Vancouver Area Smart Trek Program Report

At a Glance:

- *Annual update on program, accomplishments, and ongoing activities*
- *The program links ITS technology/infrastructure and improving operation of the transportation system through agency collaboration and planning*

Regional Collaboration

- Supports federal requirements to develop and maintain a regional ITS architecture
- Supports federal CMP requirements that agencies collaborate on operational strategies
- Partnership has successfully cooperated on ITS projects, integration, communications infrastructure and operations planning
- Secured $24.1m in federal funding and $35.5m in total project dollars since 2001 through agency collaboration

Overall VAST Program

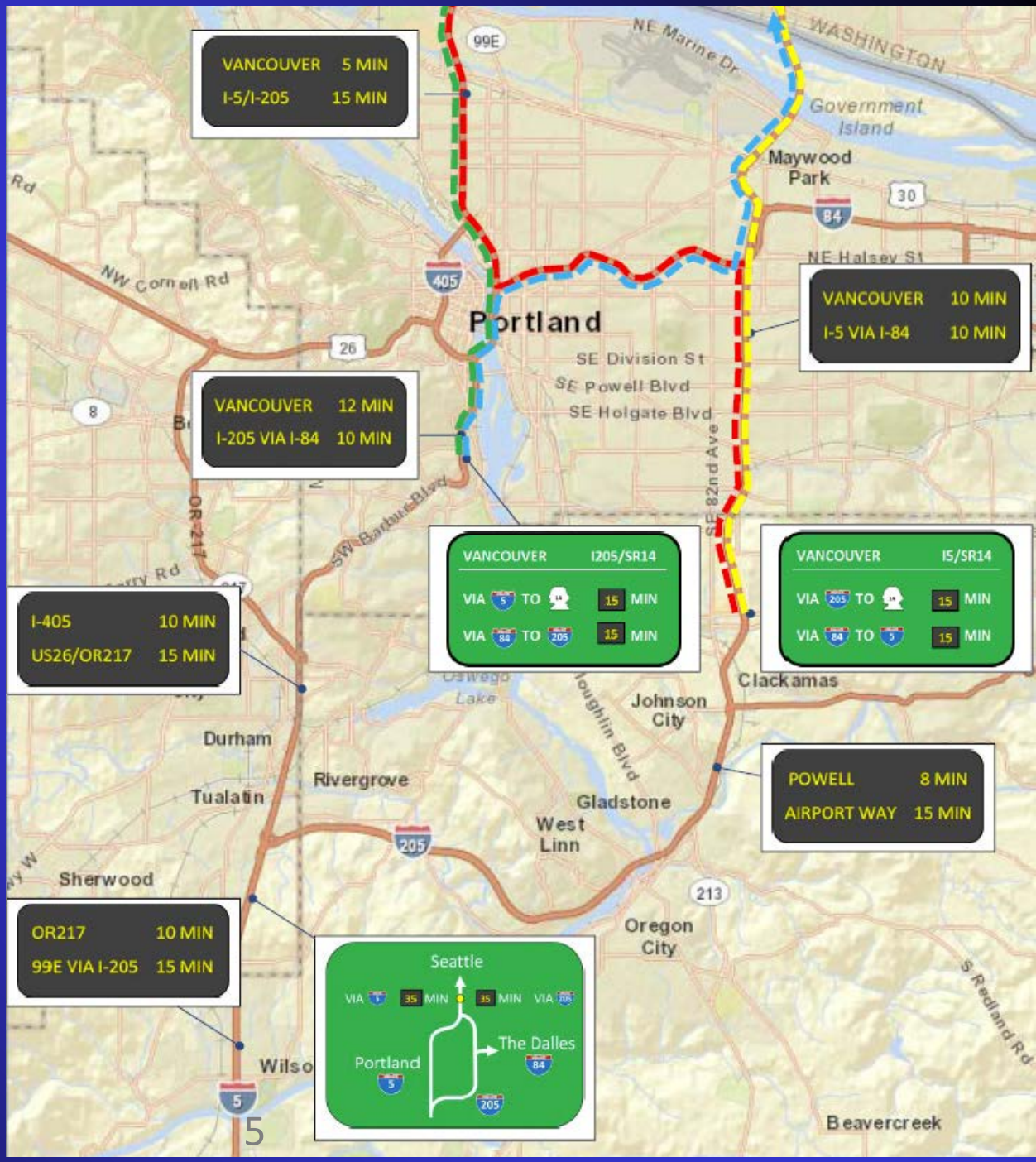
- Ongoing program coordination and management
- Manage committees
  - TSMO Steering Committee
  - VAST Steering Committee
  - Communications Infrastructure Committee
- Develop, review, endorse and fund operations projects

Successful Partnerships

- Bi-state Travel Time Project
- Transportation Data Archive
- Regional Communications Plan
- Agency Fiber Sharing and Asset Management

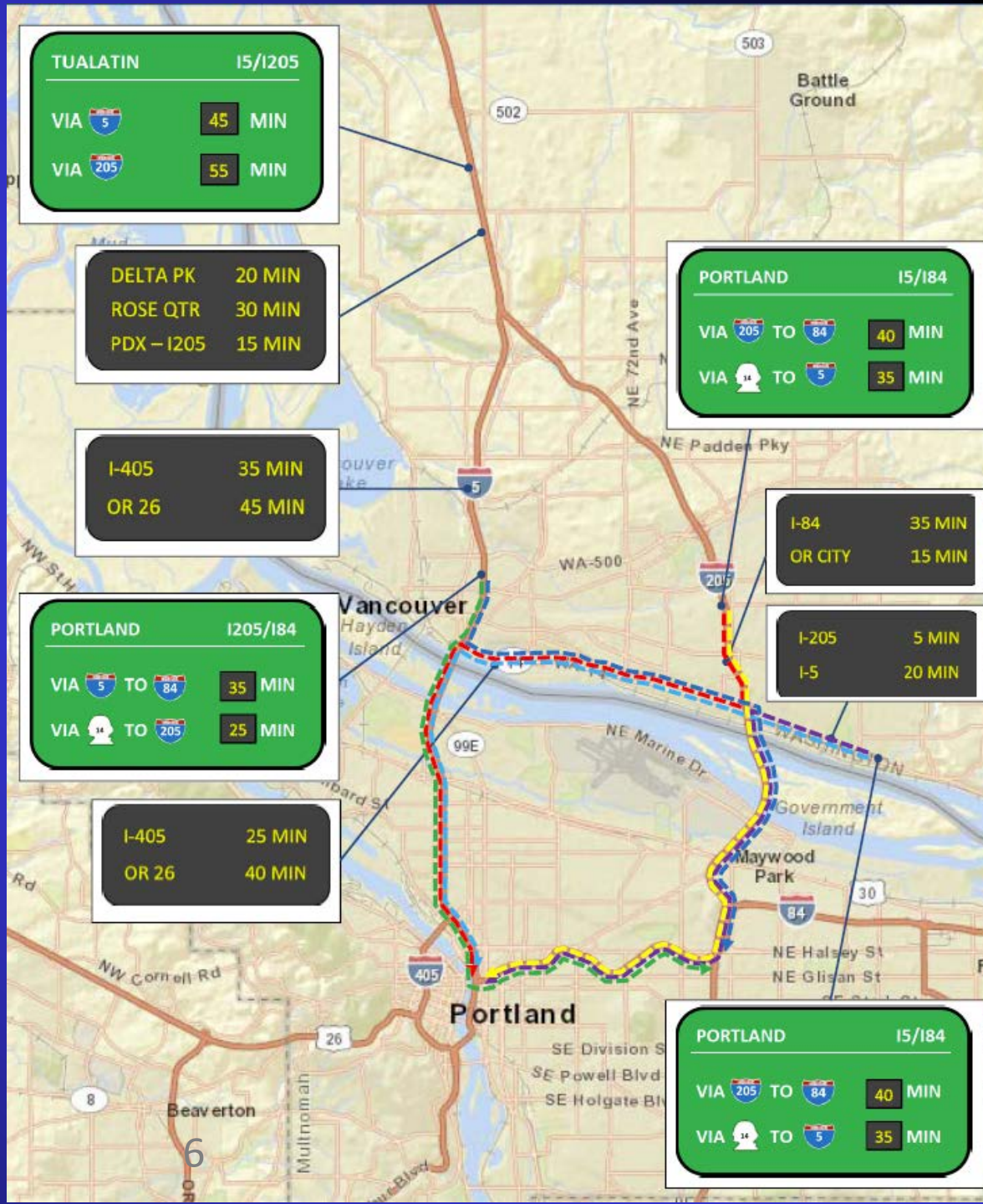
Bi-state Travel Time Project:

