

# STRATEGY ADOPTED BY SURAT MUNICIPAL CORPORATION FOR PROVIDING BETTER DRAINAGE SYSTEM TO CITIZEN OF SURAT CITY

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## Abstract:

Surat Municipal Corporation (SMC) is one of the oldest Municipal Corporation in India. It is well known to its Strategic Management. With the help of appropriate strategy SMC provided better services to the citizens among them Drainage Service is one of the most important service for citizens. This research paper is a Strategic Management of Surat Municipal Corporation which mainly focuses on Strategy adopted by SMC for better Drainage facility provided for citizens of city. In which the following facility are available like SMC provides an efficient sewage system (drainage) facility to the citizens, SMC drainage department provides the necessary infrastructure for disposal of waste water from local and industrial organizations of the city and SMC provides suitable drainage, sewage and storm water dispensing arrangements in all areas of the city, so that the water of sewage does not get filled up. The study is descriptive in Nature and mainly based on primary data. Data has been collected through structured questionnaire and sample is collected from the citizen of all seven zones of SMC. The scope of the study is only restricted to Drainage service of SMC only

## 1. Introduction:-

The drainage department provides the necessary infrastructure to take the waste out of the city's local and industrial establishments to the treatment plant, as well as treatment and disposal properly. The SMC works with the Strategy and Mission to provide a complete sewage system to the whole city. The strategies of the department include planning, formulation, estimation, corporation, execution and management as well as sewage treatment, sewage pumping stations, sewage pumping man, sewage treatment and liquid disposal work etc.

Today an organization cannot survive without strategy. However, sound the objectives of an organization may be, if the strategy is poor it will not be able to feel the fruits of achievement. To compete successfully in today's world organizations need to meet the challenges of a rapidly globalizing, highly competitive and technologically complex environment. SMC is the oldest and richest municipality of India, and by adopt proper strategies it's provide a better services to the citizens and among them one of the most important service is called Drainage Service.

## Review of Literature:-

**Mukesh P. Mathur Dr.** All municipal acts in India provide for functions, powers and responsibilities to be carried out by the municipal government. The Municipal Acts specify 31 obligatory functions and 23 discretionary shall be performed by Urban Local Bodies in India.

**The obligatory functions include:** supply of pure and wholesome water; construction and maintenance of public streets; lighting and watering of public streets; cleaning of public streets, places and sewers; regulation of offensive, dangerous or obnoxious trades and callings or practices; maintenance or support of public hospitals; establishment and maintenance of primary schools; registration of births and deaths; removing obstructions and projections in public streets, bridges and other places; and naming streets and numbering houses etc.

**The discretionary functions include:** laying out of areas; securing or removal of dangerous buildings or places; construction and maintenance of public parks, gardens, libraries, museums, rest houses, leper homes, orphanages and rescue homes for women; and public buildings; planting and maintenance of roadside and other trees; housing for low income groups; conducting surveys; organizing public receptions, public exhibitions, public entertainment; provision of transport facilities with the municipality; promotion of welfare of municipal employees etc.

**Meier Laurence George Richard Miles and Snow**, among others, argue that strategy content is an important influence on organizational performance. Their typology, applied recently to public organizations in the United Kingdom, divides strategic actors into four general types: prospectors, defenders, analyzers, and reactors. This article begins by integrating work on strategy content or strategic management into the O'Toole-Meier formal theory of public management. This study shows that strategy content is a subset of generally accepted management functions in public organizations. The article then proceeds to test the strategic management concepts in a large, multiyear sample of public organizations. The results show that strategy can be separated out from other elements of management for a distinguishable assessment of its impact on organizational performance. Unlike the predictions of Miles and Snow and the empirical findings of Boyne and Walker, however, we find that the defender strategy is the most effective for the primary mission of the organization and that the prospector and reactor strategies work best in regard to the goals of the more politically powerful elements of the organization's environment.

### 3. Research Methodology:-

#### 3.1 Research Design

A research design includes an outline of what the researcher do from research and its operational implication to the final analysis of the data. I used the descriptive research design in this research study.

#### 3.2 Objectives of Study:-

1. To know the perception of citizens as well as zone wise reflection regarding Drainage service provided by SMC.
2. To evaluate zone wise as well as gender wise performance of SMC for providing Drainage service to the citizens.

### 3.3 Nature of Data and Sources of Data

The study is descriptive in Nature and mainly based on primary data. Structured questioners and sample is collected from the citizens of SMC.

### 3.4 Limitations of the study

In this research primary data are use and only for Drainage related service of Surat city so there is some limitation of this method is heredity to in this research work.

