# Solution Requirements (Functional & Non-functional)

Date: 26 June 2025

Team ID: LTVIP2025TMID20299

Project Name: Sustainable Smart City Assistant Using IBM Granite LLM

Maximum Marks: 2 Marks

## Functional Requirements:

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Interaction | Policy Summarization, Feedback Form, Chat Assistant |
| FR-2 | AI-based Assistance | Forecasting, Anomaly Detection, Eco Tips Generation |
| FR-3 | Data Input Handling | PDF Upload, Text Input, CSV Upload, Query Input |
| FR-4 | Session Management | Streamlit session\_state for preserving chat and inputs across modules |

## **Non-functional Requirements:**

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| **NFR No.** | **Description** |
| NFR-1 | Usability – Intuitive, icon-based Streamlit interface with unified layout |
| NFR-2 | Security – IBM Watsonx API keys secured via .env and python-dotenv |
| NFR-3 | Reliability – Stable API communication with Watsonx, tested across modules |
| NFR-4 | Performance – LLM responses returned within 2–3 seconds using optimized prompts |
| NFR-5 | Availability – Works in local environment and is deployable on Streamlit Cloud |
| NFR-6 | Scalability – Modular architecture allows addition of more ML/LLM modules |