**Project Design Phase**

**Proposed Solution Template**

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| Date | 27 – June-2025 |
| Team ID | LTVIP2025TMID30752 |
| 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** |
|  | Problem Statement (Problem to be solved) | Rapid urbanization has led to challenges in sustainability, citizen participation, policy accessibility, and infrastructure planning. City residents struggle to understand dense government policies, and urban planners lack tools for real-time data forecasting and anomaly detection. There is also limited digital engagement for citizens to contribute to smart governance. |
|  | Idea / Solution description | The solution is an AI-powered assistant that leverages IBM WatsonX Granite LLM and machine learning to summarize policy documents, forecast utility KPIs, detect anomalies, provide eco-friendly suggestions, and accept citizen feedback. It is built using a Streamlit-based frontend, with backend processing including LLM integration and Pinecone for semantic policy search. |
|  | Novelty / Uniqueness | |  | | --- | |  |  |  | | --- | | The project uniquely combines NLP via a large language model (WatsonX), semantic search (Pinecone), forecasting, and real-time citizen feedback into one unified platform. It simplifies policy access, provides data-driven insights, and promotes environmental awareness through a single, accessible interface. | |
|  | Social Impact / Customer Satisfaction | The assistant empowers citizens to understand city actions, participate actively in feedback mechanisms, and adopt sustainable practices. It aids administrators in making proactive decisions and fosters greater transparency between governments and residents. This improves civic trust, resource planning, and sustainability outcomes. |
|  | Business Model (Revenue Model) | The solution can follow a SaaS (Software-as-a-Service) model offered to city governments, urban agencies, and civic tech firms. Licensing, custom deployments, and support packages can generate recurring revenue. Add-ons like API integrations or advanced reporting tools may be monetized separately. |
|  | Scalability of the Solution | The solution is modular and highly scalable. Additional cities, languages, or data types (e.g., transport, waste) can be integrated easily. It can be deployed to serve smart towns, universities, or eco-parks. It supports integration with IoT platforms and real-time datasets via APIs. |