- 1) This research work the result may not be applicable to another service of SMC.
- 2) The present study is restricted to information collected about the only Drainage Service provided by SMC.
- 3) In this research study focus only on to the perception of citizen of Surat city regarding Drainage Service provided by SMC.

### 4. STRATEGY ADOPTED BY SURAT MUNICIPAL CORPORATION:-

The drainage department provides the necessary infrastructure to take the waste out of the city's local and industrial establishments to the treatment plant, as well as treatment and disposal properly. The SMC works with the Strategy and Mission to provide a complete sewage system to the whole city. This was as follows.

The strategies of the department include planning, formulation, estimation, corporation, execution and management as well as sewage treatment, sewage pumping stations, sewage

SMC has formulated a major plan for comprehensive sewage treatment (more than 1425 km of sewage treatment and 9 sewage treatment works), which also serves not only domestic and commercial but also for industrial development for the year 2021. All of this developmental waste water is collected. To deliver the treatment of underground sewers and pumping stations and to the treatment of sewage treatment, Gujarat is working for physical and biological treatment to meet the proposed parameters by the Pollution Control Board.

By 2006, 112.27 sq.km. Out of total city area, 92.19% area and 97.10% of current population are covered with sewerage systems. In 2006, the limit of CMC has increased from 112.274 sq.km to 326.515 sq. Km, which has declined from 9% to 47%. However, due to the low population of the extended city area, at the expansion of the city limits, 75% of the population was served by underground sewage treatment.

**Scenario: -**

**Table Scenarios**

<b>Coverage</b>	<b>149.00 sq.km. 74.00 %</b>
<b>Population catered</b>	<b>3.85 million i.e. 91.0 % (As per census 2001) Estimate Present Population catered is 4.40 million</b>

<b>Length of sewer network</b>	<b>&gt;1425 km.</b>
<b>Existing Sewage Pumping Stations</b>	<b>34 Nos</b>

From table clear idea about the scenario of drainage in Surat city. Recently 74% area covered by SMC the length of sewer network is >1425 km. and existing sewage pumping stations is 34 nos.

**Existing Sewage Treatment Plants: -9nos.**

**Table Existing Sewage Treatment Plant**

1	Anjana Sewage Treatment Plant	82.50 MLD capacity
2	Bhesan Sewage Treatment Plant	100.0 MLD capacity
3	Bhatar Sewage Treatment Plant	120.0 MLD capacity
4	Karanj Sewage Treatment Plant	100.0 MLD capacity
5	Singapore Sewage Treatment Plant	100.0 MLD capacity
6	Bamroli Sewage Treatment Plant	100.0 MLD capacity
7	Asarma Sewage Treatment Plant	15.0 MLD capacity
8	Khajod Sewage Treatment Plant	25.0 MLD capacity
9	Variav Sewage Treatment Plant	84.0 MLD capacity

From table indicates the sewage treatment plants and their capacity of Surat city.

At present, 37 ongoing projects are operational by the Drainage Department, while the completed project is 6 in South Zone, 3 in East Zone, 20 in North Zone, 4 in South East, 5 in South West, 6 in West Zone and 1 in all zones. And 10 project to be implemented during the year 2013-2026. The overall area of Surat Municipal Corporation is divided into following six drainage zones which was West Drainage Zone, South East, North, East, South and South West Drainage Zone. There are 34 pumping stations of SMC in the entire city.

**Treatment Plants: -**

**Treatment Plants**

<b>(A) Existing</b>		
(1)	Anjana Sewage Treatment Plant	82.50 MLD capacity
(2)	Bhesan Sewage Treatment Plant	100.00 MLD capacity
(3)	Bhatar Sewage Treatment Plant	120.00 MLD capacity
(4)	Karanj Sewage Treatment Plant	100.00 MLD capacity

(5)	Singapore Sewage Treatment Plant	100.00 MLD capacity
(6)	Bamroli-Vadod Sewage Treatment Plant	100.00 MLD capacity
(7)	Asarma Sewage Treatment Plant	15.00 MLD capacity
(8)	Khajod Sewage Treatment Plant	25.00 MLD capacity
<b>Total</b>		726.5 MLD Capacity
(9)	Variav-Kosad Sewage Treatment Plant	84.00 MLD Capacity
<b>(B) Ongoing STP Projects</b>		
(1)	Dindoli Sewage Treatment Plant	66.00 MLD Capacity
<b>(C) Proposed STP Projects:</b>		
(1)	Bhatar (extension) Sewage Treatment Plant	120.00 MLD Capacity
(2)	Karanj (extension) Sewage Treatment Plant	80.00 MLD Capacity
(3)	Singapore (extension) Sewage Treatment Plant	100.00 MLD Capacity
(4)	Bamroli-Vadod (extension) Sewage Treatment Plant	60.00 MLD Capacity
(5)	Bhesan (extension) Sewage Treatment Plant	70.00 MLD Capacity

(Sources: - <https://www.suratmunicipal.gov.in/Departments/DrainageIntroduction>)

Table gives the clear idea about the treatments plants of Surat city under drainage department and also indicates the capacity of treatment plant and ongoing and proposed STP is also given.

