

IDEATION PHASE

Problem Statement

Date	26-06-2025
Team ID	LTVIP2025TMID45015
Project Name	TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning
Maximum Marks	2 marks

With the increasing number of vehicles on roads, urban areas experience growing challenges in managing traffic efficiently. Issues such as peak-hour congestion, delays caused by unpredictable weather, and inefficient routing have become everyday problems for commuters and urban planners. Traditional traffic control systems often lack predictive power and adaptability.

Despite the availability of traffic data, there is limited use of machine learning-based solutions in active prediction and congestion management. Additionally, decision-makers and the general public have limited access to tools that translate this data into meaningful, actionable insights.

TrafficTelligence addresses this gap by offering an intelligent prediction model that utilizes weather, date-time, and road condition features to estimate traffic volume. This can help:

- Alert users or authorities about expected congestion
- Support smart routing and urban traffic control
- Enable data-driven decisions in transport infrastructure planning

Customer Problem Statement Template

I am

A commuter, city planner
or traffic officer

I'm trying to

Predict and manage
traffic flow efficiently to
reduce congestion
and travel delays

But

I lack access to
accurate, real-time
traffic forecasting tools

Because

Congestion is
unpredictable
existing traffic systems
are reactive, and
manual monitoring
lacks precision

Which makes me feel

Stressed, dissatisfied,
and frustrated by
continual traffic
bottlenecks and
inconvenient
commutes