

To convert this Agile-based Sprint plan into a **Sustainable Smart City Assistant** project using **IBM Granite LLM**, we need to align the structure (Sprints, Epics, Stories, Story Points) to tasks relevant to a smart city solution while incorporating the use of **IBM Granite LLM** for AI-related components (e.g., NLP, chatbot, data insights).

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## Project Overview

**Project Name:** Sustainable Smart City Assistant

**Goal:** Develop an AI-powered assistant using IBM Granite LLM that helps citizens interact with smart city services (like transport, waste management, energy, water usage, etc.) and provides sustainability insights.

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## Epics, Stories & Story Points

### Epic 1: Data Pipeline Development

#### *Sprint 1*

##### **User Story 1: Data Collection**

- *Story: Collect real-time city service data (traffic, utilities, waste management) – 2 SP*
- *Story: Load and store data into cloud database (e.g., IBM Cloudant or DB2) – 1 SP*

##### **User Story 2: Data Preprocessing**

- *Story: Handle missing/incorrect data in city service datasets – 3 SP*
- *Story: Convert categorical data (e.g., districts, service types) into usable format – 2 SP*

### Sprint 1 Total Story Points = 8

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## Epic 2: AI Assistant Development with IBM Granite LLM

#### *Sprint 2*

##### **User Story 3: Model Building**

- *Story: Fine-tune IBM Granite LLM for local language queries and sustainability terms – 5 SP*
- *Story: Test LLM outputs for accuracy and bias in smart city context – 3 SP*

## User Story 4: Assistant Deployment

-  Story: Design HTML UI for citizen query input and responses – 3 SP
-  Story: Deploy Flask-based API backend on IBM Cloud with Granite integration – 5 SP

 **Sprint 2 Total Story Points = 16**

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### Project Metrics

- **Total Story Points: 24**
  - **Number of Sprints: 2**
  - **Team Velocity:  $24 / 2 = 12$  Story Points/Sprint**
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### Deliverables by Sprint

#### **Sprint 1: Functional Data Pipeline**

- Sustainable city datasets ingested, cleaned, and preprocessed.
- Ready for model training and assistant integration.

#### **Sprint 2: Working Assistant MVP**

- Granite LLM integrated.
  - Web-based Assistant responds to sustainability queries.
  - Deployed on IBM Cloud using Flask backend.
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### Potential Use Cases for Assistant

- "What is the best time to use public transport to reduce carbon footprint?"
  - "Show water consumption trends in my neighborhood."
  - "Report missed garbage collection."
  - "Tips for reducing energy usage during summer."
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### IBM Tools Integration

- **IBM Granite LLM:** NLP for smart city queries.

- **IBM Cloud:** Hosting Flask app and databases.
  - **Watsonx.ai (Optional):** For advanced training and evaluation.
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