

I-95 Corridor Coalition, New York State DOT & USDOT

Commercial Vehicle Infrastructure Integration Program

presented to

2008 Smart Roadside Workshop

presented by

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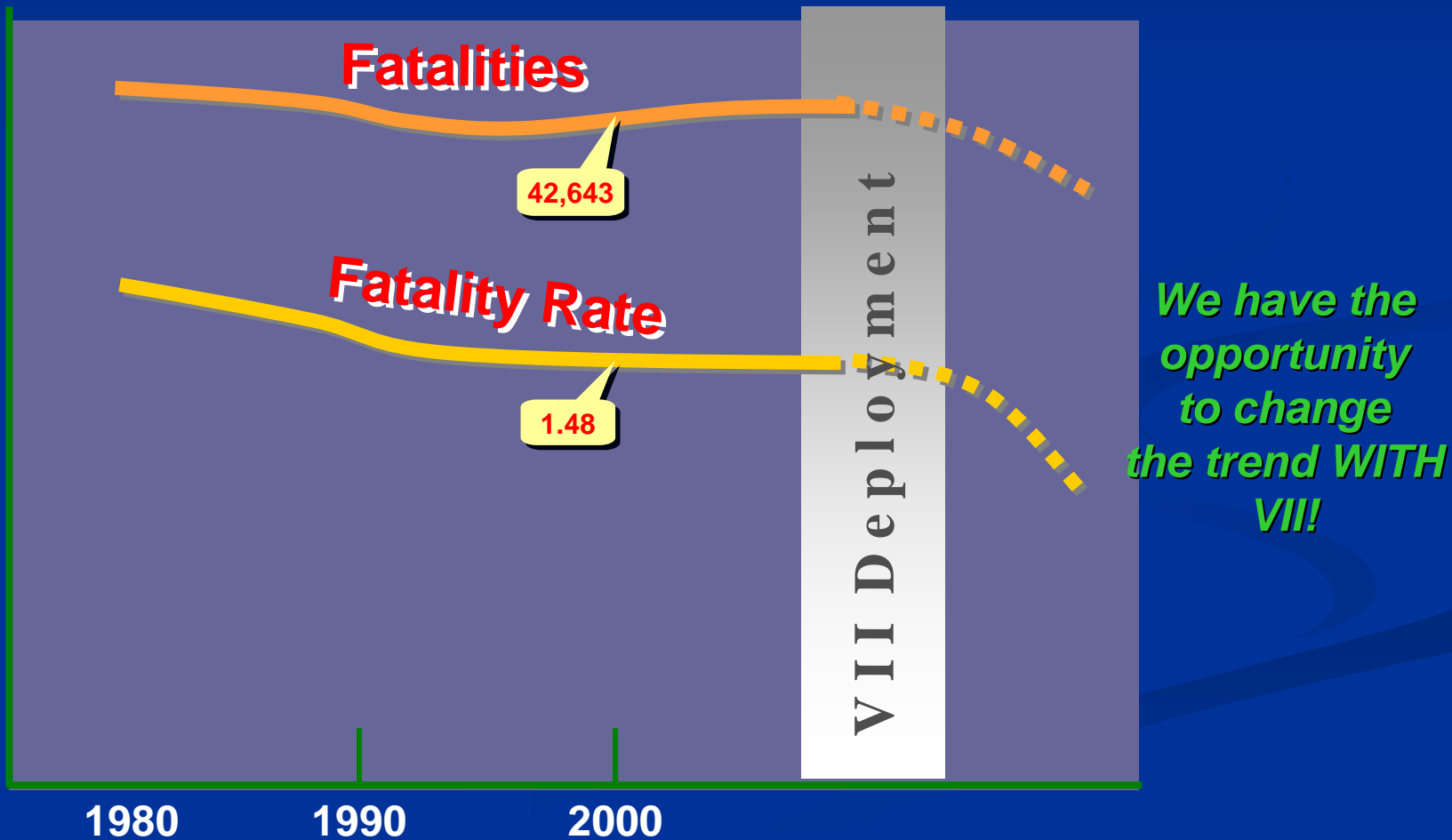
Vehicle Infrastructure Integration (VII)

- Similar to E-Z PASS technology (DSRC)
- 915 MHz \leftrightarrow 5.9 GHz (FCC & \$\$\$!)
- Extremely high speed, high capacity, low latency, highly secure data transmission
- “Smart vehicles, smart highways”

Vehicle Infrastructure Integration (VII)

- E-Z Pass, Navigation & “ON STAR” and much, much more!
- “Internet” for the highway/transportation system
- Supports any vehicle/roadside communication
- Supports any vehicle to vehicle communication
- System vehicle control possible

VII Driving Forces: Safety



VII Can Enable a Wide Range of Applications!

