

Transforming Sanitation for Sustainable Sites

ZWC Public Toilet Solutions

Presentation By ZWC



ECO FLUSH

“Revolutionizing Public Sanitation
with Smart, Eco-Friendly Solutions”

"Smart, Sustainable, and Sanitized: Redefining
Public Hygiene."



Problem Statement



- 1.** Lack of sewage infrastructure in hill stations, urban areas, and tourist destinations leads to improper sewage disposal.
- 2.** Public toilets at riverfronts (e.g., Varanasi Ghats) face major challenges in wastewater disposal.
- 3.** Sewage from schools and public toilets often remains untreated.
- 4.** In Delhi alone, over 150 MLD of sewage from 2,500 public toilets and 5,500 schools goes untreated.
- 5.** Public toilets require sewage lines or septic tanks, limiting their installation in underserved areas.
- 6.** Existing public toilet infrastructure is outdated and not aligned with the vision of aspirational India.

Understanding Water Consumption in Public Toilets

Typical Daily Water Consumption in High-Traffic Public Toilet:

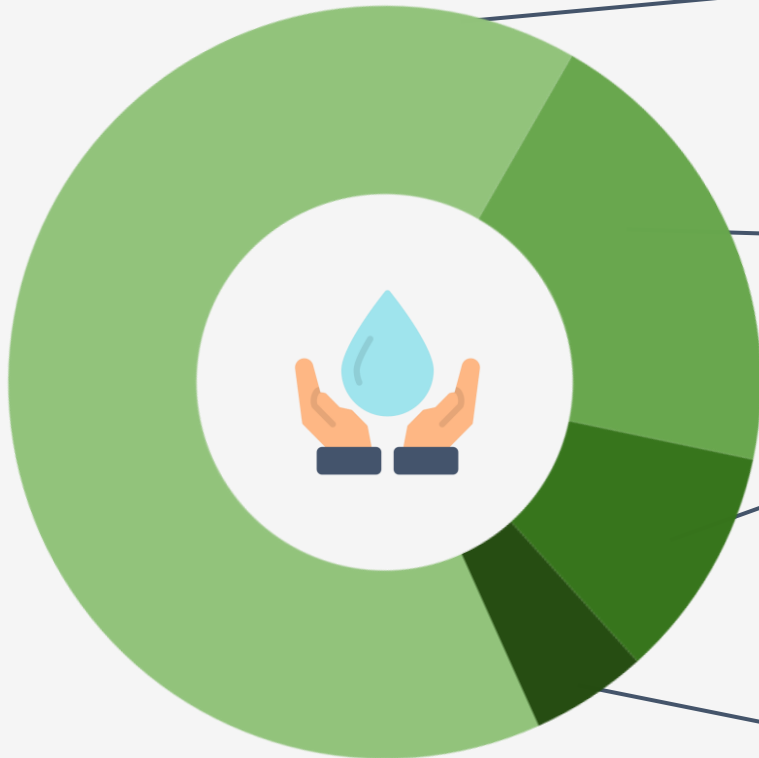
3785 litres

Flushing
65-70%

Urinals
20-25%

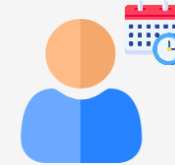
Faucets
5-10%

Cleaning & Maintenance
1-5%



Source: EPA WaterSense Program

To put that into perspective, that is:



