

# SURAT MUNICIPAL CORPORATION GUJARAT



**India's  
Cleanest City**  
(More than 1 Lakh  
Population)

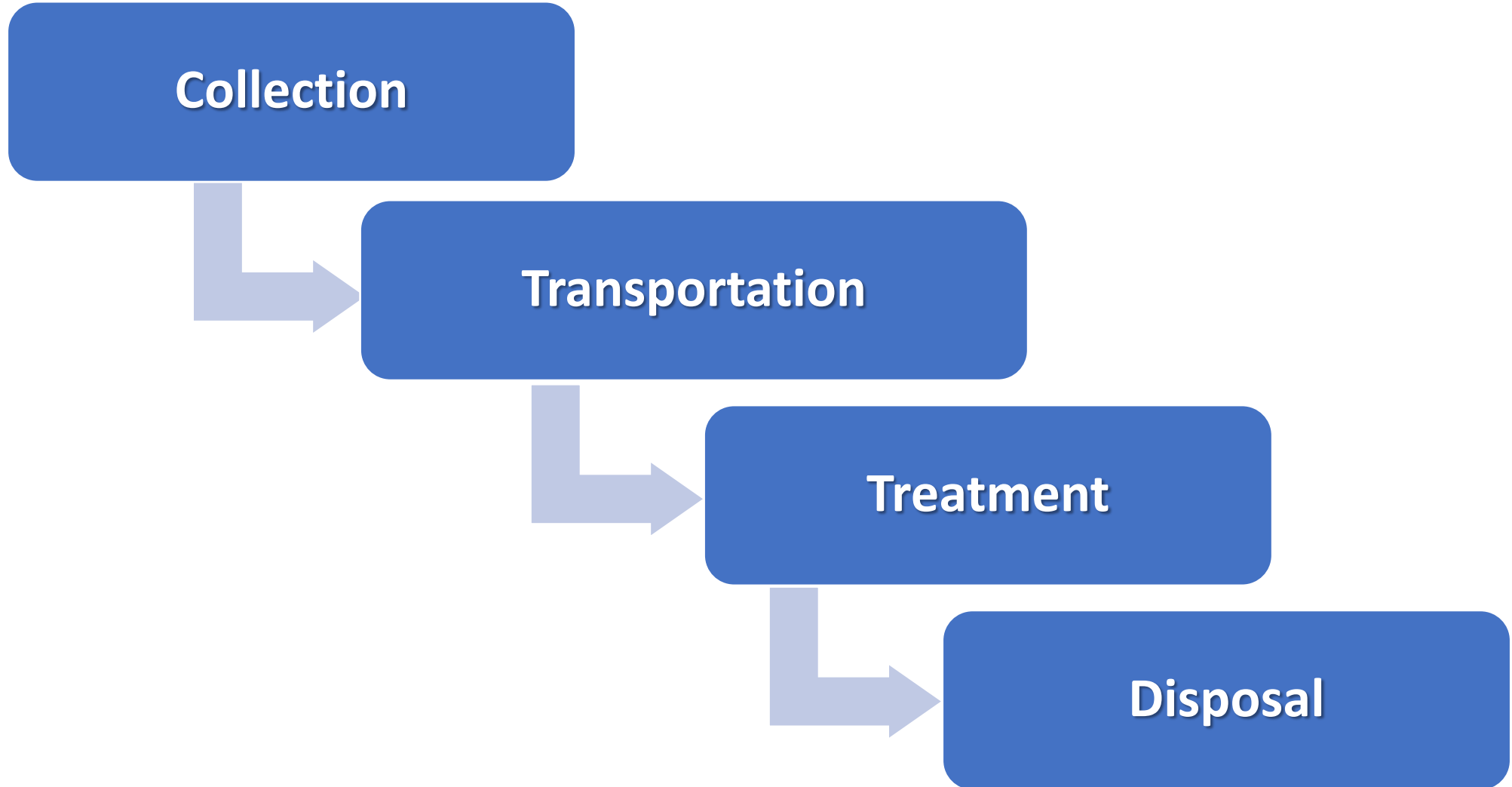


एक कदम स्वच्छता की ओर



बहुजनहिताय बहुजनसुखाय

# Solid Waste Management System



# ACTIVITIES AT A GLANCE

- Surat city is divided in 8 administrative zone & 90 sanitation ward
- Daily collection of MSW : Avg. 1800 MT
- Primary collection
  - Day Sweeping activities
  - Evening Group Sweeping activities
  - Manual Night Scraping & Brushing activities
  - Mechanized Sweeping of BRTS routes
  - Bridge Sweeping activities
  - Door to Door garbage collection
  - Twin-bin dustbins garbage collection
  - Anudan Societies
- Secondary Transportation to Refused Transfer Station
- Processing & Disposal of waste

