**Project Design Phase**

**Problem – Solution Fit Template**

|  |  |
| --- | --- |
| Date | 16 July 2025 |
| Team ID | LTVIP2025TMID44001 |
| Project Name | TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning |
| Maximum Marks | 2 Marks |

**Problem – Solution Fit Template:**

**Problem Statement**

Urban traffic congestion is a major challenge faced by city planners, commuters, and traffic management authorities. Traditional methods of traffic volume estimation are often manual, outdated, inaccurate, or unable to factor in dynamic variables like weather, holidays, and events—resulting in inefficient road usage and increased commuter frustration.

**Our Solution – TrafficTelligence**

TrafficTelligence uses Machine Learning models to accurately predict traffic volume using data such as:

* Temperature, Rain, Snow
* Weather Conditions
* Holiday Data
* Date Information (Day, Month, Year)

By integrating regression-based ML models (Random Forest, XGBoost, etc.), TrafficTelligence offers real-time, data-driven traffic volume predictions, helping:

* City planners optimize road design
* Commuters choose optimal travel times
* Authorities implement intelligent traffic control systems

**Purpose of Our Solution**

-Solve urban congestion using predictive insights  
-Increase adoption by using familiar data inputs and interfaces  
-Improve communication and planning for traffic departments  
-Build trust by solving a real, frequent, and costly issue Enable smarter city infrastructure through --AI-driven forecasting

**Template:**