Portland

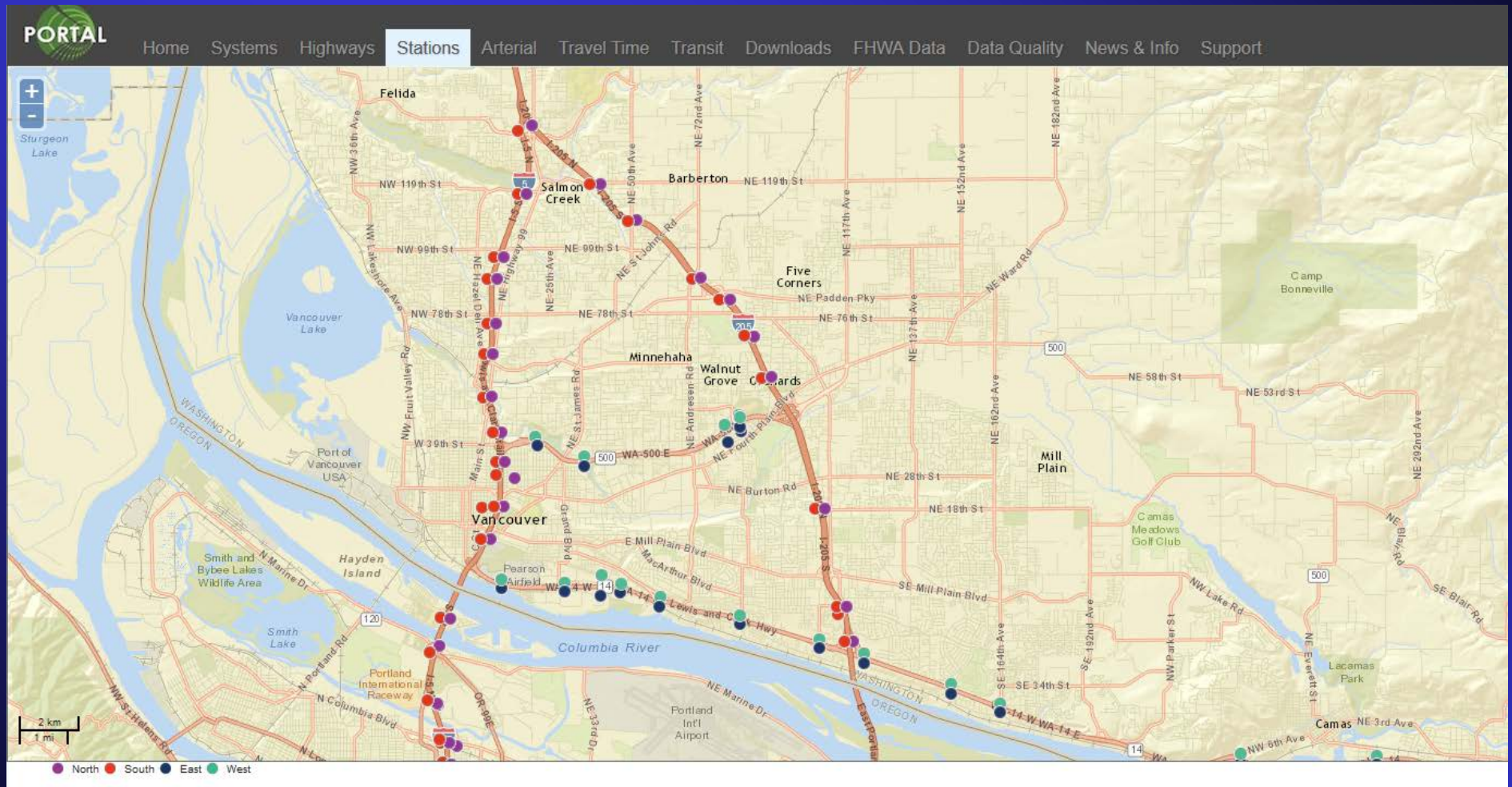


Bi-state Travel Time Project:

