## Data Flow Diagram & User Stories

**Date:** 26 June 2025  
**Team ID:** LTVIP2025TMID32000  
**Project Name:** Sustainable Smart City Assistant Using IBM Granite LLM

**Level 0 DFD**

The user interacts with the Sustainable Smart City Assistant via a Streamlit dashboard. User inputs such as policy documents, KPI CSVs, and feedback messages are processed through FastAPI endpoints. IBM Watsonx Granite LLM handles summarization, report generation, and chat responses. Real-time updates and outputs are shown on the UI, while vector searches use Pinecone.

**Level 1 DFD**

Each module—Policy Summarizer, Eco Tips Generator, KPI Forecaster, Anomaly Detector, Feedback Handler, and Chat Assistant—interacts with FastAPI backend services. Textual and structured inputs are passed to relevant services such as Pinecone or Watsonx LLM, responses are parsed, and the UI is updated dynamically via Streamlit components.

**User Stories**

| **User Type** | **Feature** | **User Story ID** | **User Story** | **Priority / Sprint** |
| --- | --- | --- | --- | --- |
| City Planner | Policy Summarization | USN-1 | As a planner, I can upload a policy document and get a summarized version. | High / Sprint-1 |
| Citizen | Feedback Submission | USN-2 | As a citizen, I can submit feedback on city issues. | High / Sprint-1 |
| Admin | KPI Forecasting | USN-3 | As an admin, I can upload KPI data and forecast future values. | High / Sprint-2 |
| Environmentalist | Eco Tips | USN-4 | As an eco-educator, I can enter a topic and get sustainable tips. | Medium / Sprint-2 |
| Data Analyst | Anomaly Detection | USN-5 | As an analyst, I can detect abnormal usage trends in datasets. | High / Sprint-3 |
| Citizen | Chat Assistant | USN-6 | As a citizen, I can ask sustainability questions and get smart responses. | Medium / Sprint-3 |
| City Admin | Sustainability Report | USN-7 | As an admin, I can generate a report based on KPIs and AI summaries. | High / Sprint-4 |