**Project Design Phase**

**Proposed Solution Template**

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| Date | 20 June 2025 |
| Team ID | LTVIP2025TMID41886 |
| 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.

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| **S.No.** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | Increasing urban traffic congestion cause delays, fuel wastage, and pollution. Existing traffic management systems lack accurate volume prediction methods. There is a need for an intelligent system that can estimate traffic volume in advance using historical data to support better planning and control. |
|  | Idea / Solution description | The project aims to build a machine learning based web application that can predict traffic volume using historical traffic data. The system includes data preprocessing, model training, and deployment via a user-friendly web interface using Flask and HTML. It allows users to uplode data, view predictions, and analyze visual charts. |
|  | Novelty / Uniqueness | Unlike traditional system that rely on manual traffic monitoring or sample threshold-based tools, this solution uses predictive machine learning algorithms to offer real-time, data-driven traffic volume forecasting. The integration of visualization tools and ease of use adds uniqueness to the system. |
|  | Social Impact / Customer Satisfaction | The solution can significantly improve public travel experience by reducing waiting time and traffic congestion. It can be used by urban planners, traffic police, and transport departments for better infrastructure management and policy-making, leading to higher public satisfaction and smoother transport flow. |
|  | Business Model (Revenue Model) | This solution can be provided as a subscription-based service to traffic developments, smart city agencies, or urban development organizations. Additional revenue can be generated through partnership with navigation apps, transportation companies, and consulting services. |
|  | Scalability of the Solution | The system is scalable as it can be extended to accept real-time data from traffic sensors or IOT devices. It can also be deployed on cloud platform for broader usage across multiple cities or integration with smart traffic signal systems in future developments. |