# SLP-Collection & Transportation

- **Cleaning & Scraping-brushing**

- 6500 bits in morning
- In evening group sweeping done on main roads, commercial areas, public areas
- In night on bridges, fly-overs and BRTS routes carried out by manually by 1691 as well as 22 mechanical sweeper machines.

- **Smart Door To Door Garbage Collection**

- >12 lakh Households covered into Door to Door segregated garbage Collection is being carried out with 551 vehicles
- Every vehicles are under supervision and monitoring through SMAC center with POI assigned to each vehicles equipped with VTS as well as RFID tag.
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# 8 nos of Modern Concept of Secondary Transportation

- All the waste from primary collecting vehicles like Door to Door Garbage collection, Container lifting, sweeping activities etc. reaches to transfer station from where secondary transportation vehicles are loaded for the purpose of transferring it to disposal site.
- MSW received through closed vehicles are dropped to closed containers without secondary handling.





# Surat's Garbage Collection

Smooth  
Simple  
Safe



Vehicle GPS Status

Alerts	800	551	50	192	550	49
1	IF SUBMITTING APPAR LAUNDRY UNIT USE DOOR TO DOOR	Global Waste Management	Not Assigned	25Jan2019 16:42	0	ROCK JASUR GEORGINCE HOTEL, HOSUR ROAD, HOSUR
2	IF SUBMITTING APPAR LAUNDRY UNIT USE DOOR TO DOOR	Global Waste Management	Not Assigned	25Jan2019 16:42	0	ROCK JASUR GEORGINCE HOTEL, HOSUR ROAD, HOSUR
3	IF SUBMITTING APPAR LAUNDRY UNIT USE DOOR TO DOOR	Global Waste Management	Not Assigned	25Jan2019 16:42	0	ROCK JASUR GEORGINCE HOTEL, HOSUR ROAD, HOSUR
4	IF SUBMITTING APPAR LAUNDRY UNIT USE DOOR TO DOOR	Global Waste Management	Not Assigned	25Jan2019 16:42	0	ROCK JASUR GEORGINCE HOTEL, HOSUR ROAD, HOSUR
5	IF SUBMITTING APPAR LAUNDRY UNIT USE DOOR TO DOOR	Global Waste Management	Not Assigned	25Jan2019 16:42	0	ROCK JASUR GEORGINCE HOTEL, HOSUR ROAD, HOSUR
6	IF SUBMITTING APPAR LAUNDRY UNIT USE DOOR TO DOOR	Global Waste Management	Not Assigned	25Jan2019 16:42	0	ROCK JASUR GEORGINCE HOTEL, HOSUR ROAD, HOSUR
7	IF SUBMITTING APPAR LAUNDRY UNIT USE DOOR TO DOOR	Global Waste Management	Not Assigned	25Jan2019 16:42	0	ROCK JASUR GEORGINCE HOTEL, HOSUR ROAD, HOSUR
8	IF SUBMITTING APPAR LAUNDRY UNIT USE DOOR TO DOOR	Global Waste Management	Not Assigned	25Jan2019 16:42	20	ROCK JASUR GEORGINCE HOTEL, HOSUR ROAD, HOSUR
9	IF SUBMITTING APPAR LAUNDRY UNIT USE DOOR TO DOOR	Global Waste Management	Not Assigned	25Jan2019 16:42	0	ROCK JASUR GEORGINCE HOTEL, HOSUR ROAD, HOSUR

Trip History

TRN	TRN Name	Date/Time	POI	NO. OF	Reply
Daily Waste	From To	12 Feb 2019 07:15	0		
Lined Over To	Card Detail	12 Feb 2019 07:15	4		
Use Case	From To	12 Feb 2019 07:15	3		

