SMARTTRAFFIC AI PROJECT
FIELD VISIT REPORT

Visited Station: Toll-Weigh Bridge Station
Date of Visit: Monday, 30th June 2025
Prepared By: [Your Name / Team]
Date of Report: [Today's Date]

1. EXECUTIVE SUMMARY

On 30th June 2025, the SmartTraffic AI team conducted a field visit to the Toll-Weigh Bridge Station to understand the operations of the existing traffic and weighing system, identify its strengths and gaps, and gather insights for enhancing the SmartTraffic AI project. The visit revealed the operational architecture, sensor technologies, data flow, and management practices at the station. Key challenges noted include sensor latency, communication breakdowns, and manual data review inefficiencies. The visit underscored opportunities for local AI-driven solutions to address these issues.

2. INTRODUCTION

Purpose of Visit:
The primary goal of this field visit was to gain firsthand understanding of how traffic management and weighing systems operate on the ground, in order to inform the development of SmartTraffic AI. The visit aimed to identify operational processes, challenges, and opportunities for technological improvements.
Scope:
The team focused on observing the station's system architecture, sensor technologies, communication infrastructure, data management, and operational challenges.

3. METHODOLOGY

- Reported to station at 9:00 AM, signed data consent forms.
- Field guidance provided by Fred (System Administrator).
- Data gathered via observation, interviews, and review of internal processes.
- Presentation of SmartTraffic AI project made to the OCS.

4. DETAILED FINDINGS

Station Structure: Two departments: Technical and Police.
Technologies: Inductive loops, CCTV, ANPR, RFID/V2I, WIM system.
Data: Weight, axle config, speed, direction, number plates.
Communication: LAN with fiber optic, radio, WAN for external sharing.
Challenges: Communication issues, sensor lag, manual data review.
Opportunities: AI-driven permit verification, queue management, anomaly detection.

5. CONCLUSION

The visit provided critical insights into the station's structure, technology stack, and operational challenges. There is significant opportunity for SmartTraffic AI to contribute local, AI-enabled solutions to improve accuracy, efficiency, and scalability in traffic and weighbridge management.