Vancouver



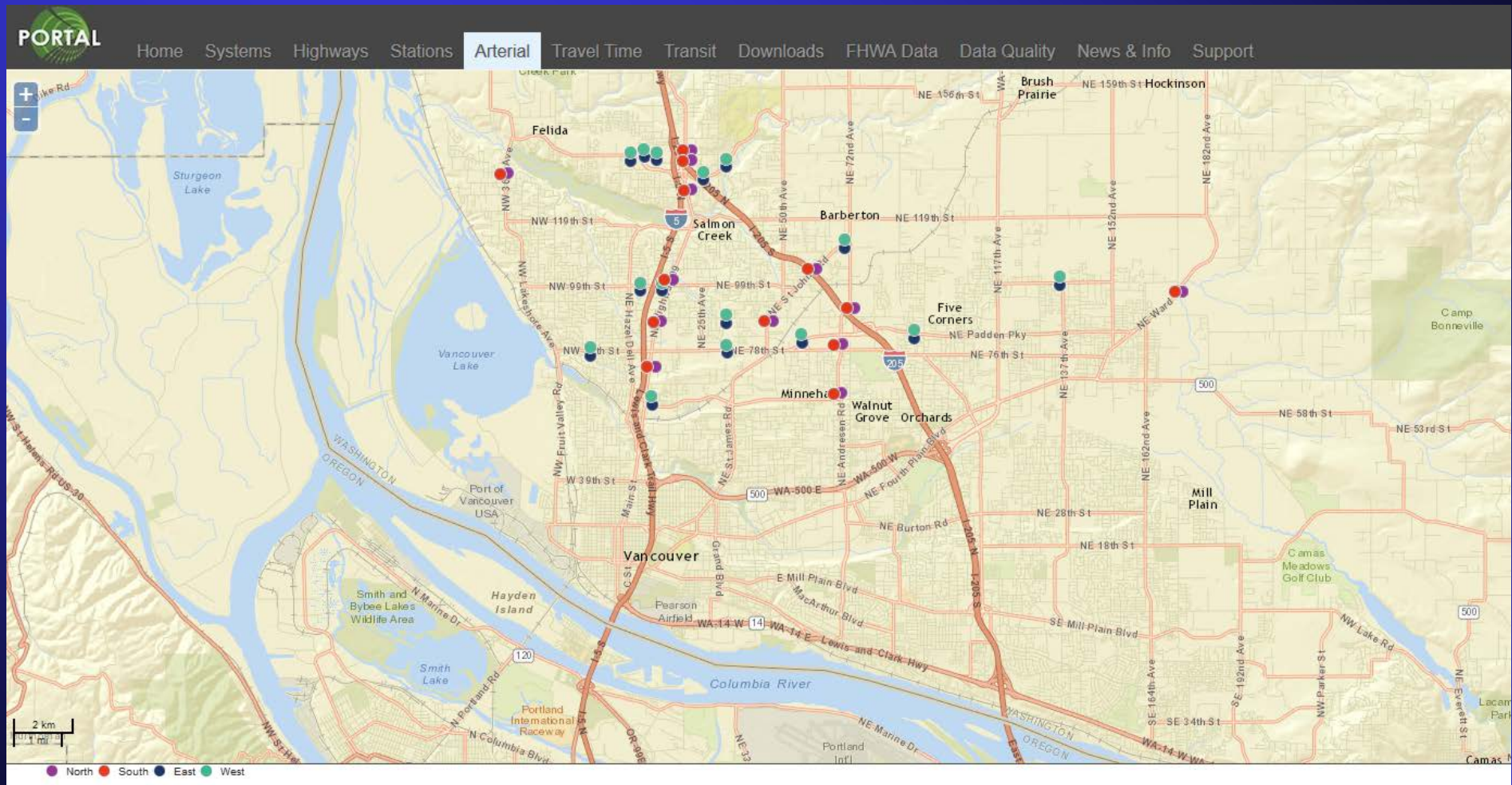
Data Archive-Freeway Data Stations



[Portland State University | Maseeh CECS | ITS Lab | Oregon DOT | Federal Highway Administration | National Science Foundation]

This material is based upon work supported by the National Science Foundation under Grant No. 0236567, the Oregon Department of Transportation, the Oregon Transportation Research and Education Consortium, the Southwest Washington Regional Transportat the Federal Highway Administration and by grants distributed through Metro. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the funding organizations.