Enough to cover about **9-12 days of water usage for one person.**



Enough water to stock **200+ water dispensers**



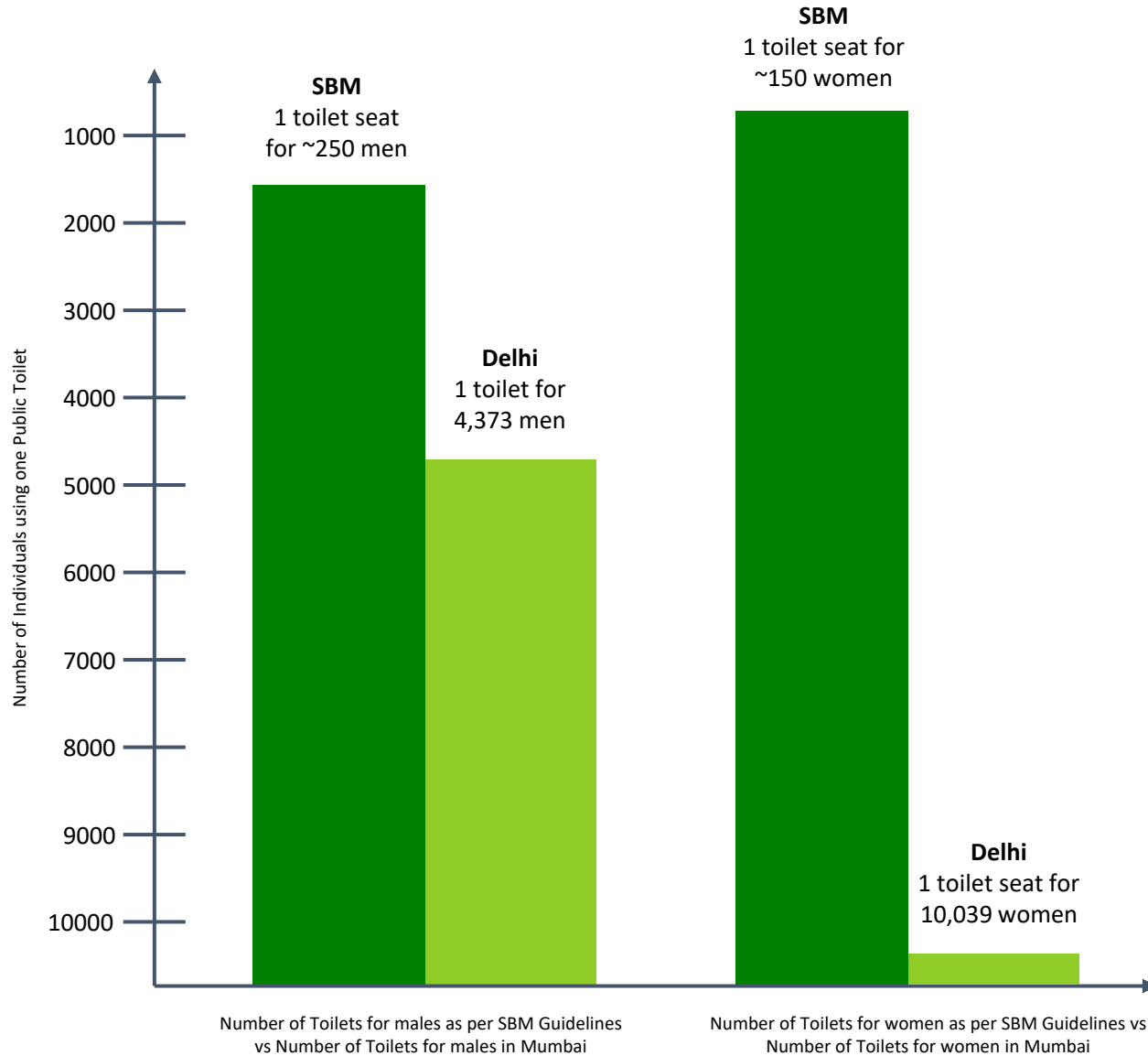
3.5 - 5 years of drinking water for one person