# SLP-Processing & Disposal

- **On Source Treatment of Wet- Waste**

- Surat Municipal Corporation enforces onsite wet waste processing at various industrial places, restaurants, religious places, Residential & Commercial areas. SMC has established-
  - 1 TPD OWC from the year 2015
  - 20 OWC Units was also installed in Vegetable markets.
  - 50 TPD Bio methanation plant is operating at APMC Market
  - 1 TPD capacity of 2 no. of Vermi Compost plants for processing citywide religious waste

- **Gardens- 192**

- 540 composting beds
- 133 composting bins

- **Bulk Waste Generators- 66**

- **Vegetable Markets- 34**

- **Organic Waste Converter-90**



Biogas Plant



Vermi Composting

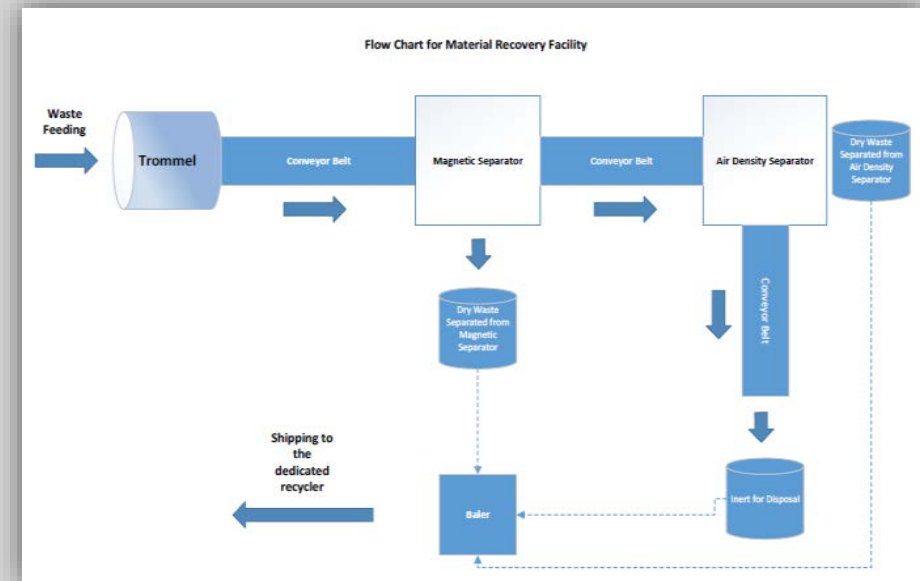




Various OWC at different location & Mobitrash Vehicle

# Material Recovery Facility

- Surat Municipal Corporation had started MRF (Material Recovery Facility) Centre at all the Secondary Refusal Transfer Station from 8th September, 2018.
- 8 MRF centers are operational.
- At MRF Centre Dry waste is segregated into Plastic Waste, Glass, Cardboard & Paper, Rubber, C&D Waste, Industrial Waste, E-Waste, Toys and other dry waste.
- SMC also Proposed Mechanized Material Recovery Facility



# Specialized Waste Management

- Surat Municipal Corporation Specialised waste collection & processing system for Bio-Medical/Domestic Hazardous Waste, Construction & Demolition Waste, Plastic waste and E-Waste.
- For specialized waste toll free numbers were assigned so that any citizen /institutes / organization can directly gave their waste to the agency.
- SMC provided land on token rent–
  - 3 acre land for the 300 TPD C & D Waste Processing Plant
  - 2 acre land for the 75 TPD Plastic Waste Processing Plant
  - 4000 sq.mt land for 6.5 TPD Bio-Medical / Domestic Hazardous Waste treatment Plant
  - 1 acre land for the 5 TPD e-Waste Processing

C&D Waste



Biomedical Waste



Plastic Waste



# Centralized Waste Processing Plant

- The amount of segregated solid waste collected from the entire city was scientifically treated and disposed as per the norms laid in Solid Waste Management Rules-2016.
- Around 1500 TPD capacity of Centralized Municipal Solid Waste Processing Plant has been commissioned at the Khajod Final Disposal site
- Wet waste is been converted to compost using traditional wind rose method
- Dry Waste is been converted in to Refuse Derived Fuel (RDF).



