Project Design Phase-
I Proposed Solution
Template

DATE	19/10/2022
Team ID	PNT2022TMID*04766*
Project Name	SMART WASTE MANAGEMENT SYSTEM IN METROPOLITIAN 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)**	This project is dealing with the problem of waste management in cities, when the garbage collection system is not optimized. This system allows the authorised person to know the fill level of each garbage bin in a locality or city at all times and time saving to the truck drivers.
2.	**Idea / Solution description**	• In the proposed system, whenever the waste bins gets filled this is the acknowledged by placing the circuit at the waste bin ,which transmit it to the receiver at the desired place in the area . • The received signal indicates the waste bin status at monitoring and controlling system. • The solution of this project is , it should be energy efficient ,able to communicate and share information across the extended area coverage. The smart bin using LoRa

		technology for long transmission . GSM module is used to perform data transmission to the server. Android application are developed to monitor the bin.
		• The overall process is done by interfacing various modules such as GPS, CAMERA, BUZZER and SENSORS.
		• Gas sensor has been usd to capture the odour and smell and sends alert to the authorized person if the odour affects the people
3.	**Novelty / Uniqueness**	This paper presented the smart waste management system by implementing sensors to monitor the status of bin, LoRa communication protocol for low power and long range data transmission and Tensor flow based object detection to perform waste identification and classification. The segregation of waste is interfaced and coordinated well between the object detection can be done using Raspberry pi
4.	**Social Impact / Customer Satisfaction**	From the public perception as worst impact of present solid waste disposal practices are seen direct social impact such as neighbourhood of land fills to communities breeding of pests and loss in property value. Poor waste management contributes to climate change and air pollution and directly affect the eco system and species.

5.	**Business Model (Revenue Model)**	Waste Management organizes its operations into two reportable business segments: • **Solid Waste**, comprising the Company's waste collection, transfer, recycling and resource recovery, and

		disposal services, which are operated and managed locally by the Company's various subsidiaries, which focus on distinct geographic areas; and
		• **Corporate and Other**, comprising the Company's other activities, including its development and operation of landfill gas-to-energy facilities in the US, and its recycling brokerage services, as well as various corporate functions.
6.	**Scalability of the Solution**	This paper presented an efficient IoT -based and real-time waste management model for improving the living environment in cities. The proposed system uses sensors and communication technologies where waste data is collected from the smart bin ,in real time and then transmitted to an online platform where the authorized person can access and check the availability of the compartment scattered around the city.