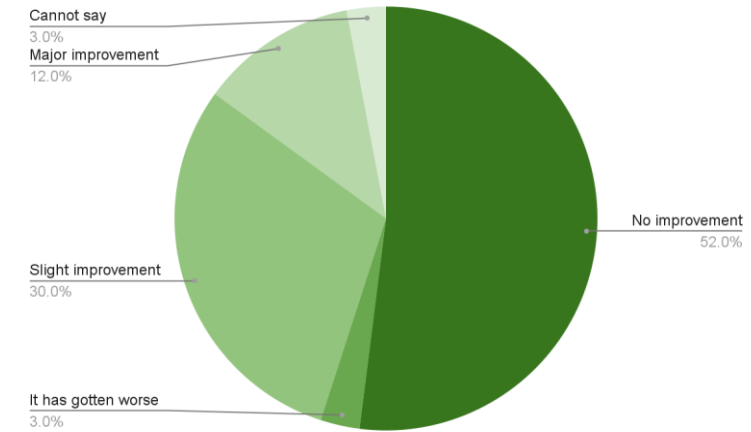
Our Zero Waste Public Toilet cuts down Fresh water consumption by:

~75%

The Ground Reality of India's Public Toilets

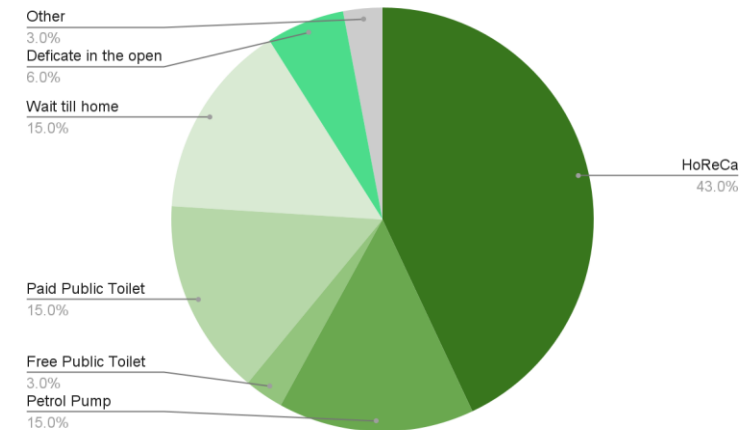


How was the availability of the public toilets in your area improved in the last three years?



55% of respondents believed public toilets in their area have not improved or have gotten worse.

When you have to use the toilet in a public place in your area, where do you generally go?



Only 18% of respondents choose to use public toilets when in need.

