



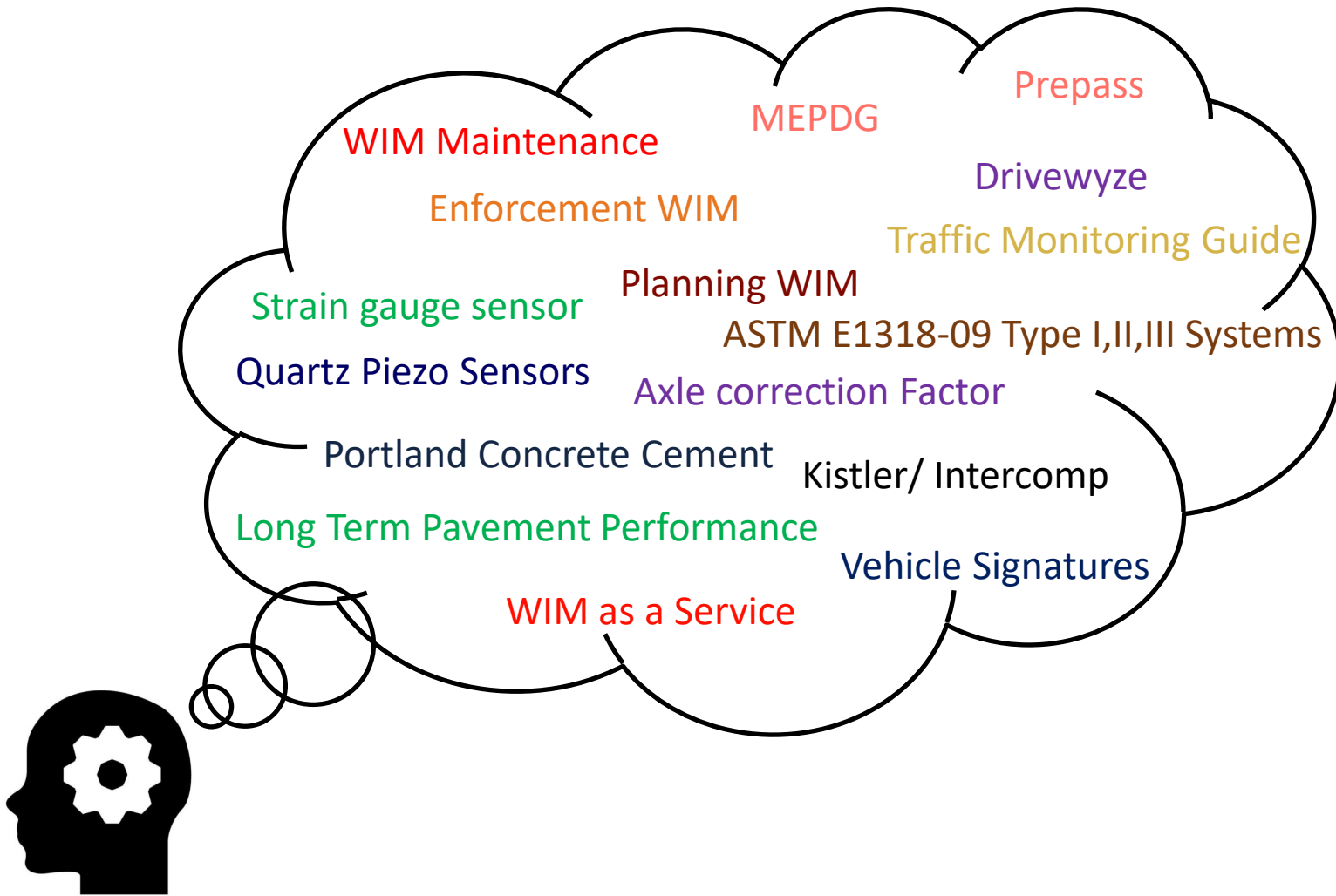
Weigh In Motion WIM

Randall Emilaire | TDOT Manager

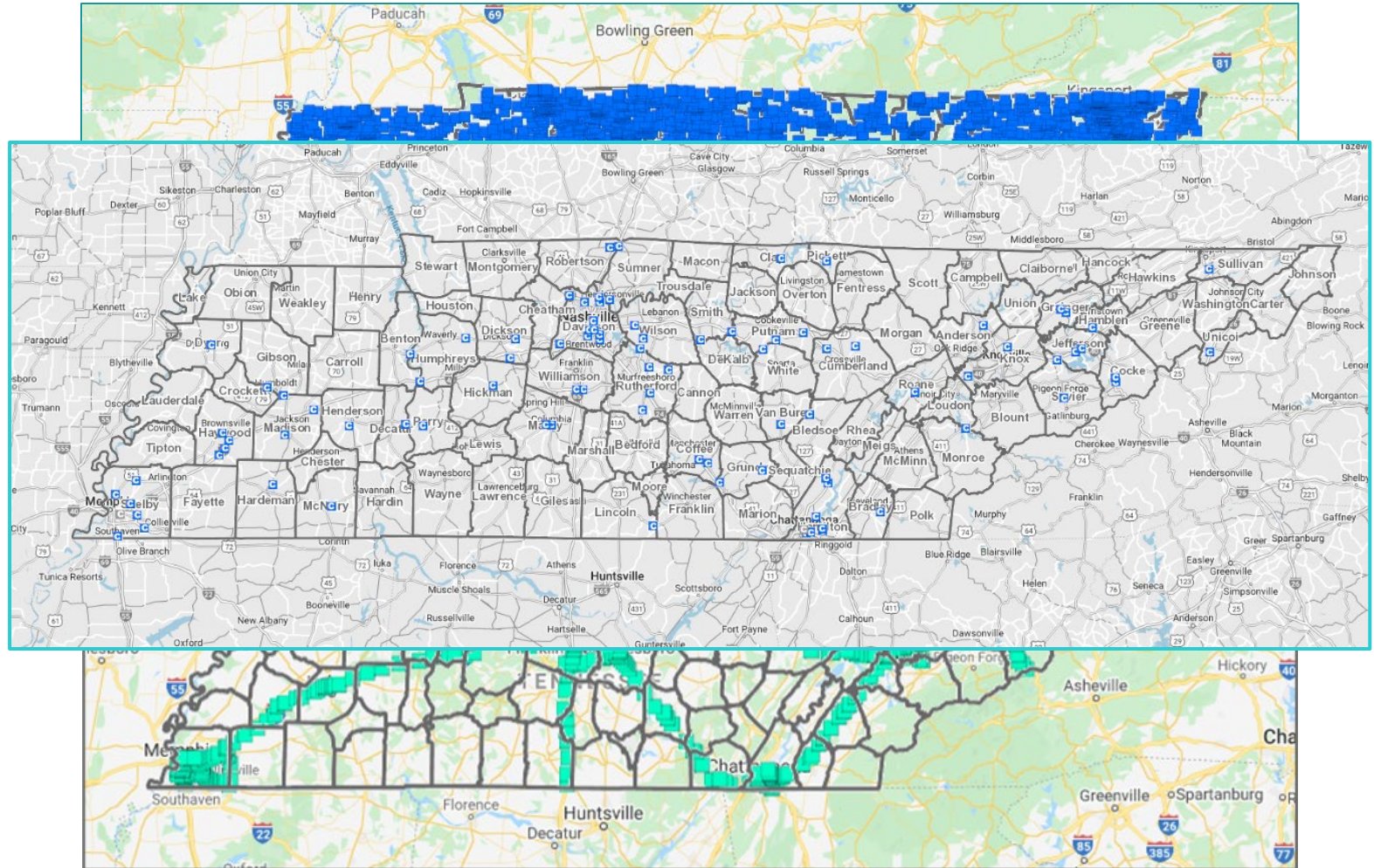
