IOT SMART WASTE MANAGEMENT FOR CLEANER CITIES

OPTIMIZING WASTE COLLECTION WITH REAL-TIME MONITORING

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WASTE MANAGEMENT ISSUES

Urban waste problems are becoming a major concern due to inefficient garbage collection, overflowing bins, and poor waste management. These issues contribute to environmental pollution, increased health risks, and an overall decline in urban living conditions.

- Inefficient Collection Systems
- Overflowing Bins
- Health Hazards
- Environmental Damage

CHALLENGES IN WASTE MANAGEMENT

- Bins Overflow Due to No Real-Time Tracking
- Trucks Follow Fixed Routes, Wasting Fuel and Time
- Municipal Resources Are Limited
- No Central System to Track Waste Levels

HOW THE SYSTEM WORKS (TECHNICAL OVERVIEW)

- Sensors in bins send updates to the cloud
- When a bin is 85% full, it is added to the collection route
- Supervisor dashboard shows bin status on a city map
- Drivers use the app to navigate and update collection

"OUR PROJECT IS FULLY CLOUD-BASED—NO LOCAL NETWORK NEEDED. DATA, APP, AND ACCESS ARE ALL ONLINE, ENSURING SEAMLESS CONNECTIVITY AND REMOTE AVAILABILITY FOR AUTHORIZED USERS"

