

# Swachh Navi Mumbai

Sh. Abhijit Bangar (I.A.S.), Municipal Commissioner



# Waste Profile of the City (Quantity in TPD)



| S. No. | Parameter   | Quantity (in TPD) |
|--------|---|-------------------|
| 1      | Total waste generated   | 710               |
| 2      | Total wet waste collected   | 325               |
| 3      | Total dry waste collected   | 385               |
| 4      | Quantity of dry waste generated   | 385               |
| 5      | Installed capacity of wet waste processing facilities   | 350               |
| 6      | Total wet waste actually processed  | 325               |
| 7      | Quantity of compost produced  | 40                |
| 8      | Quantity of dry waste recycled  | 250               |
| 9      | Quantity of non-recyclable dry waste used as RDF in cement plants / WTE/ used for road construction / converted to fuel | 75                |
| 10     | Quantity of waste sent to landfills   | 60                |

Population as per Census 2011: 11,20,547

# Challenges



## Avg. Daily waste generation: ~710 Tonnes Per Day

1. High rate of urbanization – increase in daily waste generation
2. ~40 TPD from APMC fruit and vegetable market
3. Gaothan and Slum areas
4. High rate of floating population



## Staff Management

1. Mechanism to track all ~4000 sanitary staff on field
2. Permanent staff for sanitary work
3. Lack of motivation for workers
4. Inadequate payment and working conditions



## Composting at Source

1. Availability of proper Space
2. Not my Responsibility
3. Initial Investment and maintenance Cost
4. Skeptical about Hygiene of compost pits and its surrounding area
5. Shortage of skilled labor



## Citizen Involvement

1. Societal Apathy: Making citizens more responsible for waste management
2. Responsibility of the Corporation to collect and process waste
3. Mindset of local leadership and Political involvement



# Approach and Methodology for SWM

## Planning –

Regulatory and Strategic Interventions

## Technological Intervention –

Best practices and effective technologies

## Behavioral Change –

Challenges and Solutions

## Sustainability –

Measures and profitability



# Initiatives taken by city for Increasing Waste Generation



## Planning

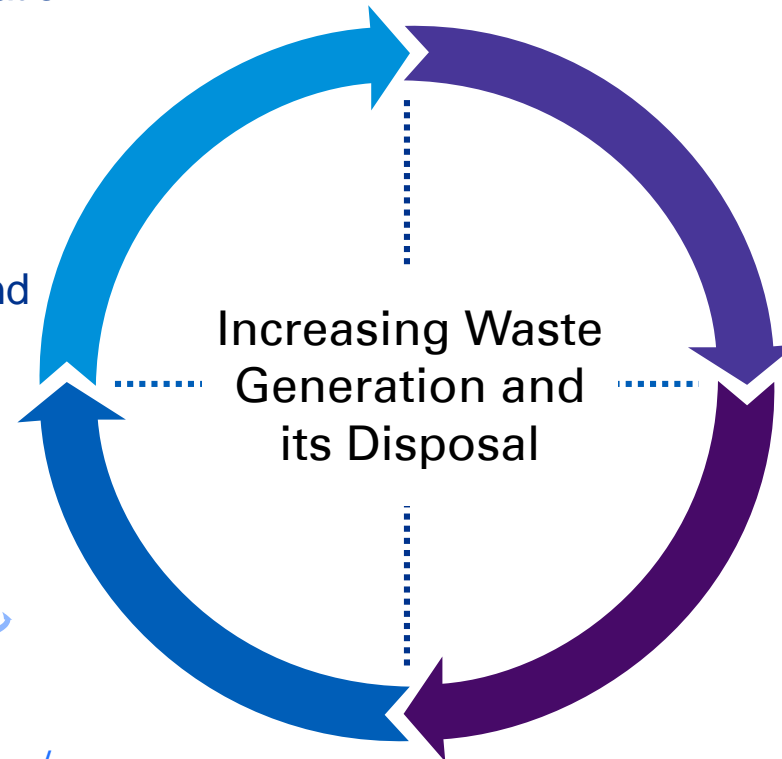


- City wide area identification of waste generation points
- Outsourcing of Collection, Transportation and Processing at Landfill Site
- 119 vehicles deployed for collection
- 14000+ society and community bins emptied on daily basis
- Separate provision for Biomedical and Hazardous waste