Arterial Data Stations



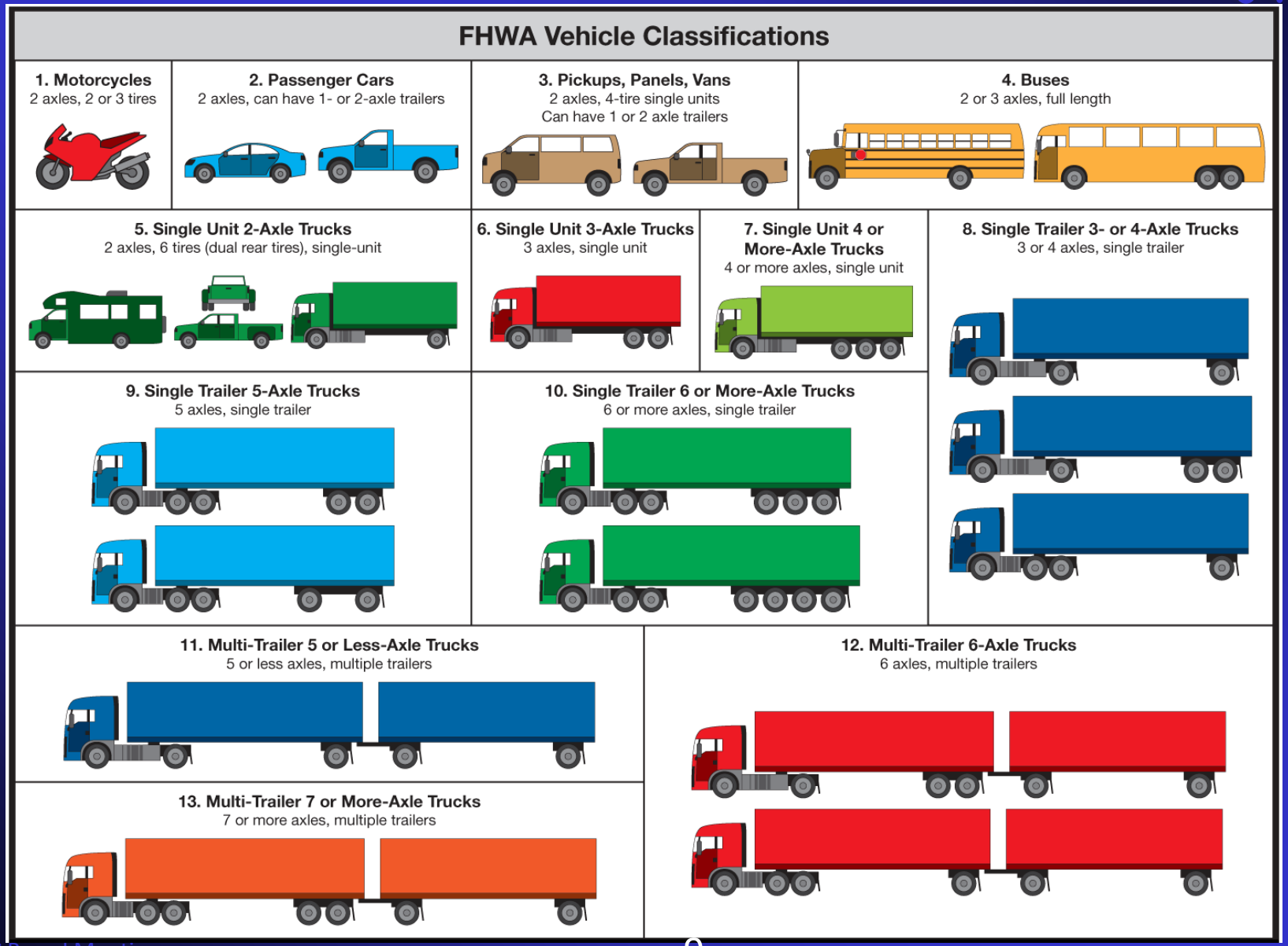
METRO

Oregon Department of Transportation

U.S. Department of Transportation Federal Highway Administration

Portland State UNIVERSITY