■ Safety & Security Examples

- Lane/Road Departure
- Road Condition Warning
- Cargo/Container Tracking
- CV Driver ID/Verification
- CV Routing/Geo Fencing
- In-vehicle/signing
- Intersection collision avoidance
- Parking availability
- Overturn warning/control

■ Mobility Examples

- Traffic Probe Data
- Travel Time
- Tolling
- Incident/Accident Info.
- Electronic Payment
- Navigation/Directions



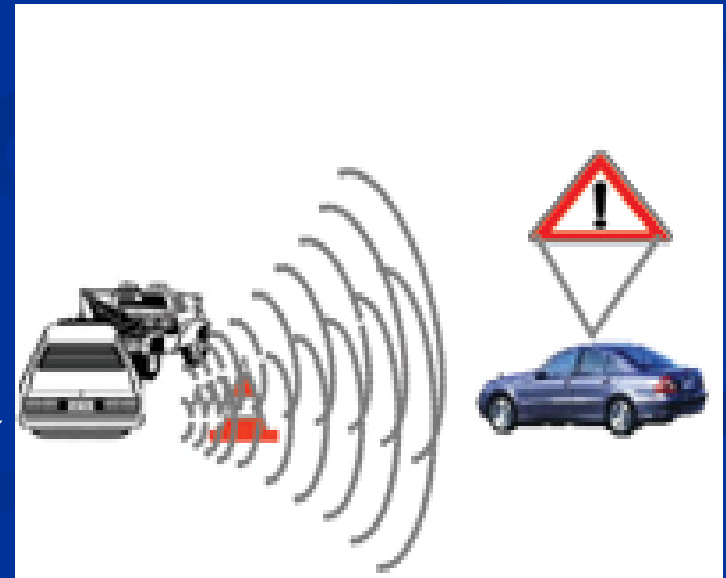
VII and 5.9 GHz DSRC in Action



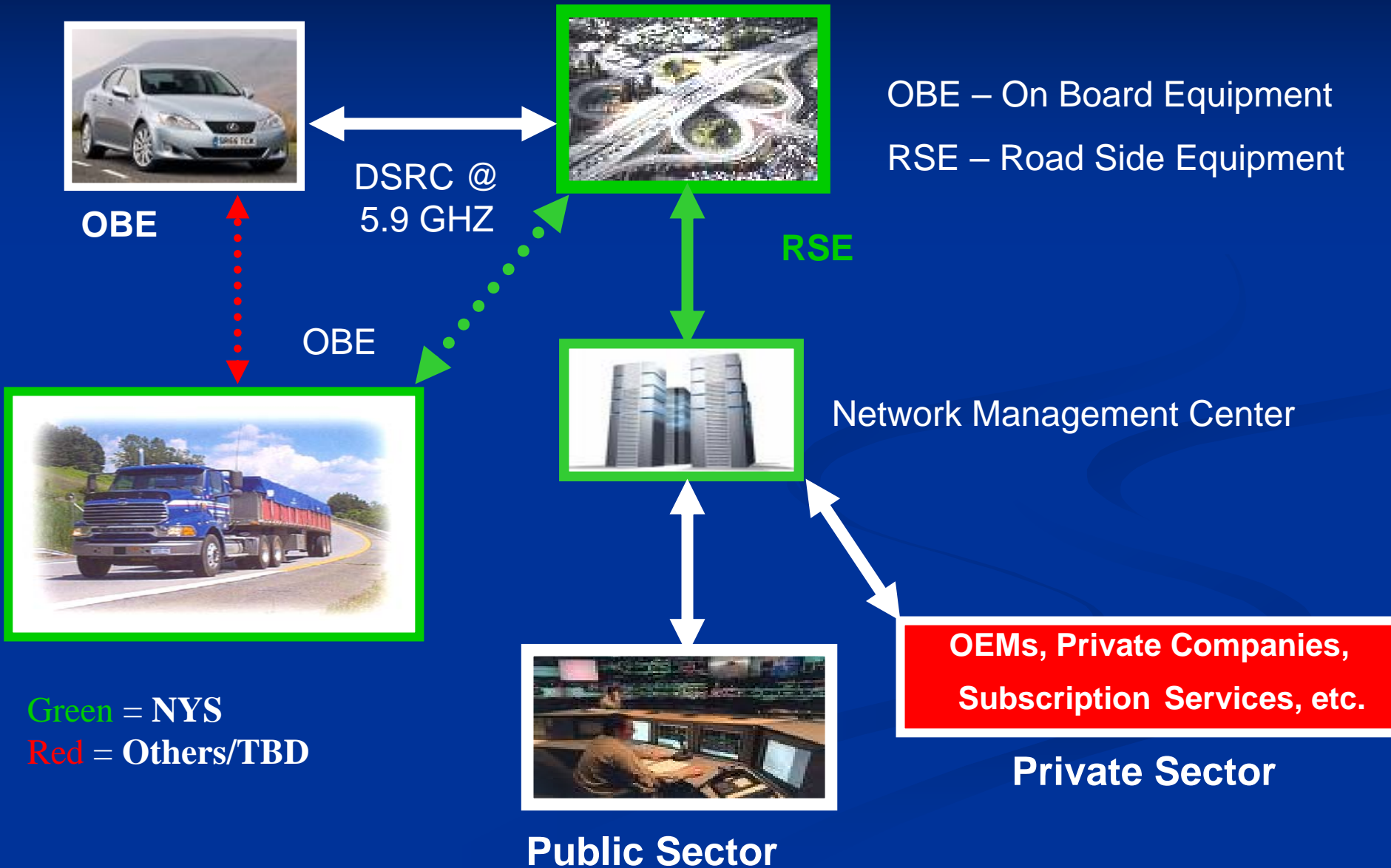
A car speeding toward a red light receives a safety alert. Others are warned that it is suddenly braking.

NO PLANS, initially, to make this work with Trucks or Busses

A disabled car and tow truck transmit hazard warnings to approaching vehicles.



Concept of VII W/**CVII**!



NYSDOT, I-95 & USDOT CVII Program

- Develop/Test CV VII compliant OBE system
- Build upon existing USDOT VII efforts, I-95 NC/NCHP/Volvo Truck Project and FMCSA's Wireless Vehicle Safety Inspection Project
- Develop/Test VII DSRC
 - ☞ CV Driver I.D and Verification (TWIC, Biometrics)
 - ☞ Test Wireless Vehicle Safety Inspection Information (brake condition, tire pressure, light status, etc.)
 - ☞ CV to Maintenance Vehicles communication
 - ☞ Roadside to CV work zone/accident warning w/iCone

CVII Program Requirements

- Complete interoperability!
- Communicate with any VII compliant vehicle or infrastructure
- Non-proprietary system design capable of duplication!
- USDOT's National VII Initiative utilizing DSRC 802.11p
- Integrate VII communications device w/SAE J1708 commercial vehicle data bus
- Compliant/utilizing the standard message sets SAE J1587, SAE J1939 and SAE 2735

VII Communications Device

- *Road Side Unit/Equipment (RSU/E: Multiband Configurable Networking Unit (MCNU 5.9 GHz DSRC and WiFi/4.9 GHz*
- *On-Board Units*
 - Lower cost
 - Integrated with CV data buss
 - VII 1609 networking software suite