## Behavioural Change



- #MyWasteMyResponsibility
- #MyCityMyPride
- Competition amongst Societies
- Incentivize the flag bearers societies / RWAs for initiatives in managing society waste and keep the surroundings clean



## Technological Intervention



- Real time tracking of all vehicles, society and community bins
- One of its kind mechanism for RFID tracking
- CCTV monitoring at Scientific Landfill Site

## Sustainability



- Decentralized processing of waste in slums. **Zero Waste Slum Model**
- Sale of products (Compost and Plastic Granules) from 100% Wet and Dry Waste Processing
- Use of Home Composting for kitchen, terrace gardens
- Waste to Energy Plant at Landfill Site

# Initiatives taken by city for Source segregation



## Details of Segregated Transportation System

1. 100% Collection and Transportation of waste
2. Removal of Community / Waste Storage Bins
3. Debris on call basis mechanism for the city
4. 100% processing of C&D waste
5. Special arrangement for transporting Covid Bio-Medical Waste
6. Smart Watches to all Sanitary workers and supervisory staff

## Waste Processing

1. 100% Scientific processing of Dry, Wet, Plastic and Hazardous waste
2. Processing of Hazardous Waste is outsourced to M/s Mumbai Waste Management
3. Home composting practiced by more than 14000 households
4. Large Corporate Parks like Mindspace are processing Wet Waste at source

## Business models

1. 100% processing is outsourced
2. Vendor sells recyclables which adds to the profit
3. Involvement of Self Help Groups and NGO's

## User charges

1. 10% of property Tax has been earmarked for user charges
2. Stringent Fine Mechanism for Plastic Waste, Pet dropping, non-segregation of waste, littering, repeat offenders
3. Collected 90 lakhs of penalty from Plastic drives





# Innovative Initiatives for Waste Reduction measures



Zero Waste Slum Model -  
Decentralized Collection and  
Processing of Waste: 4000  
households in Indira Nagar  
Slum and Adavali goan

Greensole Initiative:  
Collection and refurbishment  
of old Shoes and provide it to  
needy

Plastiman Initiative :  
Collection of small plastic  
pieces like wrappers etc.

Eco-Friendly Bags made out  
of Old Sarees

Artifacts made out of Waste  
Materials

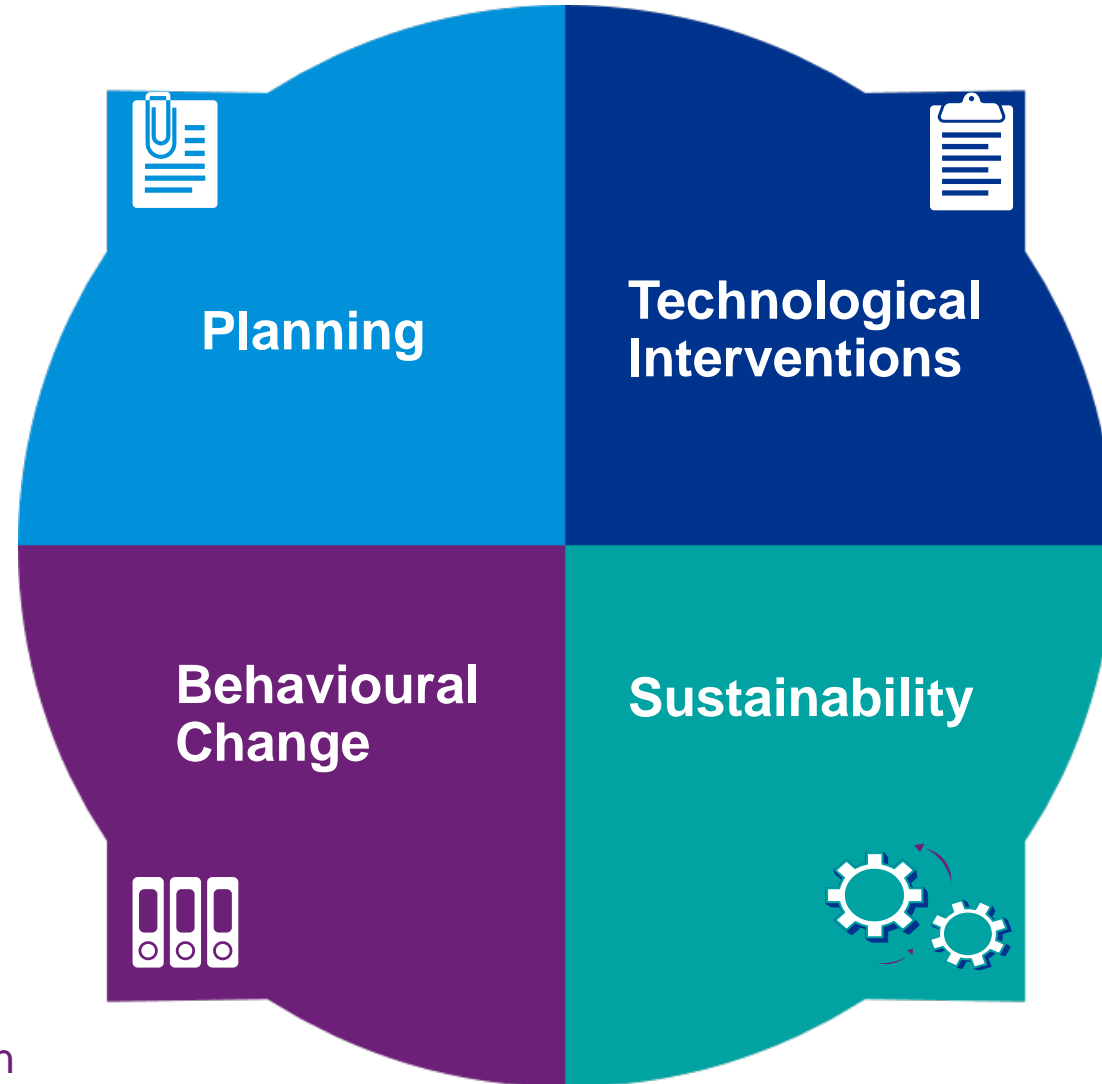
Introduced Nekki ki Deewar  
Concept in the city



