Project Design Phase-I
Proposed Solution

Date	22 October 2022
Team ID	PNT2022TMID03917
Project Name	Smart Waste Management System for Metropolitan Cities

S. No	Parameter	Description
1.	Problem Statement (Problem to be solved)	In the current situation, we frequently observe that the trash cans located in public areas in cities are overflowing as a result of the daily production in waste. We are planning to construct "IoT Based Waste Management for Metropolitan Cities" to prevent this from happening because it makes people's living conditions unclean and causes a terrible stench to spread throughout the neighbourhood.
2.	Idea / Solution description	Developing a web application to track the location and status of any bin. The designated individual receives the alert message with the location of the trash can when the bin is full.
3.	Novelty / Uniqueness	It is intended to install a sensor that will open and close the trash can when a person is detected, as well as a MOS sensor to detect harmful gas levels and display those levels through a web application.
4.	Social Impact / Customer Satisfaction	Municipalities and waste management firms have seldom ever utilized technological advancements to increase operational efficiency. What they have accomplished thus far is an increase in route efficiency. The waste collection trucks must physically verify the level of trash in each bin, even with superior route optimization. Trucks frequently visit bins that don't need to be emptied, which wastes time and money when done manually. The use of intelligent IOT-based waste management systems results in time and cost savings.
5.	Business Model (Revenue Model)	Waste Management makes money by offering a variety of waste management, disposal, and recycling services. This recyclable garbage can be used as a source of raw materials after being improperly collected and deposited into landfills. It can be a very profitable method of earning income if appropriately classified and processed further. For the year ending

		December 31, 2021, Waste Management, Inc. recorded operating revenue of 17.9 billion dollars. This represented a 2.7 billion dollar, or 17.8%, yearly gain. The acquisition of Advanced Disposal by Waste Management, Inc. was one factor in the company's remarkable revenue development.
6.	Scalability of the Solution	The weight sensor is positioned at the bottom of the trash cans to gauge their weight, and the ultrasonic sensor is positioned at the top to determine the trash can's condition. A weighing system can be designed using weight sensors because they are known for their accuracy and reliability in producing precise weight data. The web application designed will provide a vehicle with a quick path to save on gasoline. This layout offers greater effectiveness.