



**Surat Municipal Corporation**

**Storm Water Drainage**

**Action Plan 2019**

# STORM PLANNING AND DETAILS

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## 1. Surat City Information

Surat is a city located on the western part of India in the state of Gujarat. It is one of the most dynamic city of India with one of the fastest growth rate due to immigration from various part of Gujarat and other states of India.

Surat is one of the cleanest city of India and is also known by several other names like "THE SILK CITY", "THE DIAMOND CITY", "THE GREEN CITY", etc. It has the most vibrant present and an equally varied heritage of the past. It is the city where the British first land in India. The Dutch and the Portuguese also established there business centers in Surat, the remnants of which are still preserved in the modern day Surat. In past this was a glorious port with ships of more than 84 countries anchored in its harbour at any time.

Still today, Surat continues the same tradition as people from all around the country flock in for business and jobs. Surat has practically zero percent unemployment rate and jobs are easier to get here due to very fast development of various industries in and around Surat City.

Surat City	2nd largest city of Gujarat in terms of Area and Population
Area	326.515 sq.km.
Population	44,66,826 (Census 2011)

## 2. Storm Water

### 2.1 Storm Water Drainage & Floods

Till 90'S, there was no established full-fledged storm water drainage system in Surat city, except in some area in piece-meal manner. However, there are old peripheral wall in the walled area of the city and the moats outside this peripheral wall, which carried storm water of the city. Most of these moats are now covered with pipe drains or culverts and the land, so reclaimed, is utilized for roads and other development works. Though the storm water which ultimately being discharged into Tapi river or Kankra creek nearby, during rainfall in the city, some of the low lying area of the city are yet flooded during this period.

Due to its location on banks of the River Tapi near the estuary of the Arabian Sea, the land drainage in Surat City is relatively poor and in the past, during the monsoon months, many areas of Surat city suffered temporary flooding and blockage of storm water. The monsoon in the region is seasonal and is active between the months of June to December. Rainfall during this period can be extremely intense. Hence, Surat Municipal Corporation (SMC) has laid an extensive network of storm water drains in the entire city.

## 2.2 Storm Water Existing Situation

The gentle slope of the city has greatly aided in the natural storm water drainage. By 2005, 85% of the old city area of 112.27 sq.km. was covered with a storm water drainage network, but well built leader lines to support the natural system are lacking in most parts of the City except in the well-developed areas. Generally, the storm water flows through un-built open surface drains and disposed off the nearby creeks or the River Tapi. Thereafter, city expanded from 112.27 sq.km. to 326.515 sq.km. in year 2006.

The area of the city is covered with 927 km of storm drainage network. The diameter of storm drainage network varies from 300 mm to 2200 mm. and RCC box of 1.5 x 2.0 m to 3.5x 4.0 m. The depth of lines varies from 2.5 to 6 m. These drains discharge storm water in to the River Tapi at 42 locations in five (05) zones of the municipal corporation. In order to avoid the entry of floodwaters of River Tapi to the nearby areas, all the outlets are covered by flood protection gates. Normally, these gates are kept open, but at the time of heavy floods in the River Tapi, these gates are closed to prevent the entry of floodwater in to the city.

*Table- Storm water coverage till date*

Zone	Length of Storm Water Drains (kms)	Total length of roads (km)	% roads having storm water drains
West	211.10	298.50	70.72
East	136.42	198.45	68.74
North	141.65	231.25	61.25
Central	33.40	34.78	96.03
South	178.36	205.20	86.92
South-East	79.37	115.20	68.89
South-West	206.06	333.40	61.80
<b>Total</b>	<b>986.35</b>	<b>1416.78</b>	<b>69.62</b>

### 2.3 Future Storm Water Line Coverage

In year 2019-20, the storm water KPIs are as follows:

SWD: KPIs	2018-2019	Target for 2019-2020
Coverage of storm water drainage network (%)	68.64	70.00
Incidence of water logging/flooding (nos)	54.00	48.00

### 2.4 Budget Provision

Description	Budget for 2019-2020 (Rs. in Cr.)	Budget for 2020-2021 (Rs. in Cr.)
Storm water drainage network	18.85	35.37

### 2.5 Prevention of Solid Waste Disposal Into Storm Water Line

In order to prevent the solid waste dumping into river and creeks, Surat Municipal Corporation has provided various type of screens/jalies at outlets of storm water lines.

The photographs of such outlets across the city are as follows:











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