# Initiatives taken by city for Staff Management



- Rating Mechanism for all in Grievance Module
- Outsourced the activities like collection & transportation, processing etc
- Introduction of personal protection equipment in contract of the outsourced agency
- Rewards for Best Driver, Best Swachh Worker etc.
- Motivation for Swachh Workers by
  - Paying minimum wage and
  - Banners of Swachh Workers in all Wards



- Introduction of Smart Watch for tracking field movement and real time attendance
- Continuous Training on Waste Management
- Monthly Workshops for Swachh Workers



# Initiatives taken by city for Composting at Source



## Strategic interventions

- Initiated composting with learned population and others started by example of it
- Lifting of only Dry Waste from Identified RWAs
- Engagement with Self Help Groups (SHGs) for providing training to manpower engaged by RWAs

## Regulatory Interventions

- Provision of Mandatory Composting in RWAs generating more than 100 Kgs wet waste
- Provision of separate space for composting mechanism in new Societies while giving building permission and it is cross checked while issuing Occupancy Certificate

## Behavioural Change

- Engagement of NGOs for spreading awareness about cleanliness
- Fines for non-compliance
- Incremental penalties for repeat offenders

# Initiatives taken by city for Citizen Engagement



## Planning

- Short Film Competition
- Society Competitions
- Painting, Rangoli, jingle, slogan Competitions

## Behavioral Change

- Mass IEC Activities
- Road Shows
- Swacchata Park for Students IEC
- Workshops for Citizens

## Technological Interventions

- Use of SMS Gateway
- Social Media platforms





# Benefits accrued to the City

20% decrease in  
Collection and  
transportation cost  
from Zero Waste  
Model

Reduction in  
Waste: Zero Wet  
Waste from 41  
RWAs, 22 Hotels, 6  
malls, 115 gardens  
and 3 Slums

Due to 100%  
segregated waste,  
High yield Compost  
being used in more  
than 200 gardens of  
Navi Mumbai

Additional  
employment  
opportunities for Rag  
Pickers, SHGs in  
RWAs, Hotels, Malls  
and Slum areas



# Benefits accrued to the City

Involvement of more than 1 lakh citizens in Swachh Video Competition

Due to Stringent monitoring and fine mechanism, City collected Rs. 90 lakhs as penalty

Engagement of more than 1 lakh students monthly through Swachhata Park

Inculcated change in mindset of Citizens from *“NOT MY RESPONSIBILITY”* to *“MY WASTE, MY RESPONSIBILITY”*





Thank You