Vehicle Length Data



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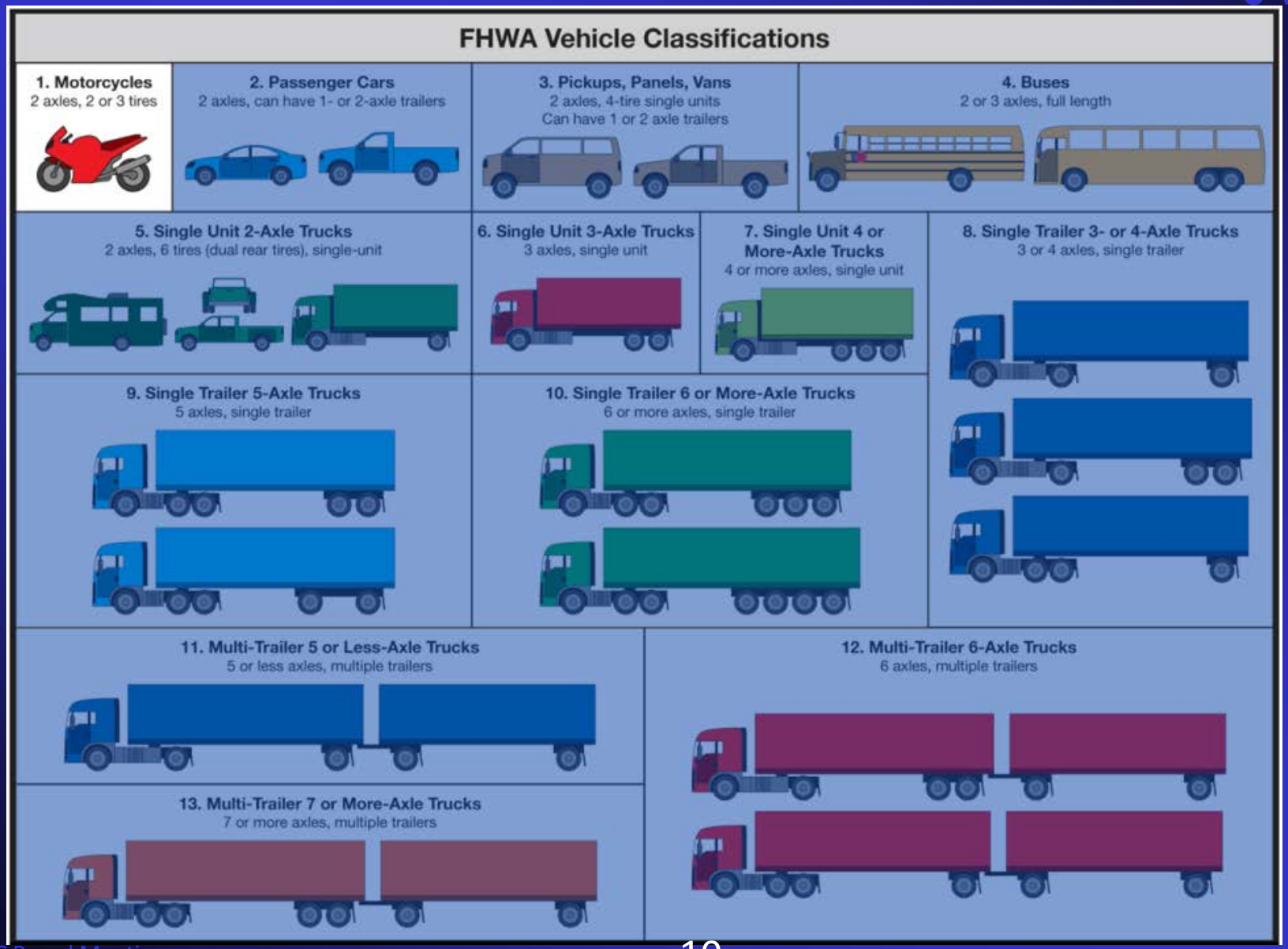

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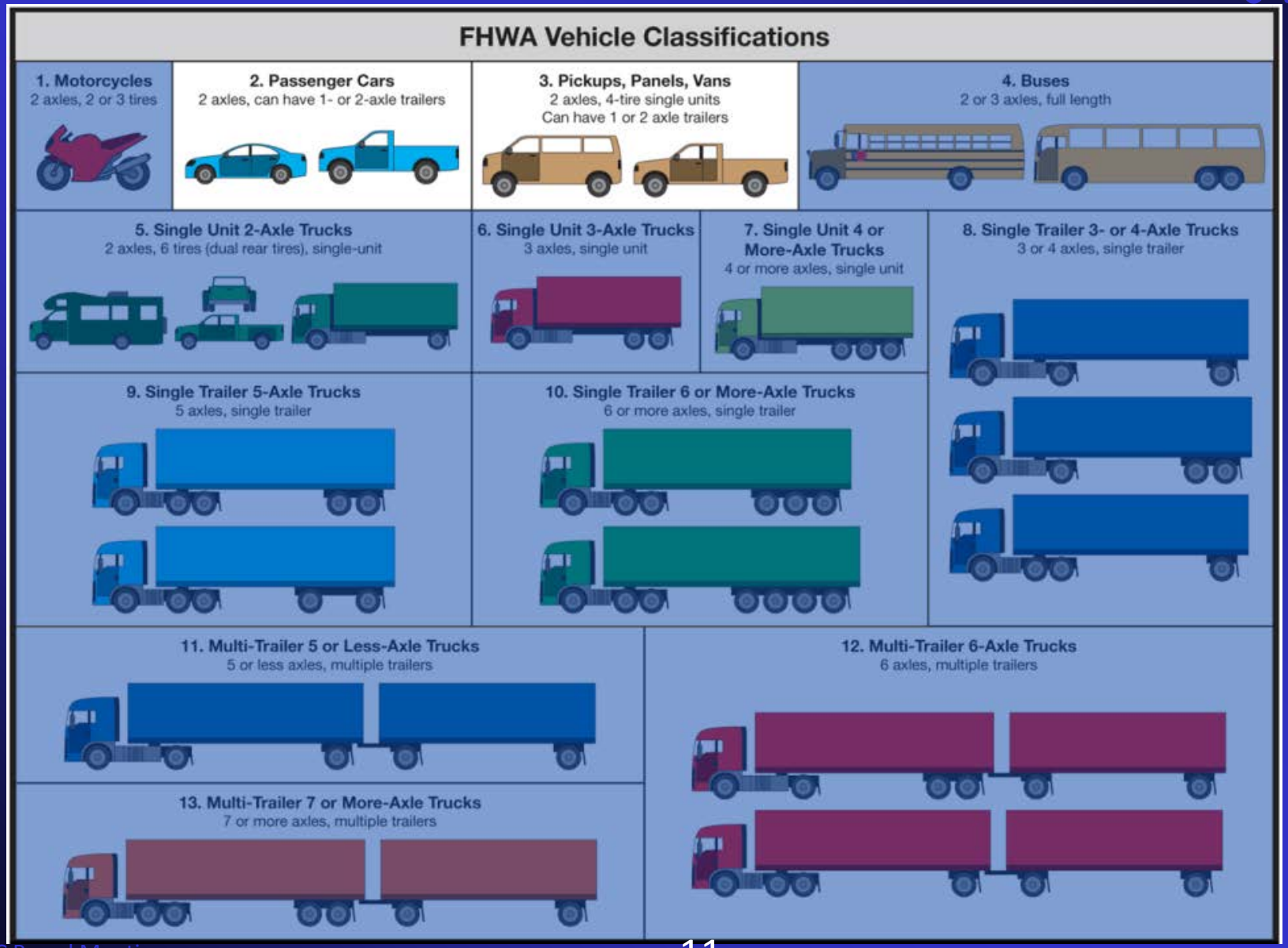