Planning Data & Systems

April 30, 2025

Weigh In Motion Terminology



Data Collection Strategy



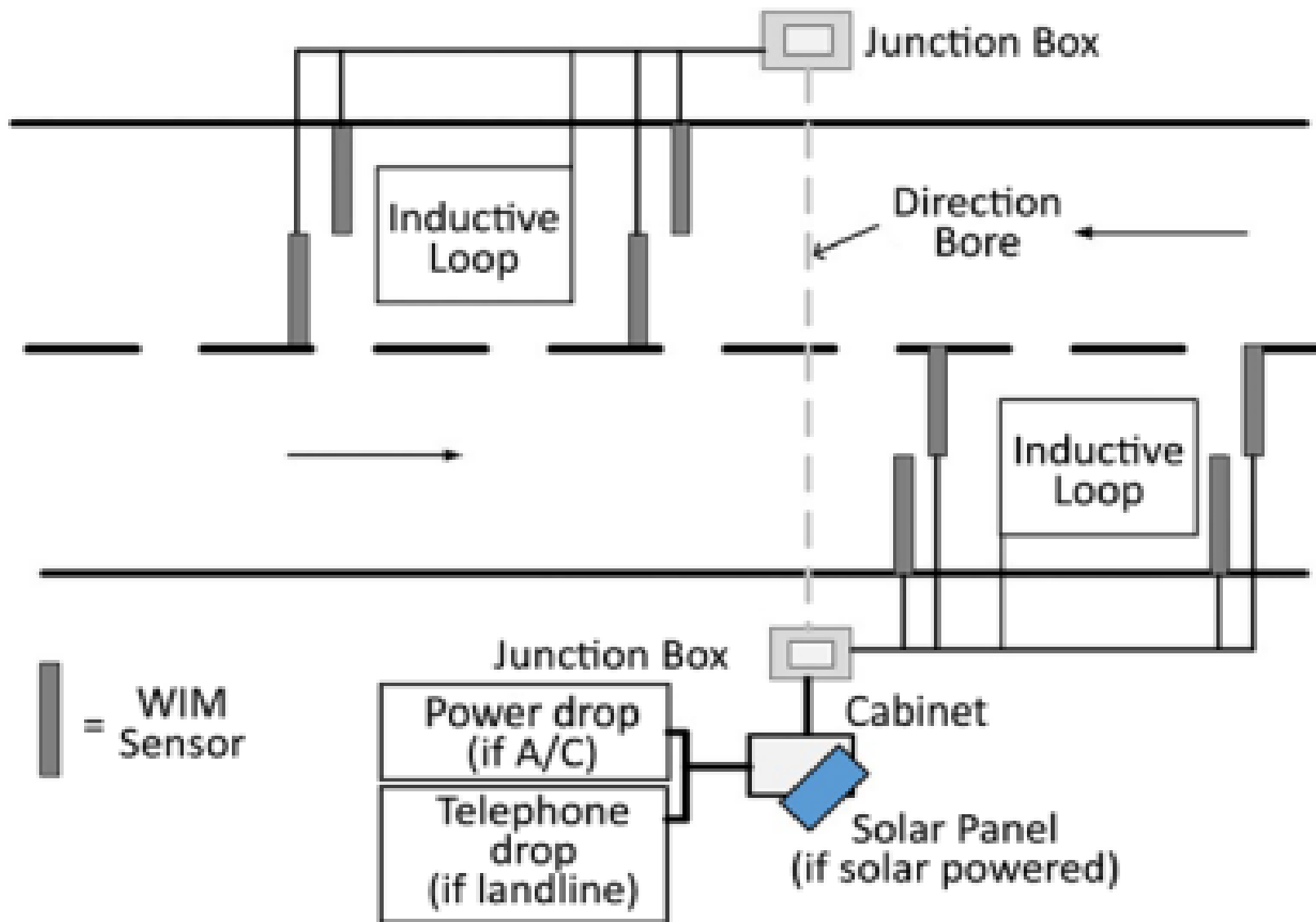
