Project Design Phase
Problem – Solution Fit Template

Date	15 February 2025
Team ID	LTVIP2025TMID31710
Project Name	Sustainable Smart City Assistant Using IBM Granite LLM
Maximum Marks	2 Marks

Problem:

Urban environments face increasing challenges related to sustainability, such as energy inefficiency, poor waste management, traffic congestion, inadequate public services, and limited citizen engagement. City administrations often lack real-time insights and struggle to make data-driven decisions that can effectively address these issues. Furthermore, existing smart city systems are often fragmented, not user-centric, and fail to provide accessible, AI-driven, and scalable solutions to assist in everyday urban operations.

Solution:

The Sustainable Smart City Assistant, powered by IBM Granite Large Language Model (LLM), offers an intelligent, conversational AI interface designed to support city planners, residents, and administrators in creating more sustainable, efficient, and inclusive urban environments. This assistant leverages IBM Granite LLM's advanced natural language understanding to:

- Provide actionable insights from complex urban datasets.
- Offer real-time recommendations for energy optimization, waste reduction, and traffic flow improvements.
- Facilitate better communication between citizens and city services through a multilingual, accessible, and always-available assistant.
- Enable predictive analytics for resource planning, environmental monitoring, and emergency response.

By integrating sustainability-focused goals with cutting-edge AI capabilities, the solution directly addresses the core needs of modern cities—bridging the gap between data overload and practical, everyday decision-making.

Purpose:

The Sustainable Smart City Assistant project aims to solve complex urban sustainability challenges by delivering intelligent, context-aware support to city stakeholders—planners, administrators, and citizens—through a conversational AI interface powered by IBM Granite LLM.

- Solve complex problems in a way that fits the state of your customers
  We address real-world urban pain points such as traffic congestion, energy inefficiency, and environmental degradation using an assistant that adapts to the current digital infrastructure of smart cities, making integration smooth and cost-effective.
- Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior
  The assistant is deployed across familiar platforms like web portals, mobile apps, and kiosks,

aligning with how citizens and officials already interact with city services—leading to faster adoption and everyday utility.

- Sharpen your communication and marketing strategy with the right triggers and messaging
  By analyzing interaction data and citizen feedback, the assistant refines its messaging to address pain points with the right tone, timing, and language—ensuring higher engagement and satisfaction.
- Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems
  The assistant becomes a daily interaction point for users by solving common urban challenges such as reporting infrastructure faults, checking public transport updates, or accessing eco-friendly tips—thereby reinforcing trust and sustained usage.
- Understand the existing situation in order to improve it for your target group
  Using real-time data and contextual analysis, the assistant provides deep insights into behavioral patterns, operational inefficiencies, and service gaps—empowering city leaders to make informed, citizen-focused improvements.