MCNU

NYSTA, NYSDOT & I-95 CVII Program Status

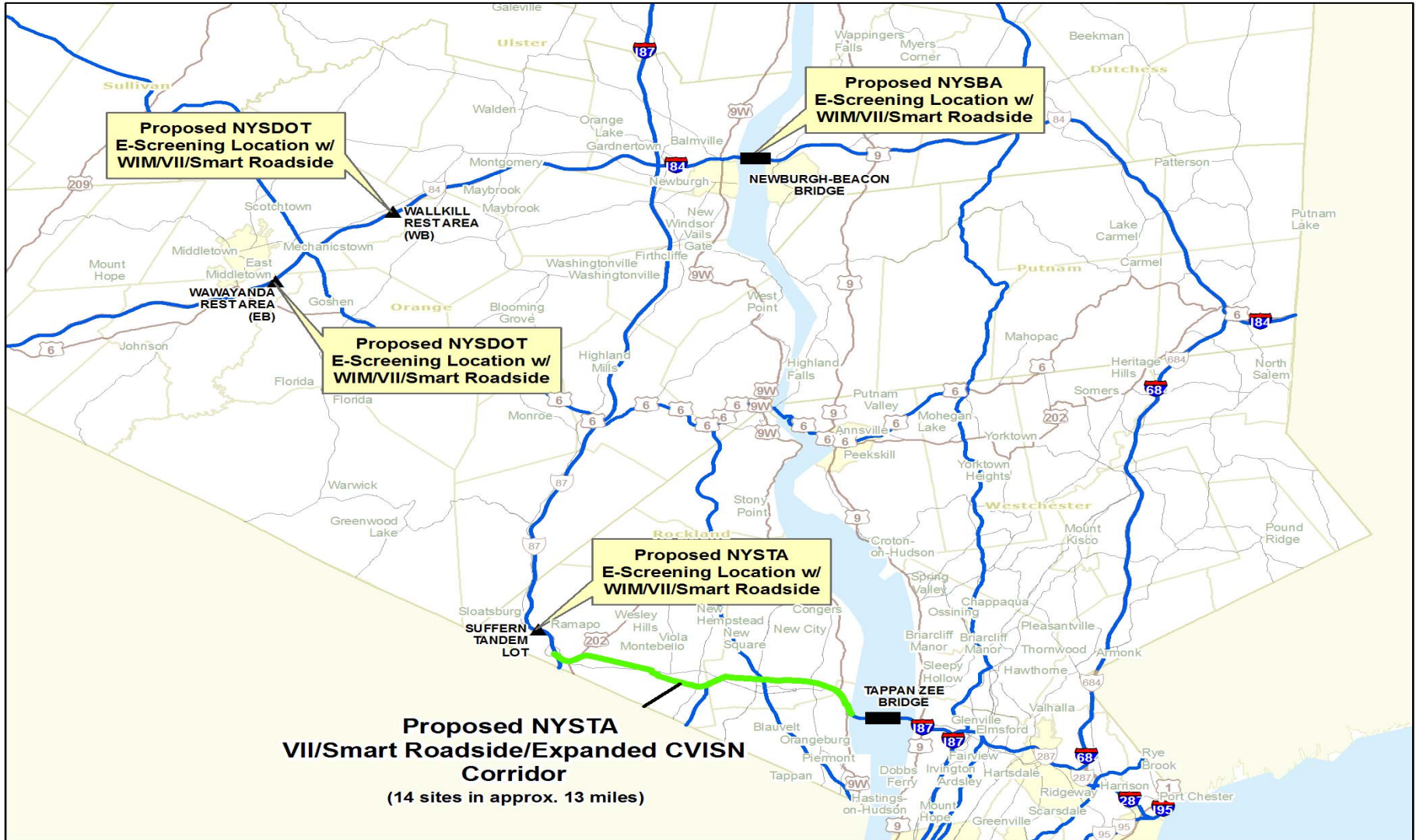
- RFP – Released Feb. 26,
- Responses received March 28, 2008
- Committee score/recommendation May, 2008
- Negotiate contract, start Summer, 2008
- I-95, NYSTA, Michigan DOT, Washington DOT, RITA JPO, FMCSA, FHWA and NYS Motor Truck Association

Related VII/CVII Activities

- 2008 ITS World Congress, Javitts Center, Manhattan
- November 16-20, 2008
- Three VII Corridors Being Developed
 - Manhattan Local Streets (NYCDOT/WC)
 - Long Island Expressway (NYSDOT/WC)
 - Spring Valley Corridor (Suffern to Tappan Zee Bridge)
- NYSBA I-95 Funded VII Tolling Project
- RITA RFP Response -\$3 Million



