**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| Date | 24 June 2025 |
| Team ID | LTVIP2025TMID35493 |
| Project Name | TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Data Upload | |  | | --- | |  |  |  | | --- | | - Upload traffic CSV files | |
| FR-2 | Data Preprocessing | - Clean and normalize traffic data |
| FR-3 | Traffic Pattern Analysis | - Apply trained ML model to predict congestion |
| FR-4 | Result Visualization | -Display results in graphs/charts |
| FR-5 | Model Training (Admin) | - Train models using historical traffic datasets |
| FR-6 | Authentication | - User login system |
| FR-7 | Dashboard | - Interactive dashboard for result insights |
| FR-8 | Report Generation | -Generate PDF reports for analyzed datasets |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | Interface should be intuitive and suitable for traffic analysts and municipal planners. |
| NFR-2 | **Security** | Secure file uploads, use HTTPS, and implement authentication for access control. |
| NFR-3 | **Reliability** | Ensure accurate predictions and robustness against bad or incomplete data files. |
| NFR-4 | **Performance** | Analyze a dataset and show predictions within 5 seconds (for average-sized files). |
| NFR-5 | **Availability** | Application should maintain 99.5% uptime and ensure reliable performance during usage spikes. |
| NFR-6 | **Scalability** | Should scale to handle high traffic from multiple users uploading large datasets. |