**Project Design Phase**

**Proposed Solution Template**

|  |  |
| --- | --- |
| Date | 15 February 2025 |
| Team ID | LTVIP2025TMID41777 |
| Project Name | TrafficTelligence: Advanced Traffic Volume Estimation With Machine Learning |
| Maximum Marks | 2 Marks |

**Proposed Solution Template:**

Project team shall fill the following information in the proposed solution template.

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | Increasing urban traffic congestion causes delays, pollution, and inefficiencies in traffic management. Current systems often lack accurate, real-time, and predictive insights for better decision-making. |
|  | Idea / Solution description | TrafficTelligence is a machine learning-powered traffic volume estimation system that uses historical data, weather conditions, and time-based factors to predict traffic volumes accurately. It enables dynamic traffic management, urban planning, and smarter commuter navigation through a web-based interface. |
|  | Novelty / Uniqueness | Combines multiple real-world parameters like weather, holidays, and timestamp values for predictions. Offers real-time estimations via a web UI using Flask, enhancing both authorities’ control systems and individual commuter route planning — all within an accessible, scalable, and user-friendly deployment. |
|  | Social Impact / Customer Satisfaction | Reduces traffic congestion, improves commuter travel times, lowers vehicular emissions, and enhances public safety. Commuters receive dynamic route suggestions, while traffic authorities can better manage roadways based on live and forecasted data. |
|  | Business Model (Revenue Model) | Can be offered to municipal corporations, smart city initiatives, and traffic authorities via a subscription-based SaaS model. Also, partnerships with navigation app providers for premium traffic prediction services and consulting for infrastructure planning. |
|  | Scalability of the Solution | Highly scalable as it can integrate additional data sources (like live traffic sensors, CCTV feeds, events data) and be deployed for multiple cities. The ML model and web app structure are modular, allowing easy upgrades, new feature integrations, and cloud-based deployment for wider accessibility. |