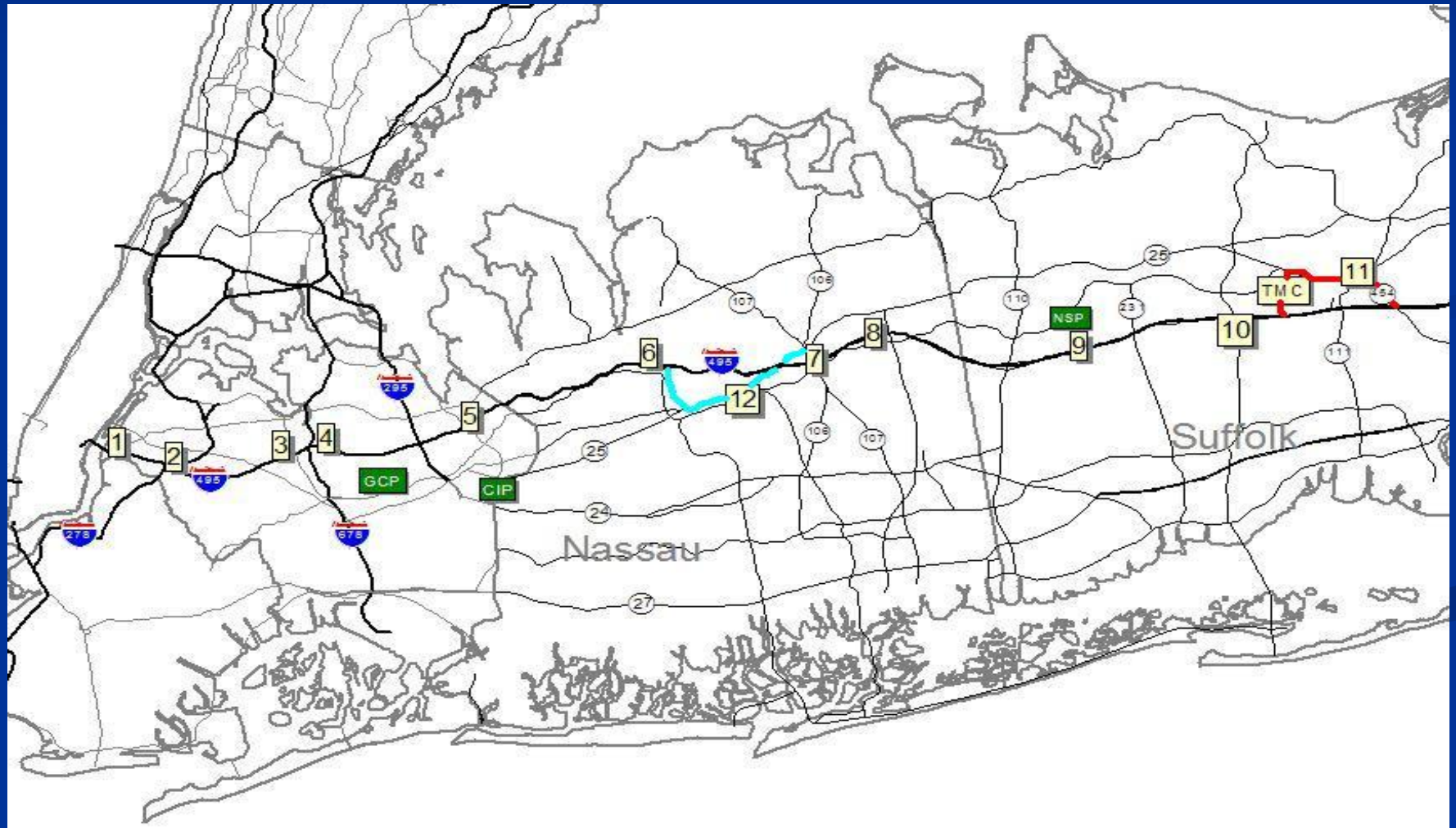
Commercial Vehicle Smart Roadside/VII E-Screening Corridor