**ECOFLUSH
SOLUTION**

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graph LR; A((ECOFLUSH SOLUTION)) --- B[No requirement of a sewage line or septic tank]; A --- C[Flushing is done through recycled water]; A --- D[75% fresh water requirement is reduced]; A --- E[Underground installation saves lot of public space]; A --- F[Can be installed in a very short time]; A --- G[No requirement of sewage disposal];
```

A mind map with a central circle labeled 'ECOFLUSH SOLUTION'. Six lines radiate from the circle to six rectangular boxes. The boxes are: 'No requirement of a sewage line or septic tank' (top-left, purple), 'Flushing is done through recycled water' (top-right, teal), '75% fresh water requirement is reduced' (middle-left, teal), 'Underground installation saves lot of public space' (bottom-right, teal), 'Can be installed in a very short time' (bottom-left, yellow), and 'No requirement of sewage disposal' (bottom, red).

No requirement of a sewage line or septic tank

Flushing is done through recycled water

75% fresh water requirement is reduced

Can be installed in a very short time

No requirement of sewage disposal

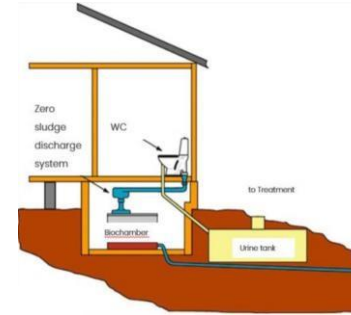
Underground installation saves lot of public space

About **Eco Flush** Smart Public Utility Centre

Functionality of ZWC Solution's **Eco Flush** Smart Public Utility centre



The superstructure will be built using advanced **pre-engineered LGSF technology** and wall panels from recycled plastics



Implementation of an innovative **on-site wastewater treatment and sludge composting system**



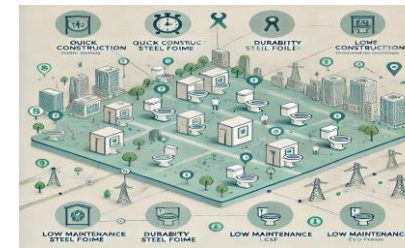