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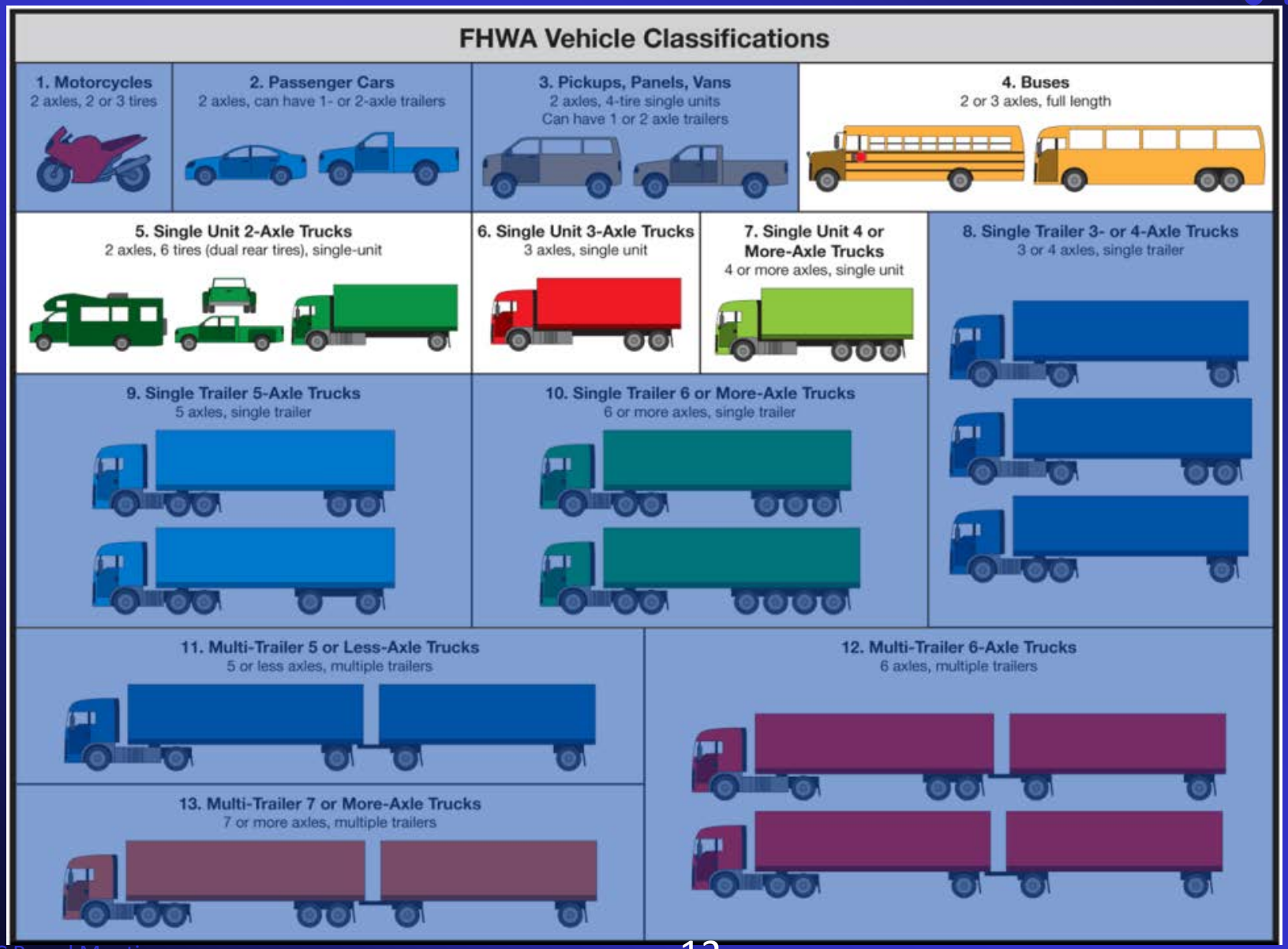

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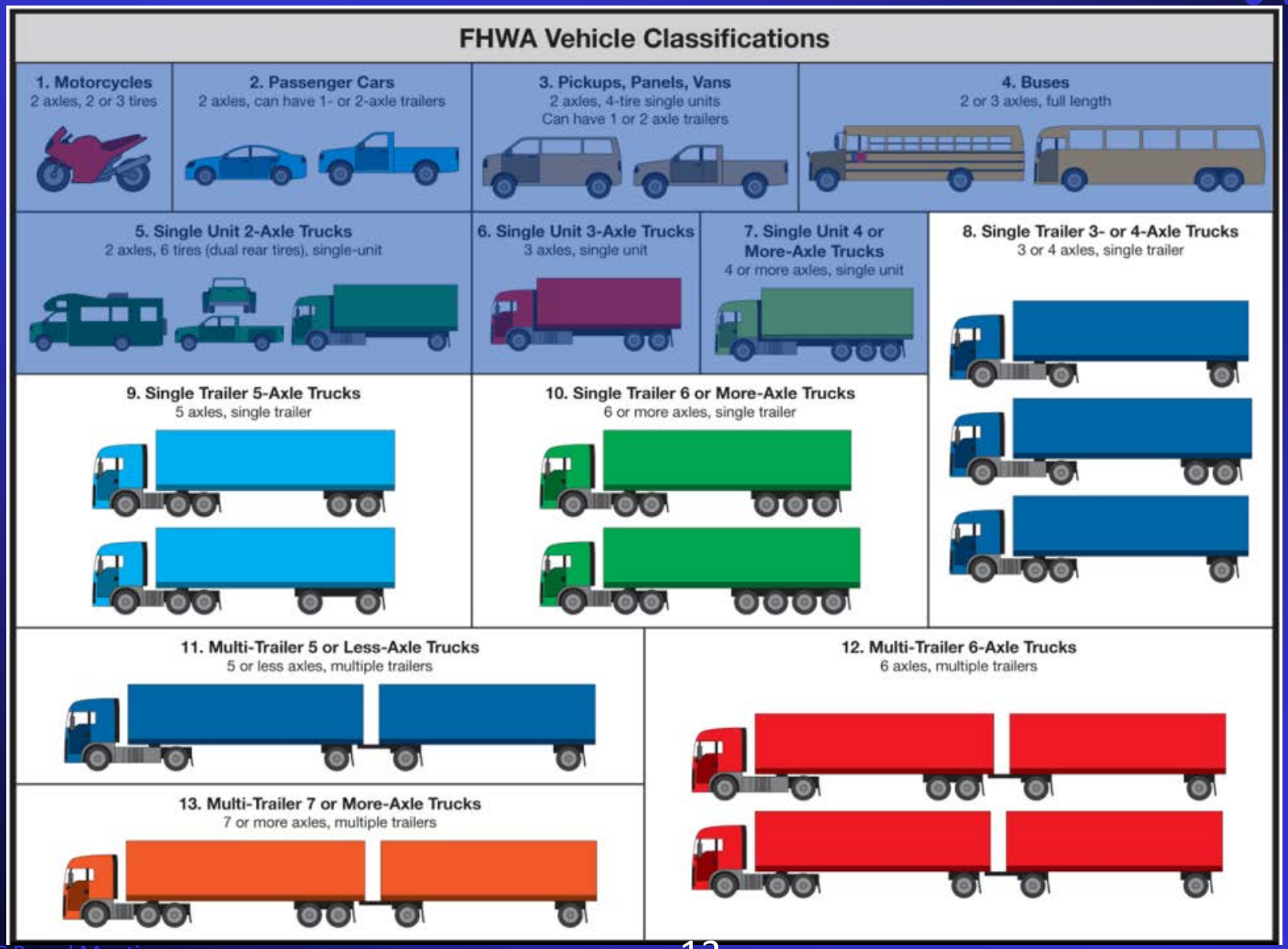
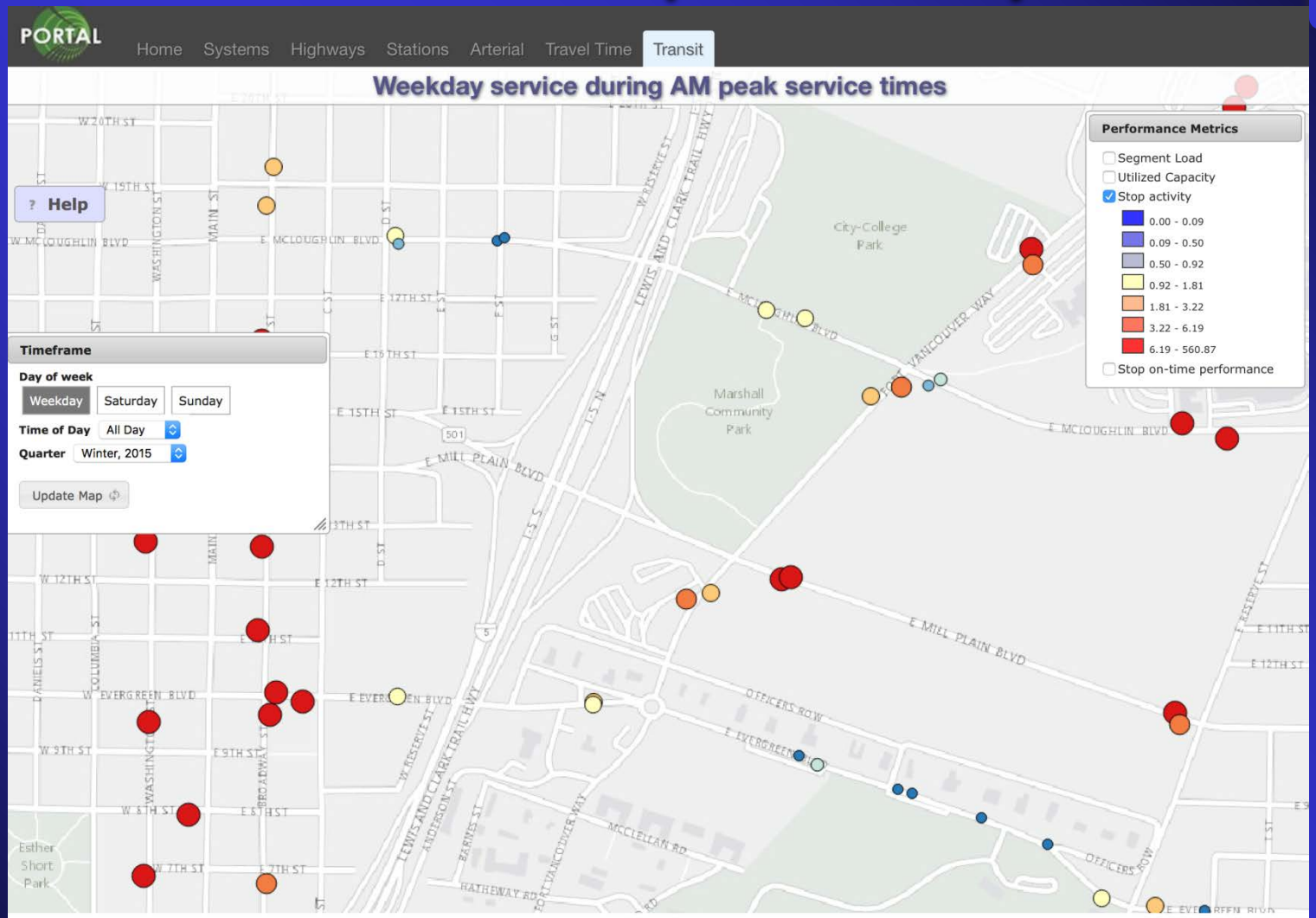


