

Project Design Phase-I
Proposed Solution Template

Date	26 October 2022
Team ID	PNT2022TMID04297
Project Name	Smart Waste Management for Metropolitan Cities
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Today big cities around the world are facing a common problem, managing the city waste effectively without making city unclean. Today's waste management systems involve a large number of employees being appointed to attend a certain number of dumpsters. This leads to a very inefficient and unclean system in which some dumpsters are overflowing. Here a smart waste management system is introduced in which each dumpster is embedded in a monitoring system that will notify if the dumpster is full. This system provides an effective solution to the waste management problem.
2.	Idea / Solution description	The key objectives of the project are - <ul style="list-style-type: none">• The proposed system would be able to automate the solid waste monitoring process and management with the help of IOT (Internet of Things).• The proposed system consists of sensor that is attached to the dumpster and a threshold value is set.• When the amount of garbage reaches the threshold value, corresponding message is sent to the concerned official.• The official then sends the location of the particular dumpster to the nearby truck drivers.• The proposed system not only ensures a clean environment, but also provides time efficiency by choosing an optimal path for the truck drivers to reach the location of the dumpster.
3.	Novelty / Uniqueness	<ul style="list-style-type: none">• The system immediately acknowledges the officials once the dumpster reaches the threshold value rather than waiting for the dumpster to be filled completely.• It is also periodically monitored.• It also reduces the workload of the workers and is comparatively cost-efficient.

4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"> • Ensures a healthy environment • Improves the cleanliness of the streets • Prevents contamination and also prevents animals from consuming the garbage • Reduces pollution
5.	Business Model (Revenue Model)	<ul style="list-style-type: none"> • Time consumption and cost efficiency is achieved and the garbage collection is performed in an organized way. • It also offers software as a service model to the concerned officials thereby creating revenue from it.
6.	Scalability of the Solution	<ul style="list-style-type: none"> • An efficient IoT- based system is developed for ensuring a clean and healthy environment. • This system can be used to manage the solid waste from small area to big metropolitan cities. • The amount of garbage in any dumpster can be identified quickly with the help of sensor. • It is acknowledged by the officials and the truck drivers are sent there immediately. It also chooses an optimal path for the drivers to reach the dumpster quickly, thereby providing time efficiency.