Utilization of **recycled water** for flushing toilets, promoting water conservation



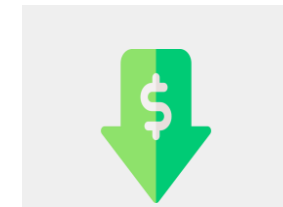
No requirement of sewer line and sludge removal



Self-cleaning mechanisms such as auto flushing and surface cleaning, along with intelligent lighting features and monitor key KPIs



Quick installation at scale in a city



Less O& M cost

Smart City Problems & Solutions



Parameters	Problems	Solutions
Water Usage	High water consumption, leads to wastage and increased water demand.	Optimized refushing systems reduce fresh water requirement by 70-75% , promoting circularity by transforming water into a valuable resource on-site.
Construction Time	Time-consuming construction process requiring power tools and skilled engineers.	Rapid construction of large numbers in short time; built out of strong materials that increase the product's lifecycle. Set up takes just 2-3 days.
Facility Intelligence	Basic, traditional features.	Equipped with state-of-the-art smart features like IoT tracking and data insights in a user-friendly package. Notifications for refilling freshwater.
Cleaning and Hygiene	Manual cleaning efforts with dependency on human capital.	Auto-cleaning functionality for enhanced hygiene and reduced operations & maintenance costs.
Accessibility	Not inclusive to differently abled and low-income communities.	Flexible design allows catering to the needs of all sections of society: ramps for the differently abled, low cost of usage for lower income groups, etc.
Sludge Disposal	Requires frequent sludge disposal, negatively impacting the environment and increasing maintenance costs.	No requirement of sewer line, septic tank and sludge disposal. In-built STP system uses minimal energy and water, less capex and opex costs along with 50+ years lifespan.