# Dumpsite Remediation

- Since 2001 to 2018, approx. 25,00,000 lac MT of Solid waste generated from the Surat City was dumped in an open space of about 6,12,000 sq.m. at Khajod Final Disposal Site.
- The work related to Scientific Closure/Capping of said opened dumped waste was carried out by Surat Municipal Corporation with an approximate cost of Rs 60 Crores and in the time period of 18 months this huge garbage junk yard was converted into beautiful garden in the area of 3,44,000 sq. Mt.





**Bamroli Tertiary Treatment Plant**



**Anjana Sewage Treatment Plant**

SLP-Sustainable Sanitation

# Wastewater Management

- **Sewage Treatment Plants**

- The Surat Municipal Corporation has developed well established sewerage system to collect domestic waste-water from the domestic and industrial establishments of the Surat city. Present Sewage collection of Surat city is approximately 930 MLD.
- At present, there are 11 STPs with installed capacity of 1072 MLD & 58 Sewage Pumping Stations working for the effective collection & treatment of the Sewage generated in the City.
- The total length of sewerage network is more than 1876 km.
- Estimated population of city is about 56 lacs and out of which, 99.5 % of population has been covered under comprehensive sewerage system.

- **Tertiary Treatment Plant**

- Surat Municipal Corporation has since constructed 40 MLD capacity Tertiary Sewage Treatment Plant to treat secondary treated water from Bamroli Sewage Treatment Plant and to recycle, generate & supply Industrial Grade Water for Pandesara Industrial Estate at a capital cost of Rs. 85.10 Crores.
- Surat Municipal Corporation has been gained Rs.140 Crores yearly by supplying Industrial Grade Water to the industrial estate.
- No complaint ever received regarding the quality of treated wastewater and user industries are satisfied with the quality & quantity of water.