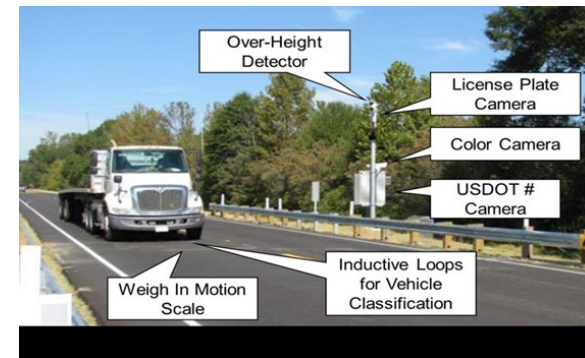
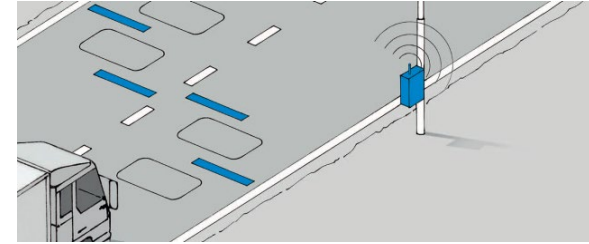


Figure 1 – Typical 2-Lane Bidirectional WIM System Design

What is WIM?