##### 5. Data Analysis and Findings:-

Drainage cell service includes three parameters that are (1) SMC provides an efficient sewage system (drainage) facility to the citizens. (2) The SMC drainage department provides the necessary infrastructure for disposal of waste water from local and industrial organizations of the city. (3) SMC provides suitable drainage, sewage and storm water dispensing arrangements in all areas of the city, so that the water of sewage does not get filled up.

Figure Perception of respondents towards Drainage Cell

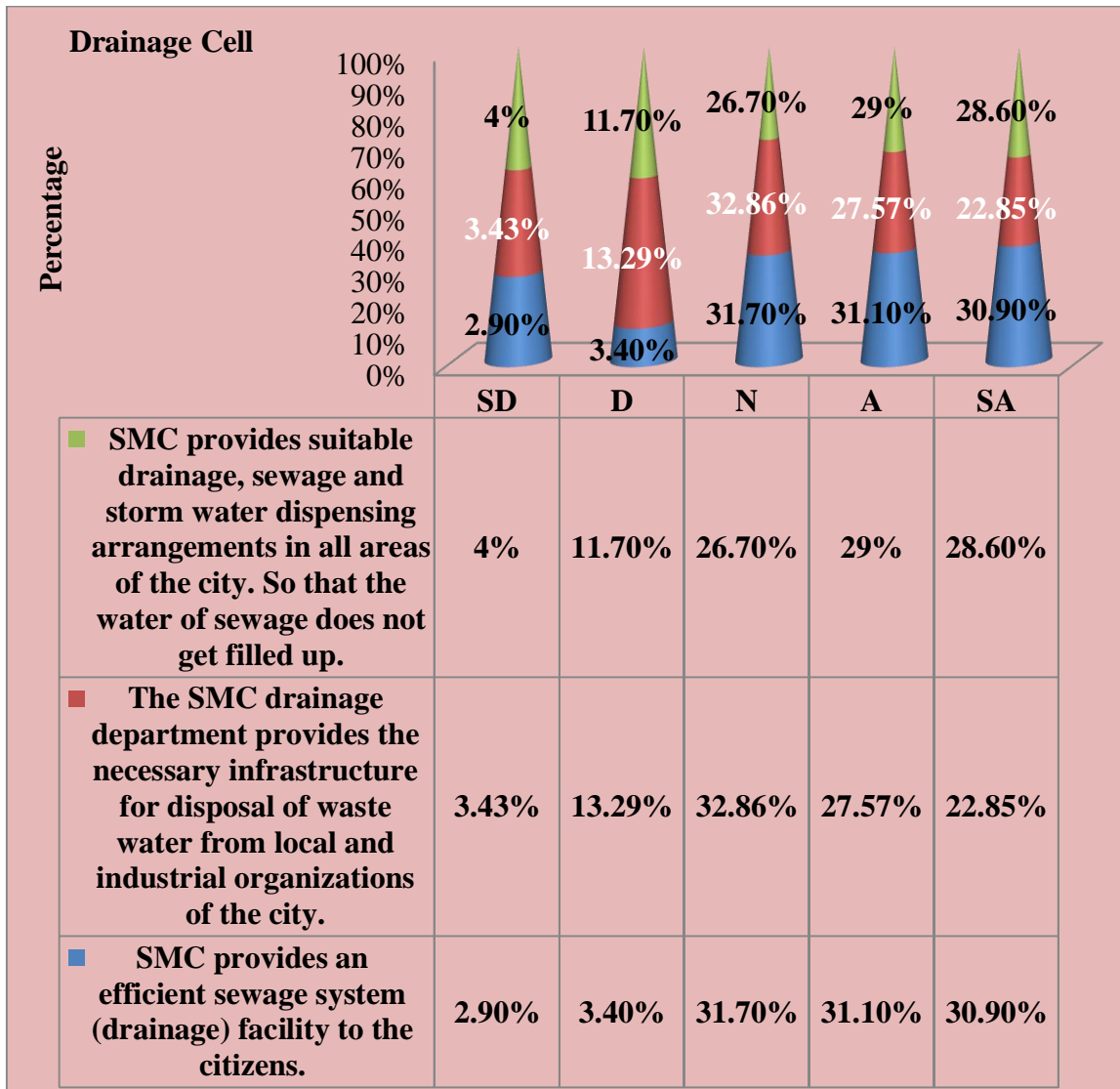


Figure Zone wise Perception of respondents towards Drainage Cell

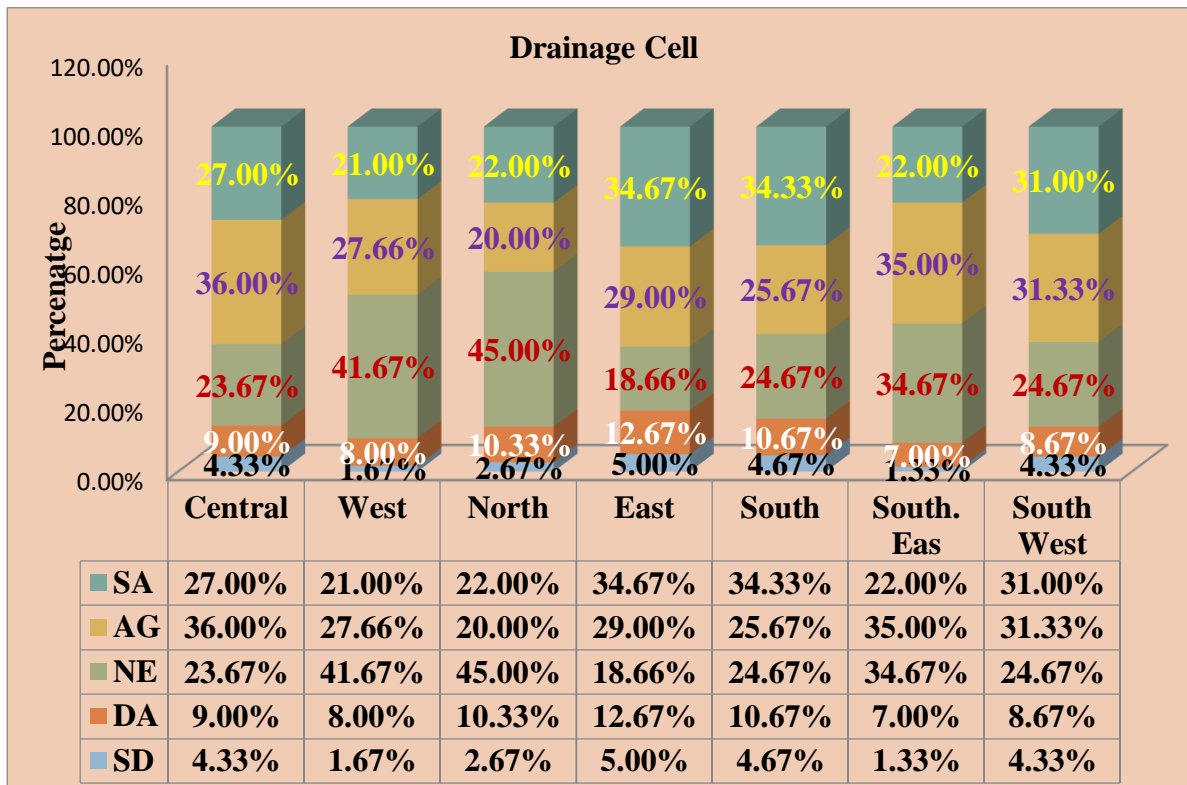


Figure gives a clear idea about the perception of the respondents towards Drainage cell, it shows that 57% of respondents are satisfied towards this service and 13% of respondents are unsatisfied while 30% of respondents are neutral towards this service that means they are neither satisfied nor unsatisfied.

Figure second shows the zone wise satisfaction level of respondents. It shows that the North, West and South East zone respondents are highly neutral it means majority of the respondents of majority zones are neither satisfied nor unsatisfied. The respondents of East and South Zones are not satisfied with this service and Central and South west zone respondents are satisfied towards this service.

**5.2 Drainage Cell Analyzed by Gender: -**

To know the opinion of Gender regarding Drainage cell service provided by SMC two hypotheses are developed as under:

H<sub>0</sub>: There is no significant difference in opinion on Drainage Cell.

H<sub>1</sub>: There is significant difference in opinion on Drainage Cell.

