Project Design Phase
Problem – Solution Fit Template

Date	15 February 2025
Team ID	LTVIP2025TMID36588
Project Name	traffictelligence: advanced traffic volume estimation with machine learning
Maximum Marks	2 Marks

🔹 Problem

Urban areas face increasing traffic congestion due to outdated, manual, or delayed traffic volume estimation systems. These systems fail to provide real-time insights for traffic authorities, city planners, or commuters, resulting in poor traffic management, longer travel times, and higher emissions

🔹 Customer Behavior / Situation

- Traffic authorities rely on limited sensor-based or manual counting methods.
- City planners lack reliable, time-stamped traffic data for infrastructure decisions.
- Commuters face unpredictable congestion without real-time updates.
- Data, when available, is fragmented and lacks predictive capabilities.

🔹 Solution

Traffictelligence offers a machine learning-powered traffic volume estimation system that provides accurate, real-time predictions using historical and live traffic data. It is cloud-deployable, scalable, and integrates with existing infrastructure through APIs and dashboards.

🔹 How It Solves the Problem

- Automates volume estimation using real-time and historical data
- Provides accurate predictions with ML models (e.g., XGBoost/LSTM)
- Offers easy integration with dashboards for authorities
- Enables proactive decisions and congestion management

🔹 Behavioral Fit

- Aligns with the increasing trend of smart city digitization
- Meets the urgent need for real-time data for traffic optimization
- Appeals to planners, logistics companies, and municipal bodies already using cloud and sensor tech
- Encourages adoption by offering low-latency, API-based access to predictions

🔹 Strategic Benefits

- **Faster adoption** via integration with existing systems
- **Trust-building** through reliable and consistent data