- Weigh-in-motion (WIM) is a **primary technology** used for **monitoring vehicle weights and axle loads**.
- WIM devices collect **traffic volume, axle spacings, vehicle classification, and speed data**.
- **Highway planning, pavement and bridge design, freight movement studies, motor vehicle enforcement, and legislative and regulatory studies.**
- Enforcement officers use **heavy truck axle load data to plan enforcement activities**, as well as to **screen and identify specific vehicles that violate weight limits** during real time on-site monitoring.



HPMS Tr

- AADT (Annual Average Daily Traffic)
- AADT_SINGLE Unit
- PCT_DH_S (Percent of Daily Highway Trucks and Trailers)
- AADT_COMBINATION Unit
- PCT_DH_COMBINATION (Percent of Daily Highway Combination Unit Trucks)
- K_FACTOR (K Factor)
- DIR_FACTOR (Directional Factor)
- Future_AADT (Future AADT)
- Vehicle_Summary (Vehicle Summary)

Field Name	Data Type (characters)	Description	Valid Values	
BeginDate*	Date	Date at which the data becomes active	MM/DD/YYYY	
StateID*	Numeric (2)	State FIPS code	Up to two digits for the FIPS code**	
FSGroup*	Numeric (3)	Highway System Group	<i>Code</i>	<i>Description</i>
			100	Rural Interstate
			200	Rural Other Arterial (includes Other Freeways & Expressways, Other Principal Arterials, and Minor Arterials)
			300	Rural Other (includes Major Collectors, Minor Collectors, and Locals)
			110	Urban Interstate
			210	Urban Other Arterial (includes Other Freeways & Expressways, Other Principal Arterials, and Minor Arterials)
			310	Urban Other (includes Major Collectors, Minor Collectors, and Locals)
IsUrban	Text	Rural or Urban	Code N for Rural, or Y for Urban (population of at least 5,000), as determined by the Census	
PctMotorcycles	Decimal (5,2)	Percent of motorcycle VMT (Vehicle Class 1)	Code percentage as 0.00 to 100.00	
PctCars	Decimal (5,2)	Percent of passenger car VMT (Vehicle Class 2)	Code percentage as 0.00 to 100.00	
PctLightTrucks	Decimal (5,2)	Percent of light truck VMT (Vehicle Class 3)	Code percentage as 0.00 to 100.00	
PctBuses	Decimal (5,2)	Percent of bus VMT (Vehicle Class 4)	Code percentage as 0.00 to 100.00	
PctSingleUnit	Decimal (5,2)	Percent of single-unit truck VMT (Vehicle Classes 5-7)	Code percentage as 0.00 to 100.00	
PctCombination	Decimal (5,2)	Percent of combination unit truck VMT (Vehicle Classes 8-13)	Code percentage as 0.00 to 100.00	
Comments	VarChar (100)	Comment for State use	Variable text up to 100 characters; this field is optional	

*Primary Key

**[FIPS codes](#)

AADT)
Single Unit

n the

Weigh In Motion in TN

- 15 WIM Sites statewide (30 stations)
- Enforcement and Planning Sites
- Installation phase
- Assist THP, TDOT, stakeholders, partners
- PD will meet HPMS data submission requirements
- Weight, Volume, Class, Speed
- Data will be autopollled into TNTIMES

