

Project Design Phase
Proposed Solution Template

Date	15 February 2025
Team ID	LTVIP2025TMID36588
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
1.	Problem Statement (Problem to be solved)	Inaccurate and manual methods of estimating traffic volume lead to congestion, poor urban planning, and inefficient traffic management. Real-time, automated solutions are required to predict traffic volume accurately.
2.	Idea / Solution description	Traffictelligence uses machine learning models (e.g., XGBoost, LSTM) trained on historical and live traffic data (vehicle counts, time, weather, etc.) to estimate traffic volume per road segment. The model provides real-time predictions that can be integrated with traffic control systems.
3.	Novelty / Uniqueness	Unlike traditional systems that rely solely on sensor data or static rules, Traffictelligence integrates ML with temporal analysis for better accuracy. It adapts to dynamic urban conditions and provides segment-wise forecasting with high precision.
4.	Social Impact / Customer Satisfaction	Reduces traffic congestion and travel time, improves commuter satisfaction, lowers emissions, and aids city planners and authorities in data-driven infrastructure decisions.
5.	Business Model (Revenue Model)	SaaS model for municipalities, traffic management authorities, logistics firms, and smart city infrastructure providers. Offers tiered subscriptions based on number of intersections, data usage, and API access.
6.	Scalability of the Solution	Can be deployed across cities or regions with minimal hardware dependency. Easily scalable through cloud infrastructure and API integration with existing smart city platforms.