Safety & Security for Women	Lack of provisions made for women, unsafe and unkept conditions.	Inclusive designs for women , easy maintenance to ensure optimal hygiene standards.
Composting Capabilities	Rudimentary technology that produces high waste and sludge.	Advanced solutions provide dry, doorless composting of the solids , reducing them to a minimal quantity of manure, about 10-15% of the original volume.

Comparative Analysis

Traditional Public Toilet

- Built by Brick & Mortar
- Take months of time in construction & Installation
- Sewage Disposal Problem
- Need regular maintenance
- Life cycle less than 4-5 years
- Requires fresh water for flushing
- No automation
- Unhygienic
- High Maintenance
- Zero smart features
- Zero branding value
- No water consumption monitoring system
- Zero possibility of water credit
- No digital system to track performance

ZWC Smart **Eco Flush** Toilet

- Built on Light Grade Steel Frame (LGSF) similar structure used in Airport
- Easy to Install in 2-3 days
- In built sewage treatment system
- Maintenance free structure
- Lifecycle more than 15-20 years
- 75% fresh water requirement reduction
- Fully automated flushing, lighting and floor cleaning
- Low maintenance
- In built smart features
- Raise the city branding value
- Water monitoring system
- Opportunity to get water credit
- Municipality will get digital dashboard to track customer feedback, number of users, and recycled water data

Versatile Applications of **Eco Flush** Smart Public Toilets