WIM locations Statewide

Statewide Mainline Weigh-in-Motion (WIM) Program Site Locations



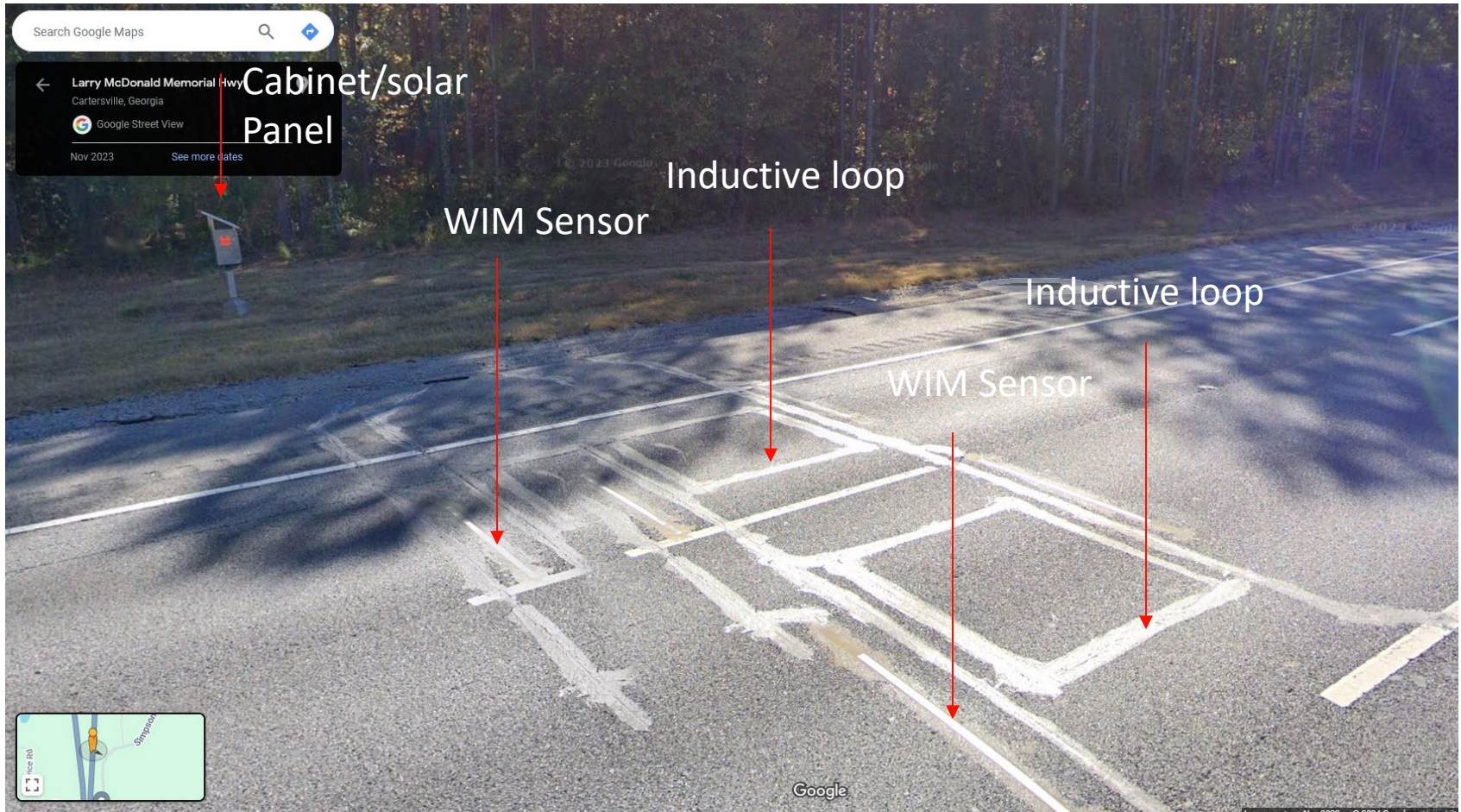
LEGEND

-  Data Collection Site
-  Data/Enforcement Site

Source: RK&K Sear Report TDOT

21 Planning Sites / 9 Enforcement Sites to ATSM 1319 TYPE III Stds

Georgia WIM example



Georgia WIM

WIM Data Storage - TN-TIMES

- TN TIMES