C-TRAN Transit Stop Activity



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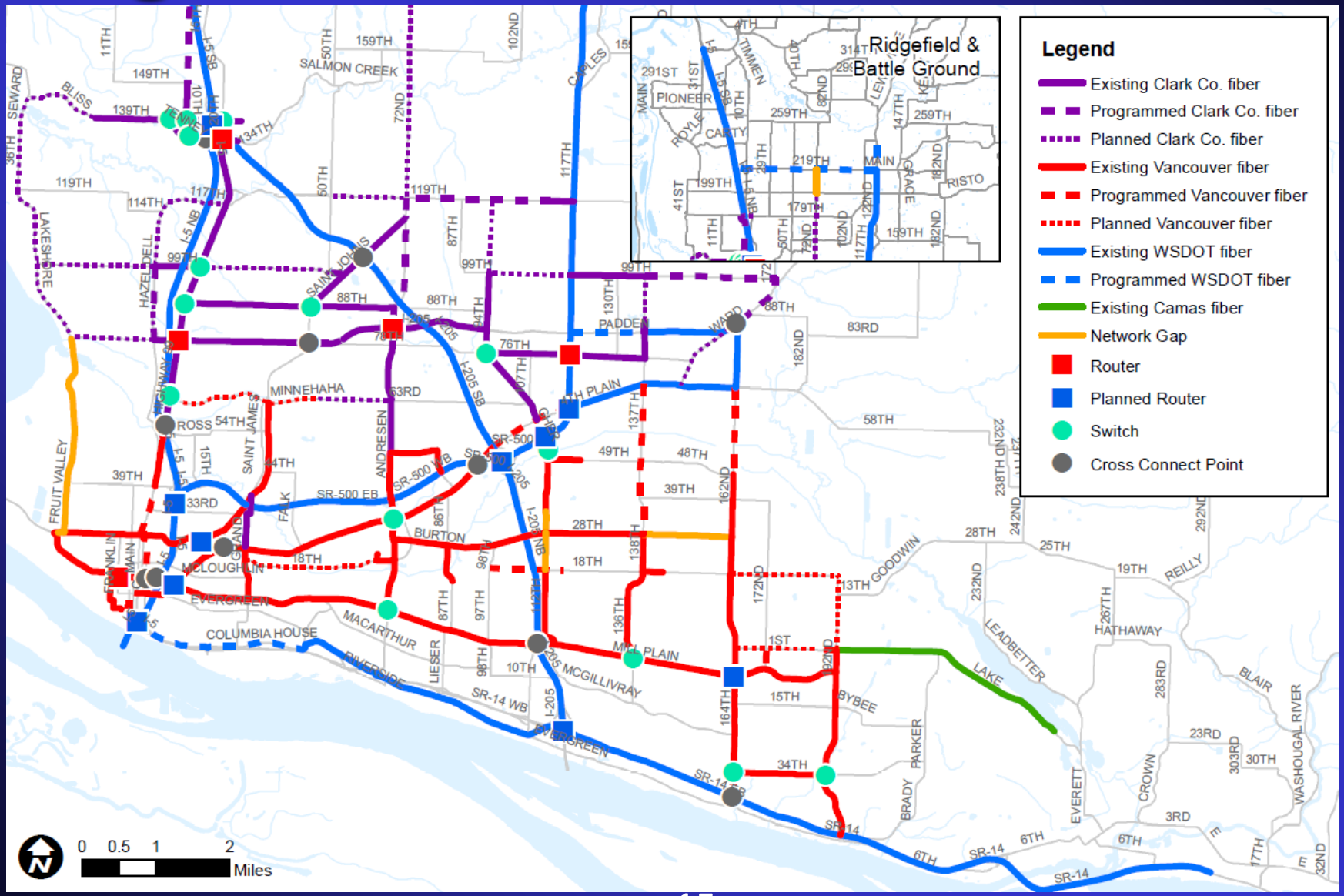
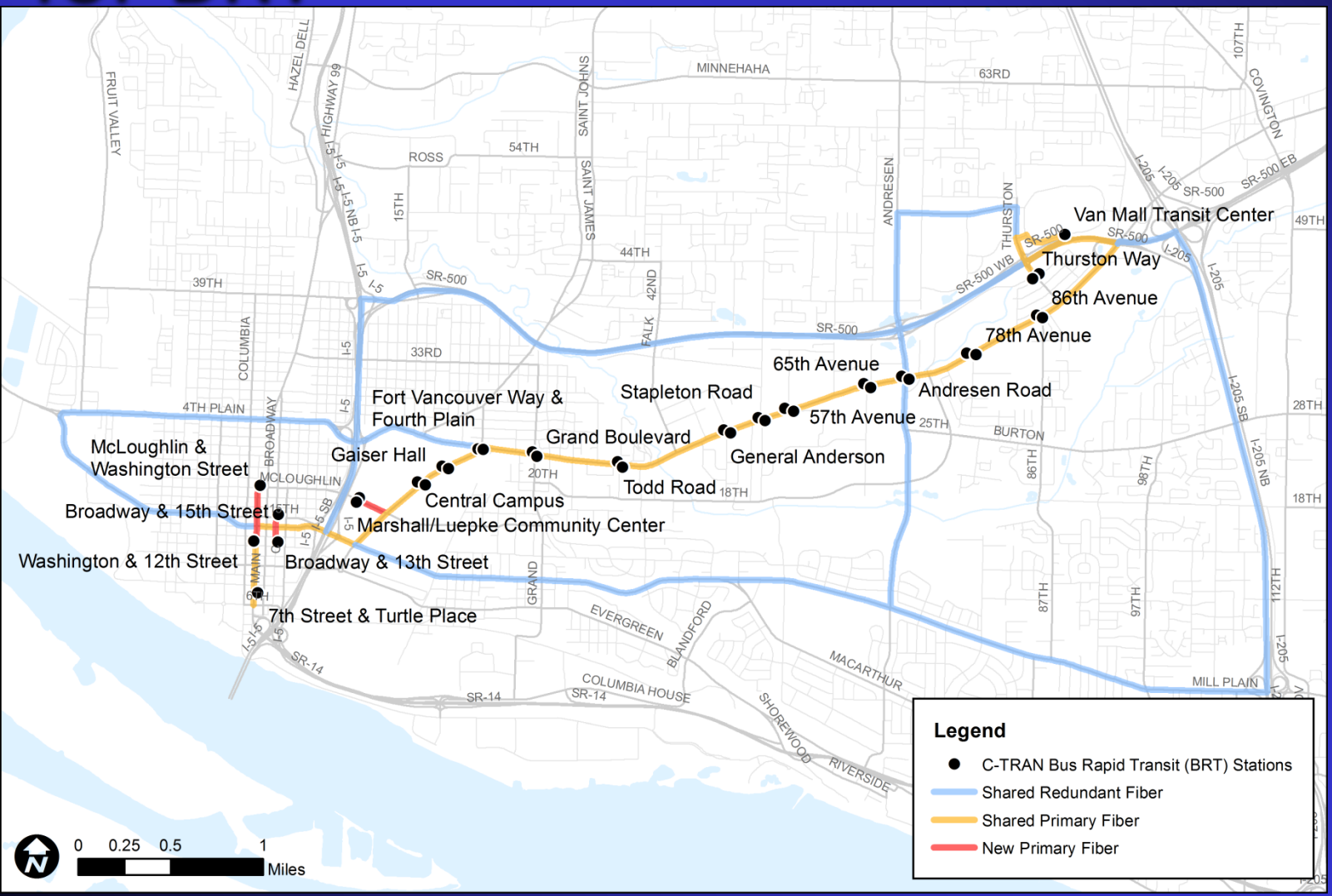
Regional Communications Plan



VAST Agency Fiber Sharing for BRT



Estimated 23 route miles of shared fiber

Estimated regional savings between $6 to $10.5m as related to new fiber construction

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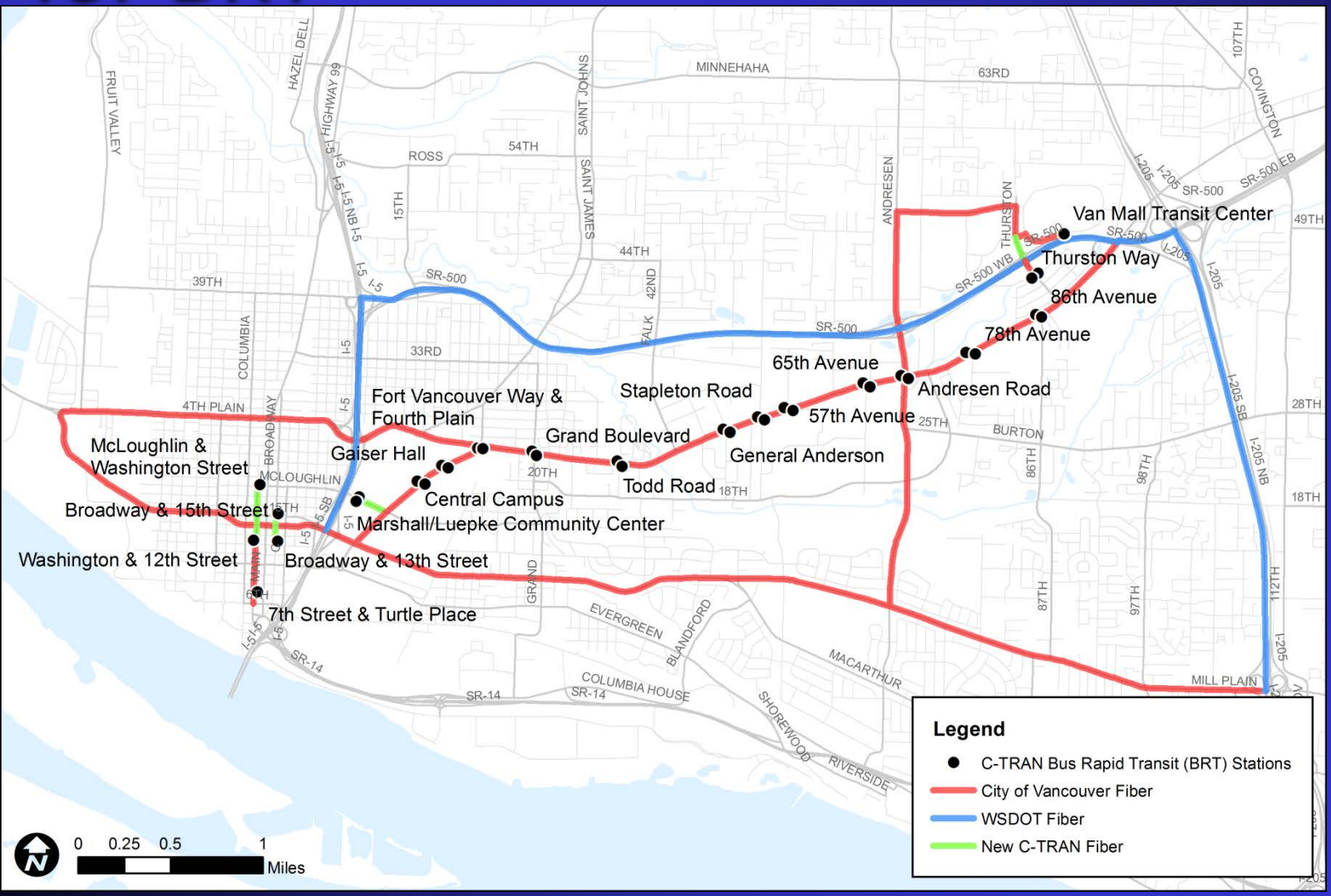