Zero Waste Smart **Eco Flush** Toilets are **highly adaptable for a range of locations** thanks to their **easy installation, flexible design, and independence from sewer lines and sewage treatment plants**. This versatility not only **promotes hygiene** but also **supports sustainable sanitation practices in diverse environments**.



Urban & Rural Centres



Schools



Tourist & Pilgrimage Sites



Construction Sites



Railway Stations



Bus Terminals

And Much More...





ZWC Bank – A Sustainable Initiative

Educating Students on Waste Management & Sustainability

ZWC Bank At a Glance

ZWC Bank's innovative model digitally tracks students' waste contributions, transforming sustainability into an engaging and measurable initiative.

**Unique
Model**

Over 35,000 students have active accounts with ZWC Bank, actively contributing to a more sustainable environment.

**35000 +
Students**

**35+ Associated
Schools**

Over 35 schools in Rohini have partnered with ZWC to instill environmental values in their students.

ZWC Application



Zero Waste Citizen

Sarvodaya Vidyalaya, Sector 8, Rohini

53 ZWC Admin

- Dashboard
- Live Dashboard
- Tree Dashboard
- Area Master
- Misplaced Resource Management
- Branch Management
- User Management
- Collection Management
- Stock Transfer
- Sales
- Purchases
- Waste Processing
- Segregated Waste
- Stock Report

Home - Dashboard (Displaying data from 31-12-2024 to 31-03-2025)

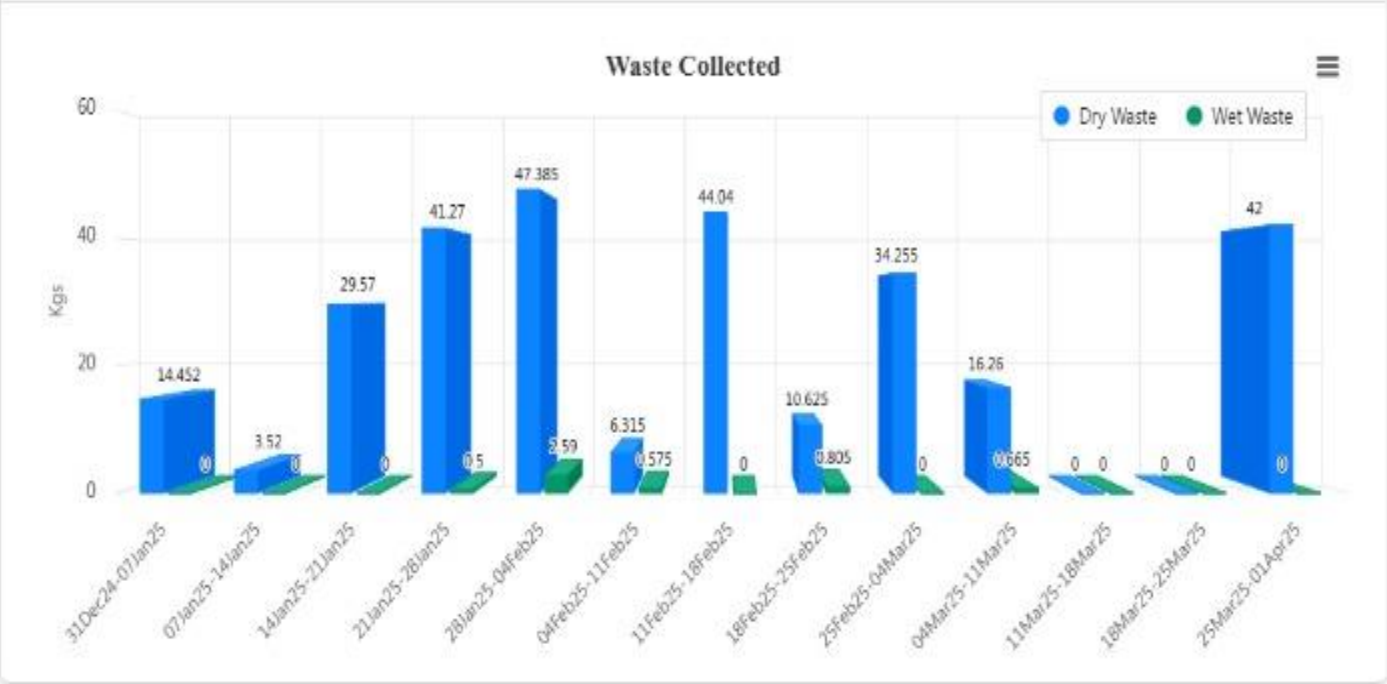
2745
ZWC Accounts

2602.621 Kgs
Total Dry Waste Processed Till Date

5.135 Kgs
Total Wet Waste Processed Till Date

27
Trees Planted

Waste Collected (294.827 Kgs) Dry Waste:- 289.692 Kgs Wet Waste:- 5.135 Kgs



Environmental Savings



27
Trees Planted