TN Traffic Information Management and Evaluation System

- Storage of Traffic Data

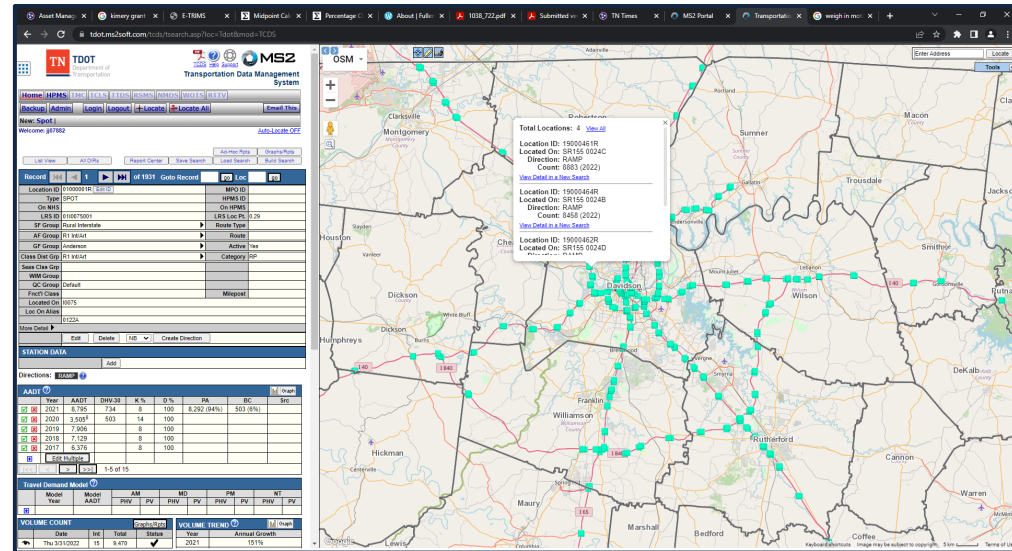
- Volume
- Class
- Speed
- Weight

- Reports/ Reporting tools

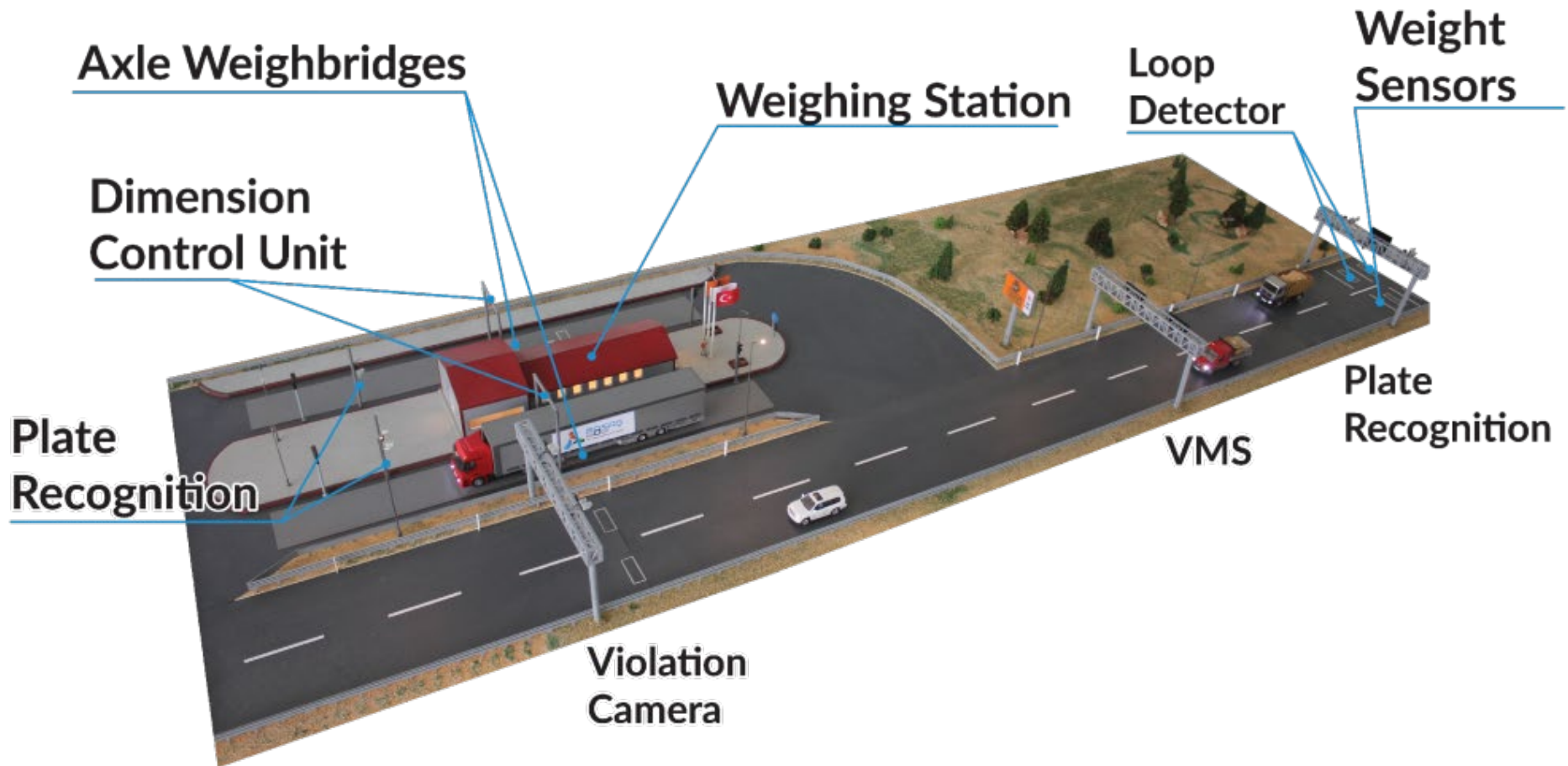
- Graphs and Charts

- Data downloads

- Federal Reporting



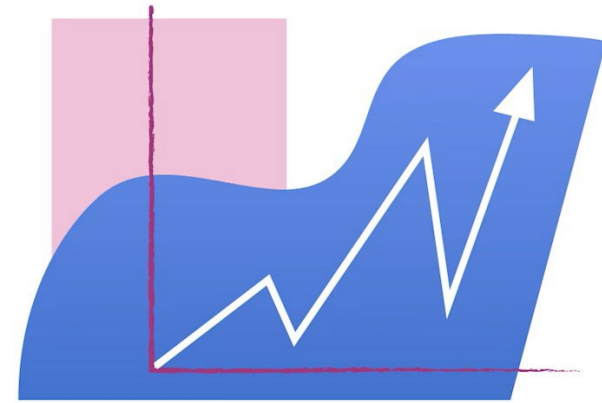
Enforcement Sites

