Project Design Phase
Problem – Solution Fit Template

Date	19 June2025
Team ID	**LTVIP2025TMID45739**
Project Name	**TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning**
Maximum Marks	2 Marks

🚦 Problem–Solution Fit: Traffic Telligence

Definition:

Traffic Telligence achieves Problem–Solution Fit by addressing the daily chaos of urban traffic management with a real-time, AI-driven system. It aligns with the needs of city authorities and commuters by offering intelligent insights that reduce congestion and improve traffic flow.

🎯 Purpose:

- ✅ **Solve Real Urban Challenges:**
  Address the critical problems of traffic congestion, inefficient signal timings, and lack of real-time data in a way that aligns with the current state and constraints of traffic authorities.
- 🚀 **Drive Faster Adoption:**
  Leverage existing behavior—such as reliance on CCTV, Google Maps, and manual monitoring—by offering a system that fits into and enhances current workflows.
- **Sharpen Communication Strategy:**
  Communicate using real triggers like public frustration, media reports, and smart city initiatives. Highlight benefits such as reduced response time and optimized traffic flow.
- 🤝 **Build Trust and Daily Engagement:**
  Earn credibility by solving everyday traffic problems that affect commuters and emergency responders, and position the solution as reliable and proactive.
- 🔄 **Improve the Current System:**
  Understand how cities currently manage traffic (manual rerouting, basic signal timers) and deliver a future-ready upgrade that requires minimal behavioral change but delivers maximum efficiency.

1. CUSTOMER SEGMENT(S) — CS

- Torget users:
- City municipaltties
- Urban traffic management authoritves·
- Commuters & drivers in metro areas
- Emergency services (indirectly)

6. CUSTOMER CONSTRAINTS — CC

- Budget restrictions in city traffic peptartments
- Lack of technical knowledge among staff
- Resistance to new tech adoption
- Infrastructure limitations
- Network reliability for IoT deployment·

5. AVAILABLE SOLUTIONS — AS

- Existing approaches:
- Static signal timers
- CCTV monitoring withhout analytics
- Manual rerouting by traffic polize
- Public apps like Google Maps of Waze

2. JORS-TO-BE-DONE / PROBLEMS

- Managing increasing traffic congestion
- Delays in identifying traffic boltlenecks
- Inefficent traffie signal timings
- Lack of real 4ime, actionable trafi insights
- Inability to hardle peak hour ttaffic smartly

9. PROBLEM ROOT CAUSE

Current behawiros incuke rout

- Using outdated CCTV/signal system manually
- No real time data analytles or prediction model
- City groweh outpaces infrastructure upgrades
- Poor integration between traffic sensors, systems and city doshboards.

7. BEHAVIOUR — BE

Current behaviows incloude:

- Using outdated CCTV/signal sustems manually
- Reacting to jams after congestion builds up
- Relying on traffc police & on grownd staff
- Public using Google Maps for alternate routes (end-user level)

3. TRIGGERS — TR

- Public complaints about daily traffic jams
- Media reports highlighting traffic chass
- High-profile traffic incidents (ambulances
- Suicessful implementation in another crty
- Government push for "Smart City' initiatwe:

10. YOUR SOLUTION — SL

Traffic Telligence

- A smart AI-based traffic intellgence system
- Real-time data from sensors, cameras & GP£ sos.
- Predicts congestion, suggests rerouting, adjusts signal timings

5. CHANNELS OF BEHAVIOUR — CH

- 8.1 ONLINE
  - Accassing dashboards via wed platform
  - Viewing reab timoatorts a congection heatmaps
  - Autharities get ernall/shlo narrifications
  - Users get app alerts (if integrated)

8.3. OFFLINE

- Adjusting signal behaviour at junctions
- Traffic police using hondheld devices/tablets
- Local community meetings/policy sessions

4. EMOTIONS· BEFORE / AFTER

Frustrated, helpless, stressed, angry

Feeling powerless in traffic of emergency

BEFORE: Frustrated, safe, stresss

Efficient, smoother commute experience

Authorities feel empowered with real-time data