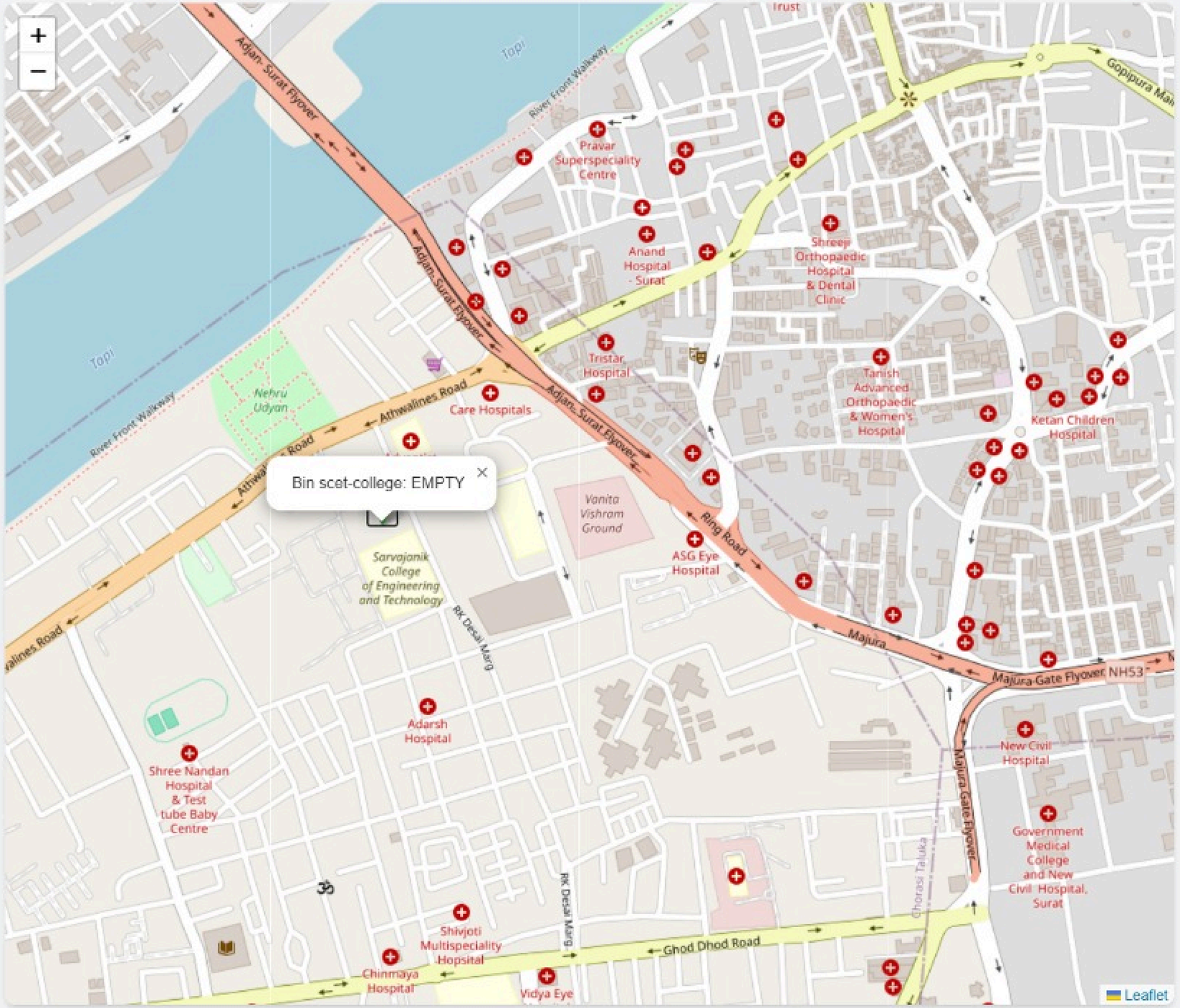
Dashboard

Map View

List View

Add Bin

Add Truck/Driver



Bin Details

ID: scet-college

Status: EMPTY

Assigned Driver: N/A

Level: 10%

Nearest Center: Athwagate

Bin Fill Level History

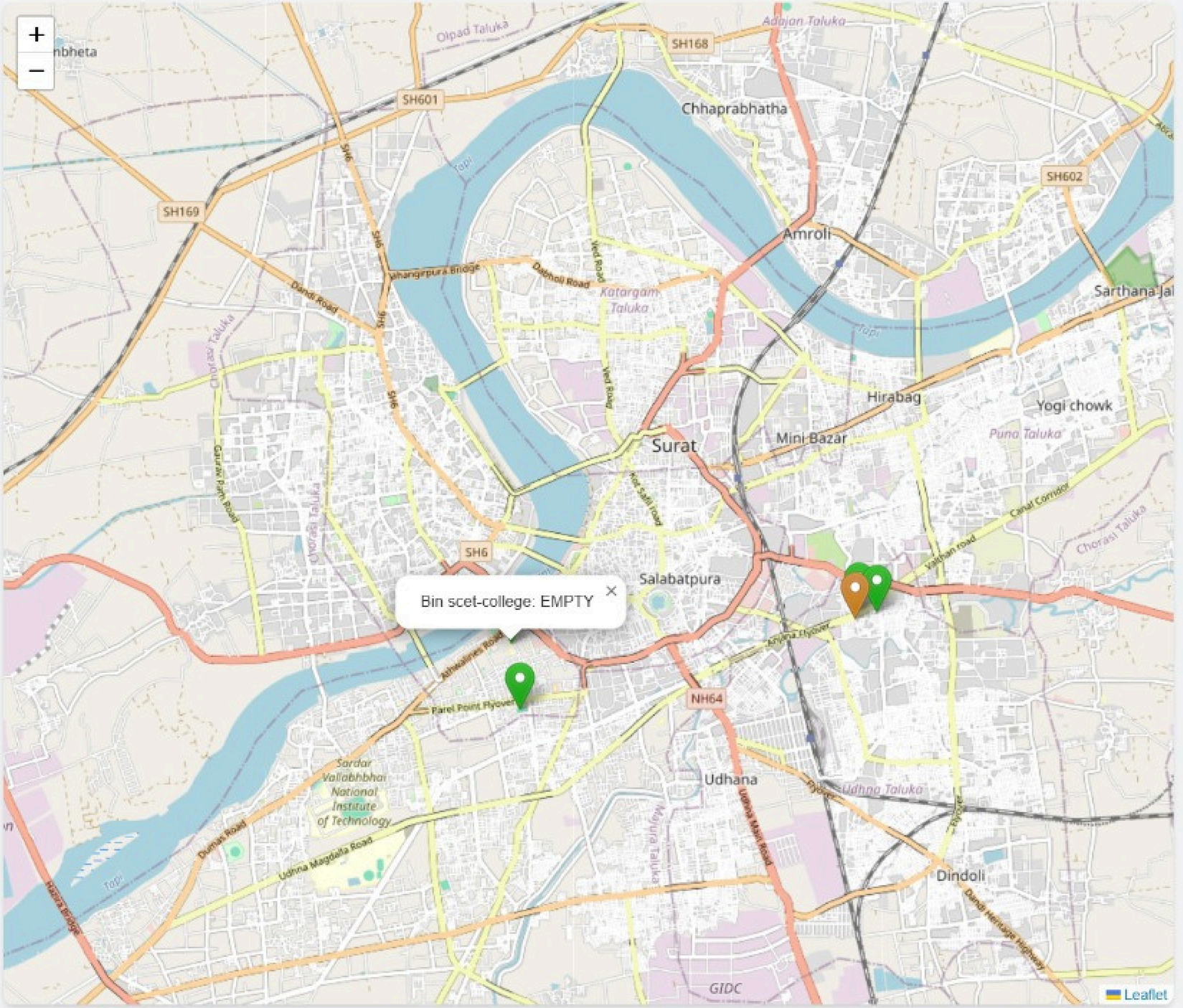
Dashboard

Map View

List View

Add Bin

Add Truck/Driver



Bin Details

ID: scet-college

Status: EMPTY

Assigned Driver: N/A

Level: 10%

Nearest Center: Athwagate

Bin Fill Level History

