

**Project Design Phase**  
**Problem – Solution Fit Template**

Date	19 June 2025
Team ID	LTVIP2025TMID40962
Project Name	<b>TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning</b>
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.

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#### **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.

<b>1. CUSTOMER SEGMENT(S)</b>	<b>CS</b>	<b>6. CUSTOMER CONSTRAINTS</b>	<b>CC</b>	<b>5. AVAILABLE SOLUTIONS</b>	<b>AS</b>
<ul style="list-style-type: none"> <li>Target users:</li> <li>City municipalities</li> <li>Urban traffic management authorities</li> <li>Commuters &amp; drivers in metro areas</li> <li>Emergency services (indirectly)</li> </ul>		<ul style="list-style-type: none"> <li>Budget restrictions in city traffic departments</li> <li>Lack of technical knowledge among staff</li> <li>Resistance to new tech adoption</li> <li>Infrastructure limitations</li> <li>Network reliability for IoT deployment</li> </ul>		<ul style="list-style-type: none"> <li>Existing approaches:</li> <li>Static signal timers</li> <li>CCTV monitoring without analytics</li> <li>Manual rerouting by traffic police</li> <li>Public apps like Google Maps or Waze</li> </ul>	
<b>2. JORS-TO-BE-DONE / PROBLEMS</b>		<b>9. PROBLEM ROOT CAUSE</b>		<b>7. BEHAVIOUR</b>	<b>BE</b>
<ul style="list-style-type: none"> <li>Managing increasing traffic congestion</li> <li>Delays in identifying traffic bottlenecks</li> <li>Inefficient traffic signal timings</li> <li>Lack of real-time, actionable traffic insights</li> <li>Inability to handle peak hour traffic smartly</li> </ul>		<ul style="list-style-type: none"> <li>Current behaviors include route</li> <li>Using outdated CCTV/signal system manually</li> <li>No real time data analytics or prediction model</li> <li>City growth outpaces infrastructure upgrades</li> <li>Poor integration between traffic sensors, systems and city dashboards.</li> </ul>		<ul style="list-style-type: none"> <li>Current behaviors include:</li> <li>Using outdated CCTV/signal systems manually</li> <li>Reacting to jams after congestion builds up</li> <li>Relying on traffic police &amp; on ground staff</li> <li>Public using Google Maps for alternate routes (end-user level)</li> </ul>	
<b>3. TRIGGERS</b>	<b>TR</b>	<b>10. YOUR SOLUTION</b>	<b>SL</b>	<b>5. CHANNELS OF BEHAVIOUR</b>	<b>CH</b>
<ul style="list-style-type: none"> <li>Public complaints about daily traffic jams</li> <li>Media reports highlighting traffic chaos</li> <li>High-profile traffic incidents (ambulances)</li> <li>Successful implementation in another city</li> <li>Government push for "Smart City" initiative</li> </ul>		<b>Traffic Telligence</b> <ul style="list-style-type: none"> <li>A smart AI-based traffic intelligence system</li> <li>Real-time data from sensors, cameras &amp; GPS</li> <li>Predicts congestion, suggests rerouting, adjusts signal timings</li> </ul>		<b>8.1 ONLINE</b> <ul style="list-style-type: none"> <li>Accessing dashboards via web platform</li> <li>Viewing real-time routers or congestion heatmaps</li> <li>Authorities get email/shield notifications</li> <li>Users get app alerts (if integrated)</li> </ul> <b>8.3. OFFLINE</b> <ul style="list-style-type: none"> <li>Adjusting signal behaviour at junctions</li> <li>Traffic police using handheld devices/tablets</li> <li>Local community meetings/policy sessions</li> </ul>	
<b>4. EMOTIONS- BEFORE / AFTER</b>		<b>BEFORE:</b> Frustrated, safe, stressed Efficient, smoother commute experience Authorities feel empowered with real-time data			