**Table A Ranks for the Drainage cell**

Ranks				
Drainage Cell	Gender	N	Mean Rank	Sum of Ranks
Efficient Drainage Facility	Male	464	352.88	163735.00
	Female	236	345.83	81615.00
	Total	700		
Necessary infrastructure for disposal of Waste	Male	464	360.34	167195.50
	Female	236	331.16	78154.50
	Total	700		
Suitable drainage, sewerage and storm water dispensing	Male	464	358.02	166123.00
	Female	236	335.71	79227.00
	Total	700		

**Table B Test statistics for the Drainage cell**

Test Statistics <sup>a</sup>			
	Efficient Drainage Facility	Necessary infrastructure for disposal of Waste	Suitable drainage, sewerage and storm water dispensing
Mann-Whitney U	53649.000	50188.500	51261.000
Wilcoxon W	81615.000	78154.500	79227.000
Z	-.458	-1.872	-1.430
Asymp. Sig. (2-tailed)	.647	.061	.153
Null Hypothesis	Accepted	Accepted	Accepted
a. Grouping Variable: Gender			

Table A gives a result of mean rank while table B shows that p value. The P value for all the three statements is greater than 0.05. Ho is accepted. It suggests that there is no significant difference in opinion on Drainage Cell; it means that male and female respondents have same opinion for Drainage Cell.

### 5.3 Drainage cell Analyzed by Different zones: -

To know the opinion of various zones wise respondents regarding Drainage cell service provided by SMC two hypotheses are developed as under:

H<sub>0</sub>: There is no significant difference in opinion of different zones respondents on Drainage cell.

H<sub>1</sub>: There is significant difference in opinion of different zones respondents on Drainage cell.



Table A Kruskal Wallis test for Drainage cell

Drainage Cell	Ranks		
	Zone	N	Mean Rank
Efficient Drainage Facility	Central	100	347.12
	West	100	320.87
	North	100	321.37
	East	100	382.40
	South	100	382.60
	South East	100	332.46
	South West	100	366.68
	Total	700	
Necessary infrastructure for disposal of Waste	Central	100	358.36
	West	100	340.96
	North	100	316.07
	East	100	354.58
	South	100	372.33
	South East	100	347.51
	South West	100	363.70
	Total	700	
Suitable drainage, sewerage and storm water dispensing	Central	100	379.45
	West	100	315.60
	North	100	293.76
	East	100	379.92
	South	100	348.21
	South East	100	361.34
	South West	100	375.24
	Total	700	

Table B Test Statistics for Drainage cell

Test Statistics <sup>a,b</sup>			
	Efficient Drainage Facility	Necessary infrastructure for disposal of Waste	Suitable drainage, sewerage and storm water dispensing
Chi-Square	11.772	5.303	18.049
Df	6	6	6
Asymp. Sig.	.067	.506	.006
Null Hypothesis	Accepted	Accepted	Rejected
a. Kruskal Wallis Test			
b. Grouping Variable: Zone			

The mean rank shown in the table A for Central Zone is 379.45, it means the respondents are strongly agreed towards the Drainage service, while mean rank for North Zone is 293.76 that means the respondents of this zone is not agreed in relation to “Drainage” for the statement “Responsible, Suitable drainage, sewerage and storm water dispensing”. But the test statistics (*P-value*) as shown in the Table B for this statement is less than

0.05(.006) so we reject the null hypothesis at 5% level of significance which means that there is a significant influence of different zones on Drainage cell that means the opinion of respondents on this service is different.

## 6. FINDINGS:-

- 1) It is found that 57% respondents are satisfied with the strategy adopted by SMC.
- 2) It shows that the North, West and South East zone respondents are highly neutral it means majority of the respondents of majority zones are neither satisfied nor unsatisfied. The respondents of East and South Zones are not satisfied with this service and Central and South west zone respondents are satisfied towards this service.
- 3) Regarding Drainage Cell service male and female respondents have same opinion for.
- 4) There is a significant influence of different zones on Drainage cell that means the opinion of respondents on this service is different.

## 7. CONCLUSIONS:-

1. It is concluded that the respondents of Central, South, West and South West zones are satisfied with the strategy adopted by SMC towards the Drainage cell.
2. It also concluded that the male and female of Surat city have same opinion regarding the strategy adopted by SMC but there were different opinion of all zones of SMC citizens.

## 8. SUGGESTIONS: -

Conclusion should be considered as a guiding factor to determine how far the goals are deviated and what should be done to improve the existing strategies of management. The following recommendations are made.

- 1) In case of Drainage facilities are concerned SMC has to design a same strategy with Central, West, North and South West zones, so that at least they can enjoy the good facilities and can get satisfaction in these areas. Water quality should be investigated regularly and SMC covered 74% area under drainage system and now plan to cover 100% area of Surat city.

## REFERENCES

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