Register Bin

Bin ID

Select Nearest Collection

Longitude

Latitude

Submit

Add Truck & Driver

Truck ID

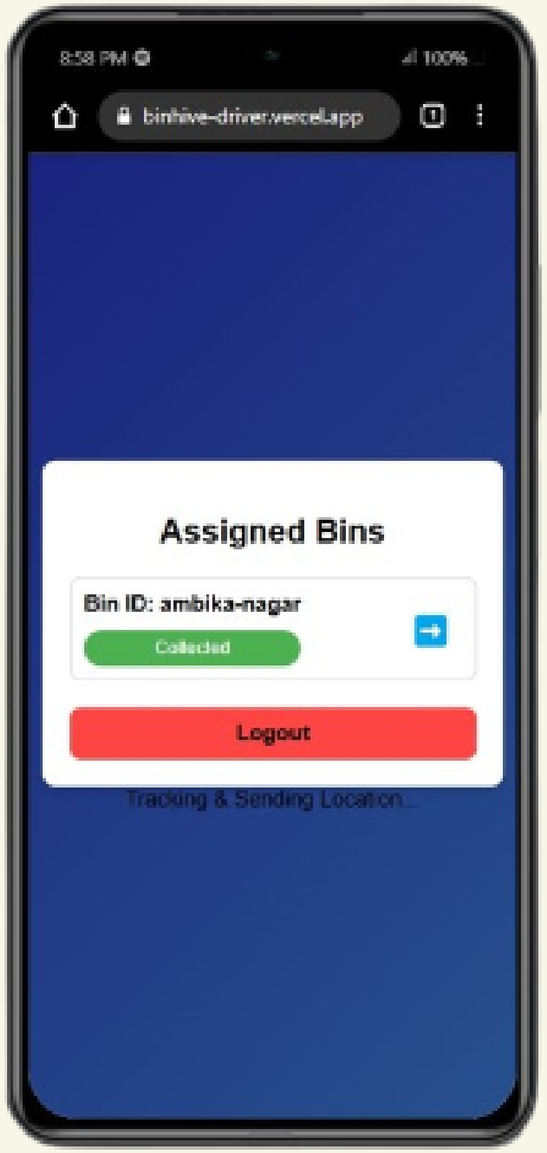
Username

Password

Select Nearest Center

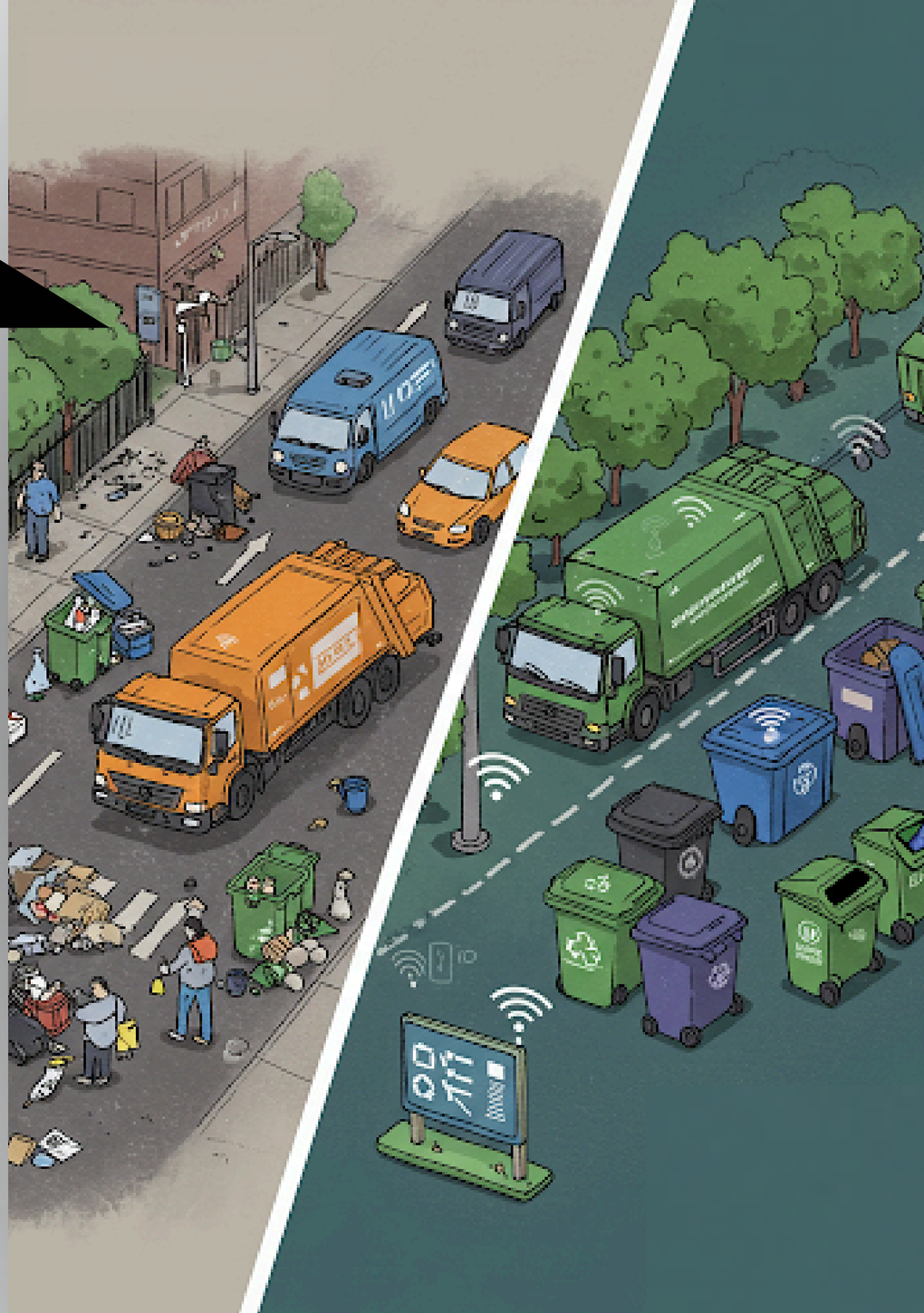
Register Truck

8:58 PM
100%
binhive-driver.vercel.app
Driver Login
Select Nearest Center
Truck ID
Password
Login


8:58 PM
100%
binhive-driver.vercel.app
Assigned Bins
Bin ID: ambika-nagar
Collected
Logout
