**Project Design Phase**

**Proposed Solution Template**

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| Date | 26 june 2025 |
| Team ID | LTVIP2025TMID32104 |
| Project Name | sustainable smart city assistant using ibm granite llm |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

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

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| **S.No.** | **Parameter** | **Description** |
| 1 | **Problem Statement (Problem to be solved)** | Urban cities struggle with managing vast policy documentation, tracking sustainability KPIs, addressing citizen complaints efficiently, and promoting green practices. Current systems are fragmented, manual, and often slow to respond to real-time events. |
| 2 | **Idea / Solution description** | The Sustainable Smart City Assistant is an AI-powered dashboard leveraging IBM Watsonx Granite LLM, Pinecone, and ML to automate city operations. It offers modules for policy summarization, KPI forecasting, anomaly detection, citizen feedback reporting, eco-tip generation, and an interactive AI chat assistant—built using Streamlit and FastAPI. |
| 3 | **Novelty / Uniqueness** | Unlike traditional civic portals, this solution uses semantic search and LLM-driven reasoning to deliver instant, human-like responses. The integration of policy summarization, real-time forecasting, anomaly alerts, and eco-awareness tips in one platform is a unique, modular, and scalable urban assistant model. |
| 4 | **Social Impact / Customer Satisfaction** | Enhances city governance transparency, empowers citizens with real-time interaction and feedback systems, and promotes sustainability through actionable insights. The system increases trust, improves service delivery, and fosters environmental awareness among citizens and administrators. |
| 5 | **Business Model (Revenue Model)** | Freemium SaaS model: Free access to core modules for local governments or NGOs. Subscription-based pricing for advanced analytics, regional integrations, policy tracking, and custom dashboards for private infrastructure firms and smart city initiatives. |
| 6 | **Scalability of the Solution** | The system is modular and cloud-deployable, capable of scaling across cities and regions. New features like additional LLM models, language support, or civic integrations (e.g., GIS data, public transport APIs) can be added with minimal effort. |