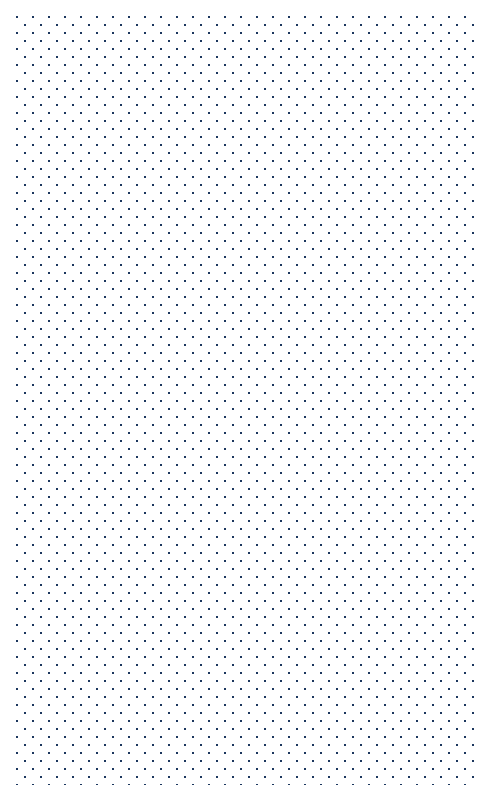


[YouTube Video Enforcement](#)

WIM Installation Progress (to date)

- Installation started in 2024
- Potential completion 2026
- 28 sites – Interstate/ SR
- WIM Sensors, conduit, cabinets, wires
- Poles, Cabinets, Power
- 18 sensors installed (04/29/2025)
- Connection to TNTIMES
- Auto-polled Data
- Calibration
- Enforcement





TM

Questions