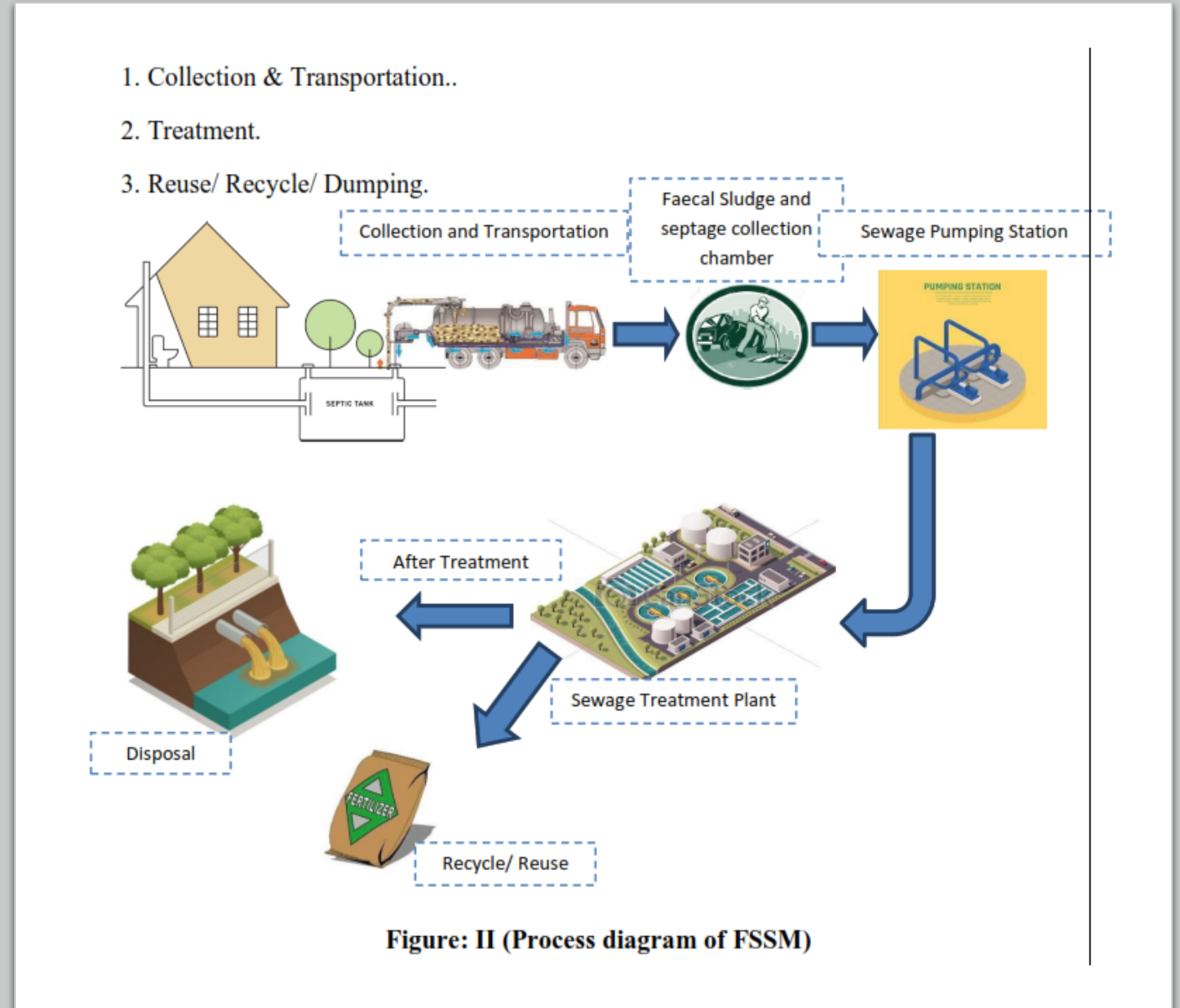


# Faecal Sludge & Septage Management

- 1) Surat Municipal Corporation has enough machinery to lift the faecal sludge so collected in soak pits and septic tanks.
- 2) Out of 57 nos of Sewage Pumping Station of Surat Municipal Corporation, 10 are designed for collecting faecal Sludge
- 3) Designated spots at 10 SPS are located which are connected with 09 STPs where sewage being treated as per norms of Gujarat Pollution Control Board.

## Desludging

- Surat Municipal Corporation has 114 Nos of machinery for Desilting/ Cleaning of Sewer Manhole and line.
- Surat Municipal Corporation also provides machinery on Rental basis for sewer manhole and line cleaning in inside the city as well as outside of Surat city



# SLP-IEC & Behavior Change

- **Waste Reduction Measures**

- Surat Municipal Corporation had started FOOD ATMs at 10 locations under CSR activities with collaboration of LIONS Club of Surat.
- SMC also invites EoI for installation and O&M of 50 Nos. Sanitary Napkin Vending Machines with incinerators at public places, UHCs and SMIMER to reduce Hazardous waste under CSR.
- SMC also planning to install Water ATM under CSR.
- “Bartan Bank” is also approached to minimize plastic products usage and encourages 3R Principal.

- **“Samvedna: Khushi No Pataro”**

- Under Waste Reduction & 3R Program Surat Municipal Corporation has been taken a new initiative for promoting Re-Use Principle of 3R by Starting "Samvedana: Khushi No Pataro" campaign.
- Under this campaign SMC urged to the citizen to donate their old clothes, toys and other useful things which they're not using.
- There are around 166 collection centres in the city for donating their things
- Clothes and toys donated under this campaign were distributed at shelter homes of SMC and the needy people.

- **Garden Waste Collection**

- To Create awareness in the citizen for not throwing garden waste of their house/societies Surat Municipal Corporation has started toll free No.1800-123-8000 for the Garden Waste Collection.



Samvedna: Khushi No Pataro



Bartan Bank

Food ATM



# Bio-Diversity Park

- In 2017 dumping of waste, unethical activities, illegal slaughterhouse, mosquito breeding spots were identified by the Surat Municipal Corporation at the Soham Circle, Beside Althan-Bamroli Khadi Bridge and area was also identified with unhygienic environment.
- Thus, SMC decided to Re-Development of Creek & the surrounding area under the Area Based Developed Model and transformation was started into Bio-Diversity Park.
- Project executed by minimum intervention in 68 hectare of natural terrain and transform into-
  - Recreation of open public places
  - Increasing the overall green cover of the area
  - Improving air quality through plantation
  - Creating natural habitat for flora & fauna
  - Children play area & Senior citizen corner
  - Natural trails jogging track
  - Interconnected water retention ponds