ZWC Bank – How It Functions



Digital Accounts

Each student has an account on the ZWC app that digitally records their waste contributions over time.



Waste Tracking

The account tracks and records waste data, ensuring a comprehensive waste monitoring system.

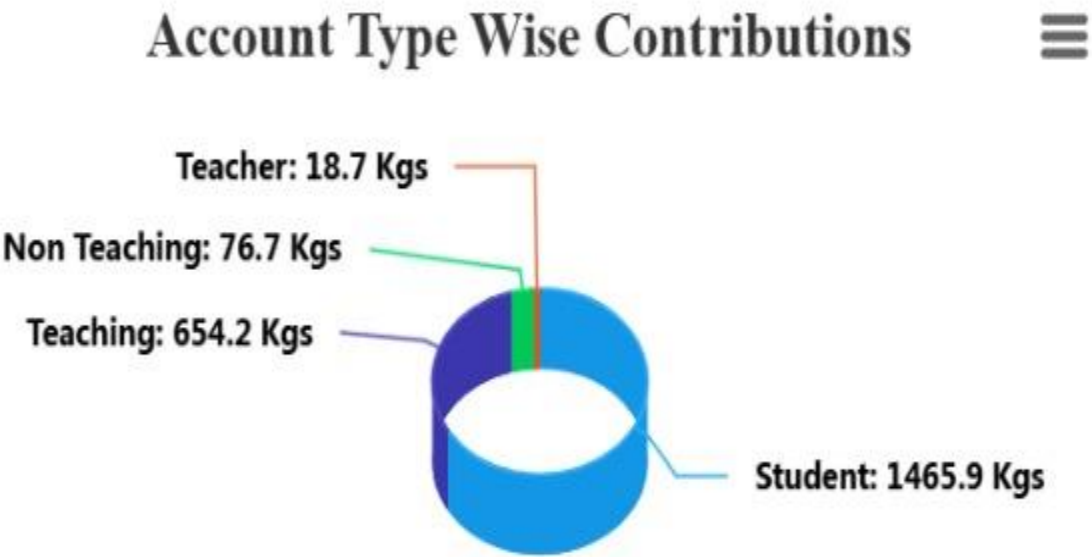


Environmental Education

The ultimate goal of the ZWC Bank concept is to educate the next generation about environmental sustainability

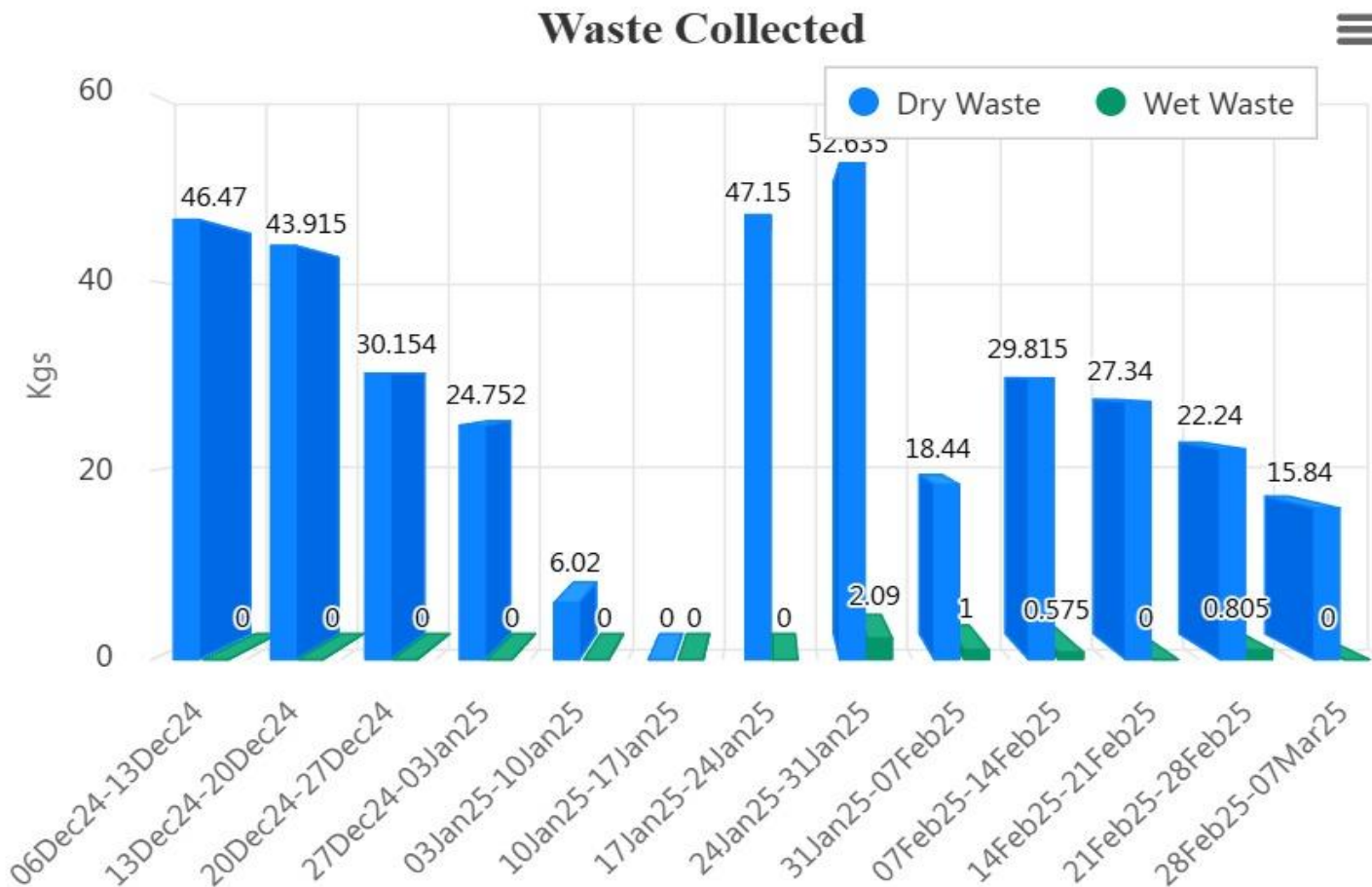
Digital Account Type Wise Contributions

SN	Account Type	Total Collection	Percentage
1	Student	1465.934 Kgs	66.17%
2	Teaching	654.162 Kgs	29.53%
3	Non Teaching	76.71 Kgs	3.46%
4	Teacher	18.73 Kgs	0.85%



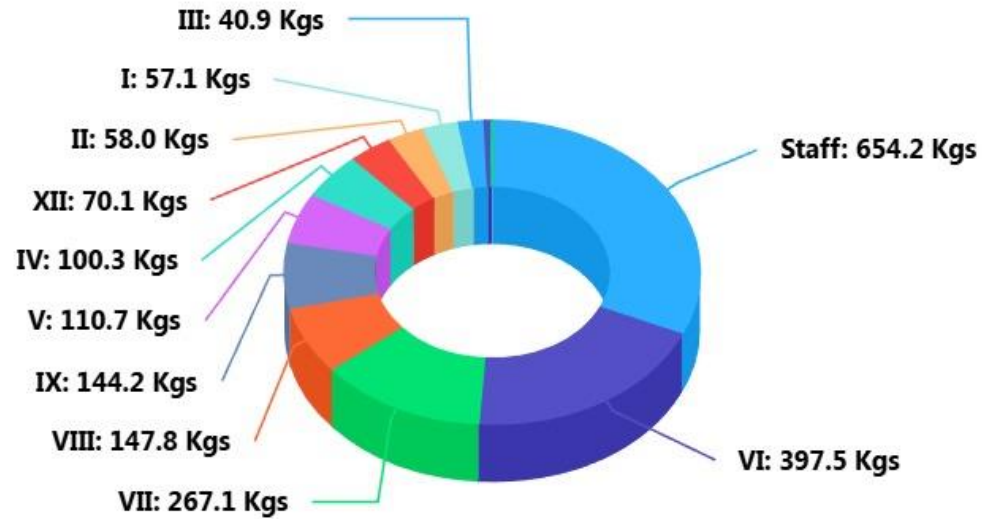
Waste Tracking & Monitoring

Waste Collected (369.241 Kgs) Dry Waste:- 364.771 Kgs Wet Waste:- 4.47 Kgs

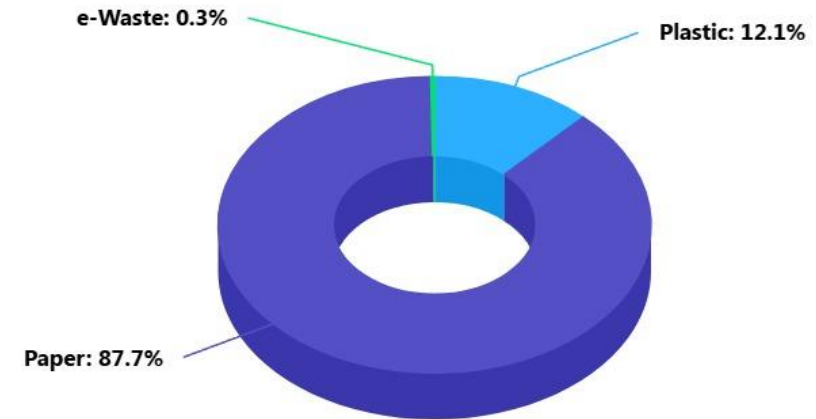


Waste Tracking & Monitoring

Class Wise Waste Contribution



Dry Waste Collection



Learning For a Greener Future



Learning For a Greener Future



Rewards for Sustainability



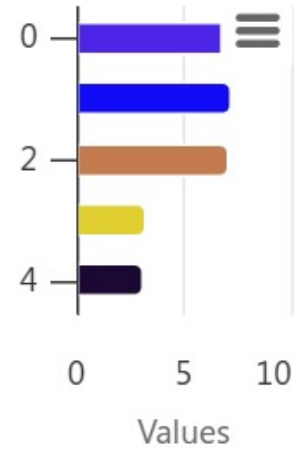
Dynamic Certification



Top Contributors

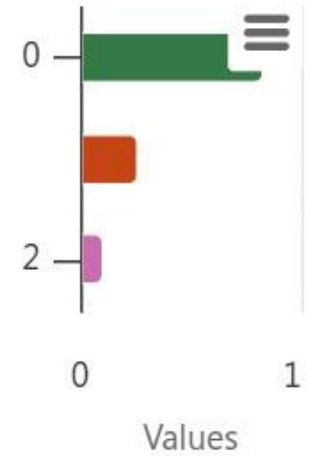
Top Contributors (Class:- I)

SN	Name	Quantity
1	NIKHIL KUMAR	7.200 Kgs
2	NAVYA	7.170 Kgs
3	DIVYANSHI	7.000 Kgs
4	SATYAM KUMAR MISHRA	3.135 Kgs
5	ARYAN	3.080 Kgs



Top Contributors (Class:- XI)

SN	Name	Quantity
1	ADITYA	0.830 Kgs
2	DEVRAJ	0.260 Kgs
3	NIKHIL	0.100 Kgs



Future Goals & Expansion

Expanding to new regions

Collaboration with
More Schools

Introducing new Digital
Features



Thank you

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Contact: 9205060308