

**Project Design Phase-II**  
**Solution Requirements (Functional & Non-functional)**

Date	25 October 2022
Team ID	PNT2022TMID52032
Project Name	Project – Smart Waste Management in Metropolitan Cities
Maximum Marks	4 Marks

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Gmail
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	GPS Access	GPS access to know the location
FR-4	Bin level Analysing	Indication of the levels of Waste bins at a regular interval of time.
FR-5	Transport Router	To make a efficient route for the collection of garbages around a particular area.

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	<ul style="list-style-type: none"><li>A smart solution has been proposed to make the waste sorting more simple and accurate , and improve the user experience, usability, and satisfaction.</li><li>It aims to optimize ease of use while offering maximum functionality.</li></ul>
NFR-2	Security	<ul style="list-style-type: none"><li>The information of the users will be highly secured,the accounts are verified with Gmail.</li><li>If the products are misplaced then the GPS driven sensor gives an alert.</li></ul>
NFR-3	Reliability	<ul style="list-style-type: none"><li>Operates in a defined environment without failure resulting in less manpower, emissions, fuel use and traffic congestion.</li></ul>
NFR-4	Performance	<ul style="list-style-type: none"><li>The system will provide accurate reports, thus increasing the efficiency of the system.</li><li>The real-time monitoring of the garbage level with the help of sensors and wireless communication will reduce the total number of trips required of Garbage collecting truck.</li><li>This will reduce the total expenditure associated with the garbage collection.</li></ul>

NFR- 5	<b>Availability</b>	<ul style="list-style-type: none"> <li>• The smart waste bins are available in Convention centers, buildings, stadiums, and transportation facilities and captures high-quality waste data and informs staff when it gets well.</li> </ul>
NFR-6	<b>Scalability</b>	<ul style="list-style-type: none"> <li>• A versatile scalable smart waste-bin system based on limited waste management could potentially lead to great improvements.</li> <li>• Once these smart bins are implemented on a large scale by replacing the traditional bins, the waste can be quickly managed to its efficient level as it avoids unnecessary lumping of wastes on roadside.</li> </ul>