NYSDOT

Long Island Expressway I-495

VII Test Bed

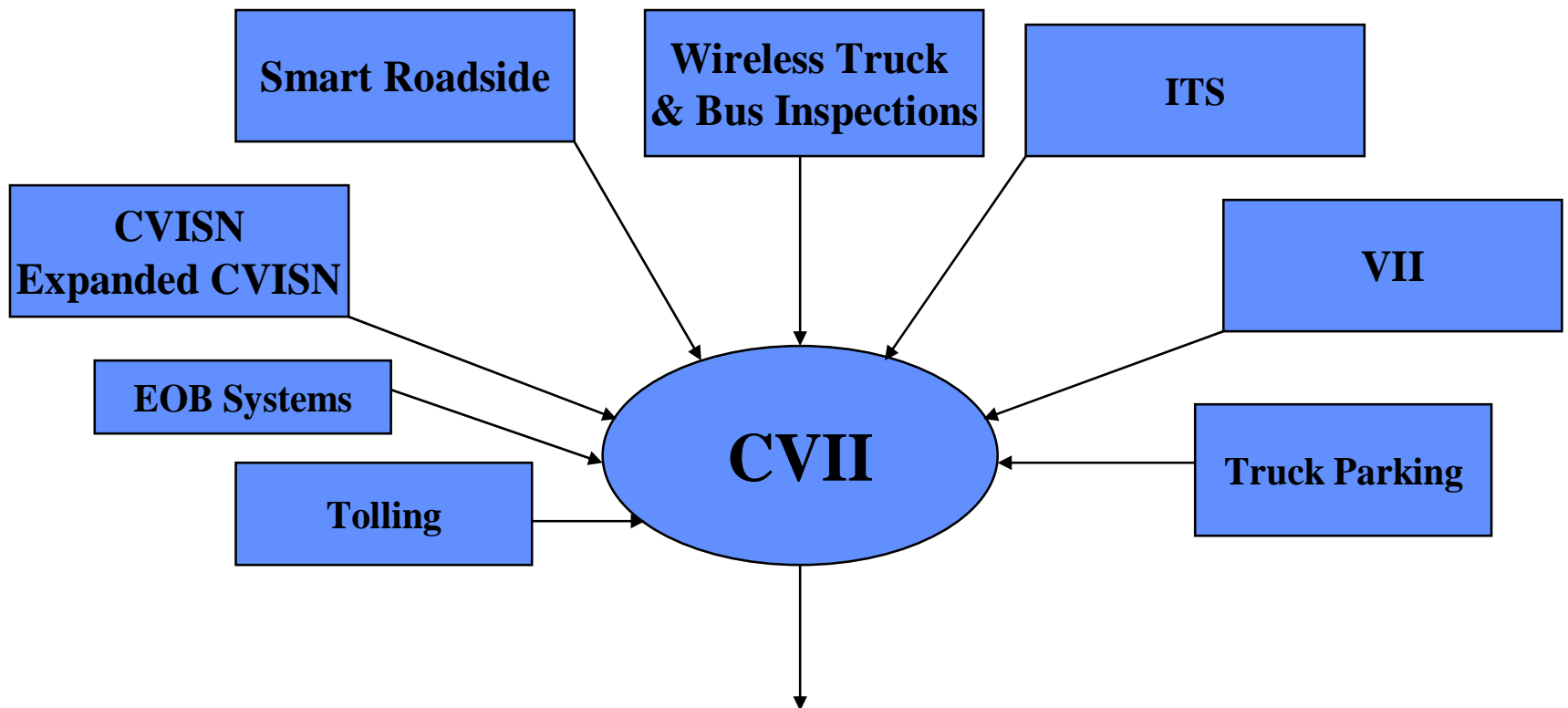


Expended NYS Commercial Vehicle Smart Roadside/VII E-Screening Corridors





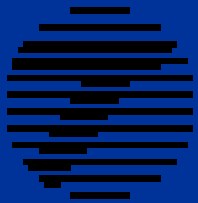
Convergence Opportunity with CVII



Mainline Automated Check of Driver Identification & Vehicle Safety Information Leading to Improved Screening and Roadside Enforcement

- ⊗ Real-time wireless communication of driver information (TWIC/biometrics identification and verification) and vehicle based safety data (tire pressure, brake status, seatbelt, etc.)
- ⊗ Infrastructure to vehicle data (e.g., road weather, work zone locations, speed reduction, accidents, etc.)

?? Questions ??



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