025
Diameter of sewer $A= \pi d^2/4$
d^2=0.003025 X 4 / π
d=0.196
d=20 cm

Provide diameter of PVC pipe 20 cm.

Benefits:-

This project is very much appreciated by peoples in Junoni because against open drain system,

close drain system is more useful and due to low maintenance cost this system is economical viable. This system keeps surrounding environment more clean and safe against health hazards. Pipes were buried 60cm below the ground surface so this system is more sustainable than open drain system. Socially this system is more acceptable than any another because house holding using the system had developed participatory approach and developed more capacity of community in respect to economy, relationship and awareness.

- As the system is closed, materials like garbage, road side solid wastes, plastics, building materials etc. will not find access to the system.
- Operation and maintenance becomes easily manageable by Gram Panchayat
- Construction cost is comparably low as cost for surface drain.
- Road space is fully utilized.

Conclusion

Above project is very much economical than the other types of sewers. Because for 6 m length approximately Rs. 1000 is required. 6 m PVC pipe price is near about Rs 500 and remaining 500 for excavation and other miscellaneous. But if we consider the RCC sewers then the cost of work will be more. At the end this is very important that people's participation is necessary during planning, construction and maintenance of structure.

A. References

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