Tracking & Sending Location...

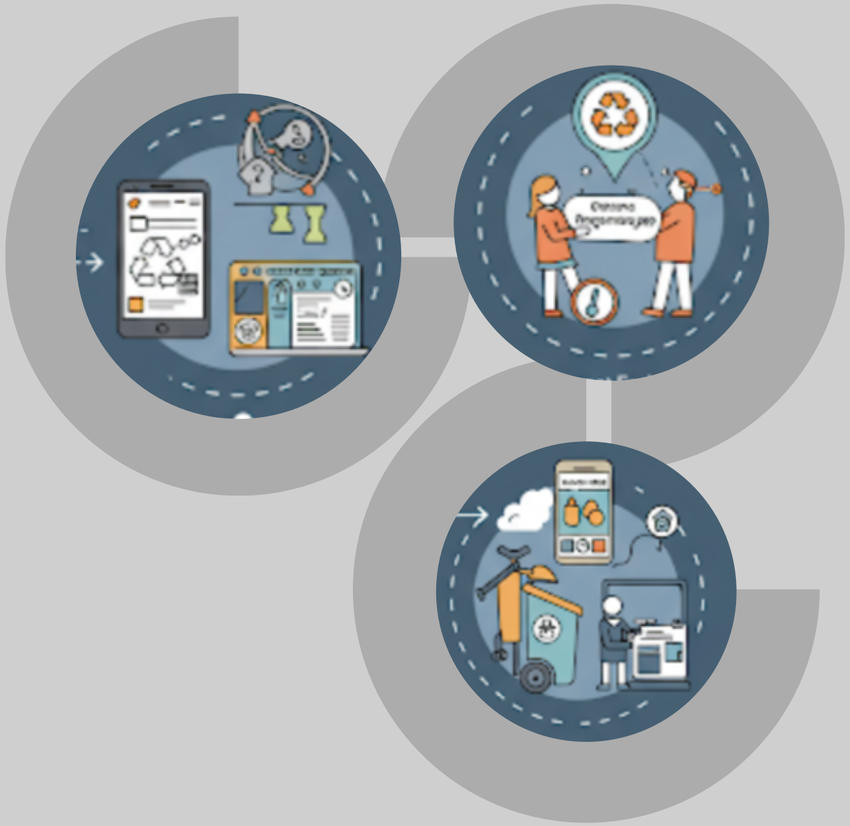
EXPECTED BENEFITS AND IMPACT

- Smarter scheduling improves efficiency
- Saves fuel and reduces costs
- Cleaner streets, better sanitation
- Data helps in city planning
- Lower pollution, better sustainability



FUTURE ENHANCEMENTS & SCALABILITY

- Predictions for waste levels based on trends
- Citizen reporting app integration
- Waste segregation & recycling tracking



THANK YOU