# Citywide Beautification

- Various fly-over bridges all over the city have been beautified via paintings.
- Vertical Wall gardens are created on the pillars of the bridges.
- VIP Road, Vesu has been beautified using multiple statues and murals made from waste and turn into Iconic Road of City with Modern Urban Space, Artifacts and landscapes.
- Many statues made from waste are placed all over the city.
- On the way of Dumas beach, the favorite weekend destination of Suratis' have been transformed into 1.5 km long Dumas Vibrant Pathway







# Citywide Beautification

- **Plastic Monster**

- To create awareness regarding use of single use plastics, Surat Municipal Corporation has created a “Plastic Monster” Artifact from the 5000 Plastic Bottles.
- Stats of the “Plastic Monster” is
  - Weight: around 3 Ton,
  - Length: 27 Feet
  - Width: 15 Feet.

- **Heritage Fort**

- After detailed examination and scientific research, Surat Municipal Corporation started conservation and restoration work of “Heritage Fort” and open for public in 2018.
- Under the conservation and restoration work following are main showcase of Heritage Fort-
  - Gallery of Surat Archives (timeline of fort history, alteration in fort, etc.), British Lifestyle Room & Secret Vault, Dutch Lifestyle Room, Mughal & Armenian Gallery, Trade Gallery & Jail, Art Gallery cum Exhibition Hall and Conference Room & Library







Direct Observation



Cleanliness in City areas

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Jan 03, 2020 5:02 PM  
Lat: 21.2130974,  
Long: 72.8948848

Jan 05, 2020 8:49 AM  
Lat: 21.152158,  
Long: 72.8713395

# Cleanliness in Vegetable Market



सर्वेक्षण  
2020





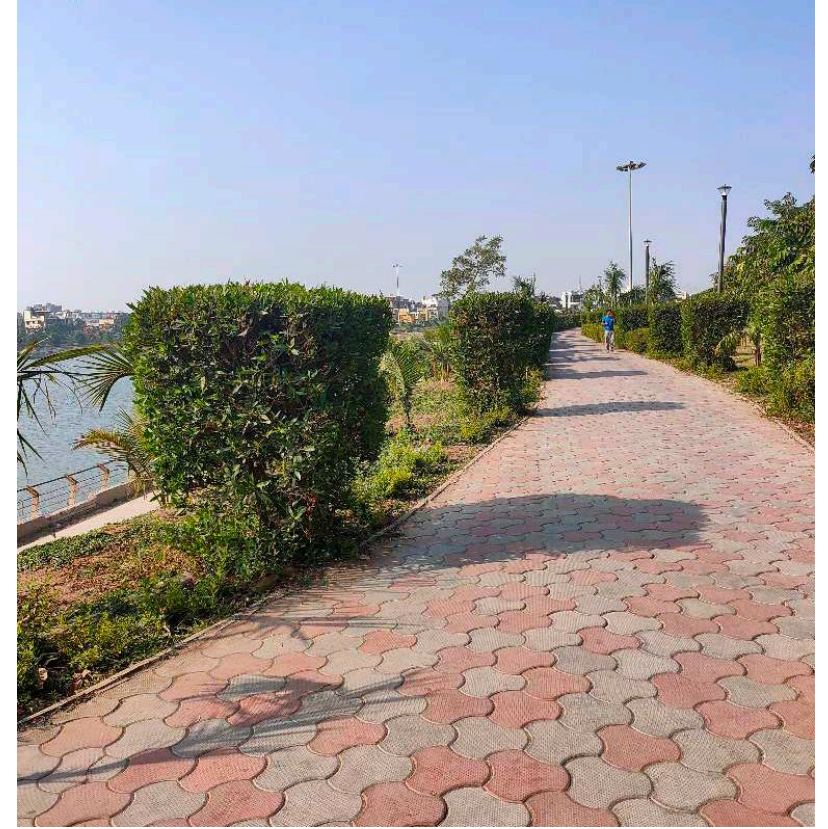
Cleanliness in CT-PT







Visible artwork of SS2020



Measures undertaken to reduce the level of dust in the air

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*Thank You*