Estimated 23 route miles of shared fiber

Estimated regional savings between $6 to $10.5m as related to new fiber construction

VAST Agency Projects Programmed in 2014

- *Urban Freeway Infill Project (WSDOT)*
- *SR-503 Incident Management and Traveler Information (WSDOT)*
- *32nd Street Active Traveler Information Signing (Washougal)*
- *Open Trip Planner and Alerts System (C-TRAN)*
- *Signal Timing, Evaluation, Verification and Enhancement (STEVE) Project (Clark County and WSDOT)*

Clark County and VAST

County Goals for Intelligent Transportation Systems (ITS)

- Improved operations of transportation network
- Data
  - Real time operations
  - Historical and current
  - Measures of Effectiveness
  - Sharing of data

Clark County and VAST

Overall Benefits

- Significant improvements to transportation County network
- Shared resources with City of Vancouver, WSDOT
  - Fiber Optic Interconnect
  - Server applications and software improvements
  - Collaboration on project applications
  - Common collaboration areas
    - Travel time data
    - Better integration of server based software systems

Clark County and VAST

Completed County Projects

- Traffic Signal Optimizations
  - NE 134th St
  - NE 99th St
  - Padden / Andresen
  - NE 78th St
  - NE Hwy 99
  - Barberton
  - Hazel Dell / Felida

Clark County and VAST

Current County Projects

- Transportation Systems Management and Operations Pilot Project **(TSMO)**
- Traffic Signal Optimizations
  - Orchards / Sifton
- Intelligent Transportation Systems
  - Traffic Responsive Incident Management **(TRIM)**
  - Signal Timing Evaluation, Verification and Enhancement **(STEVE)**
  - Hwy 99 Transit Signal Priority

Clark County and VAST

Upcoming County Projects

- Intelligent Transportation Systems
  - Working to Refine IntelliGent Highway Transportation **(WRIGHT)**
  - PSU Traffic Data Portal Data Transfer
    - XML Data Feed out of County systems to others
  - Connected Vehicles
  - Adaptive Corridors

Clark County TSO's

Traffic Signal Optimization (TSO) Projects

- Corridor improvements
  - Signal cabinets upgraded
  - Brought on central system via Ethernet communications
  - Upgrade vehicle detection
  - Pan / Tilt / Zoom Cameras
  - Battery Backup
  - Central Opticom emergency vehicle preemption
  - New Accessible Pedestrian Pushbuttons
  - Permanent Count Stations
  - LED overhead illumination
  - All LED signal and pedestrian countdown indications

Clark County TSO's

Traffic Signal Optimization (TSO) Project Example

- Orchards TSO Project
  - Requesting award of bid by BOCC tonight
  - Single project
    - 9 WSDOT signals
    - 21 County signals
    - New Fiber Optic Interconnect for County and WSDOT

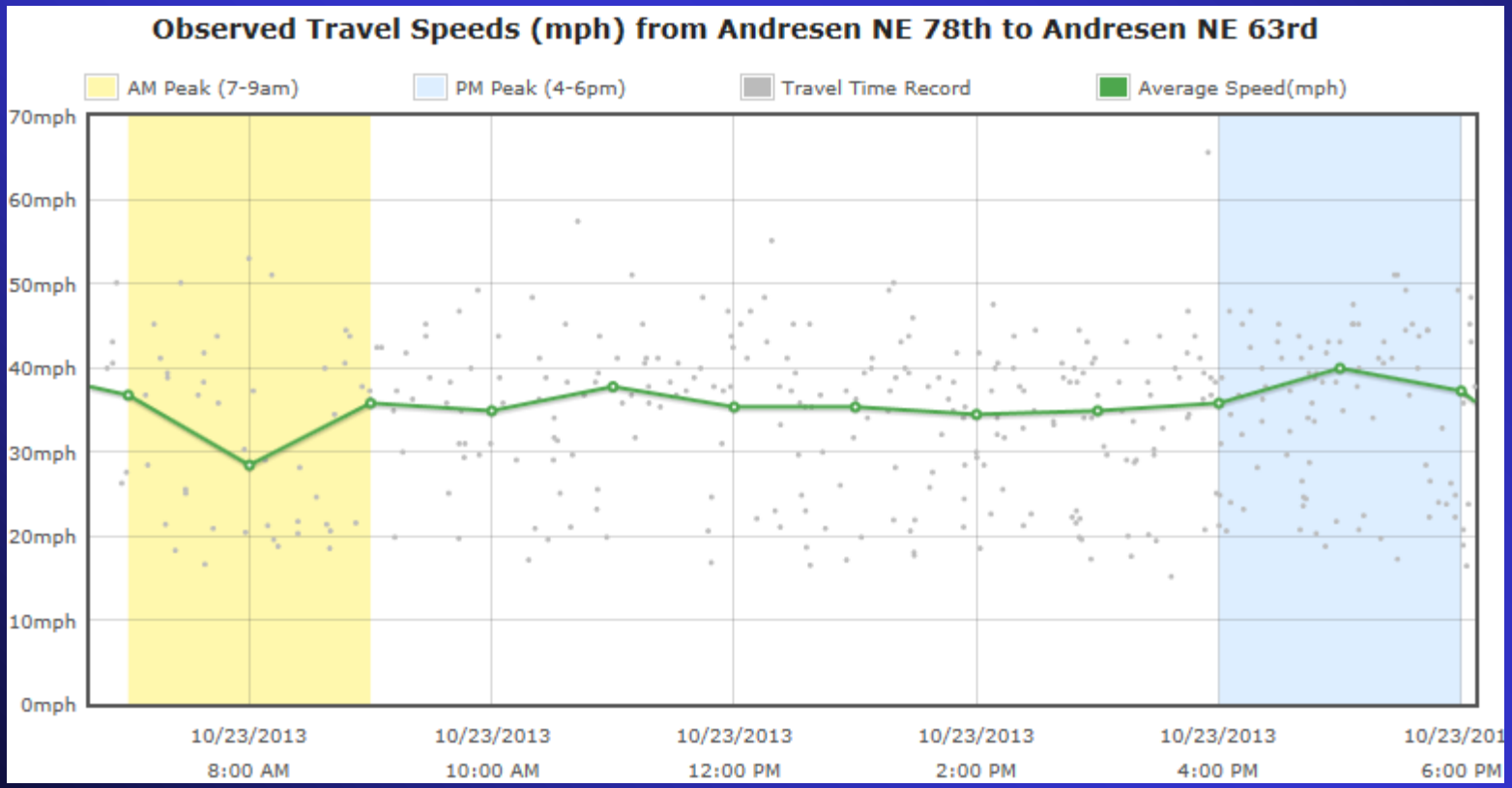
Clark County and VAST

Transportation Systems Management and Operations (TSMO) Pilot Project

- Joint City of Vancouver, Clark County and WSDOT project
  - Bluetooth corridor travel times
  - Purdue Arrival on Green
  - Evaluation of data

Clark County and VAST

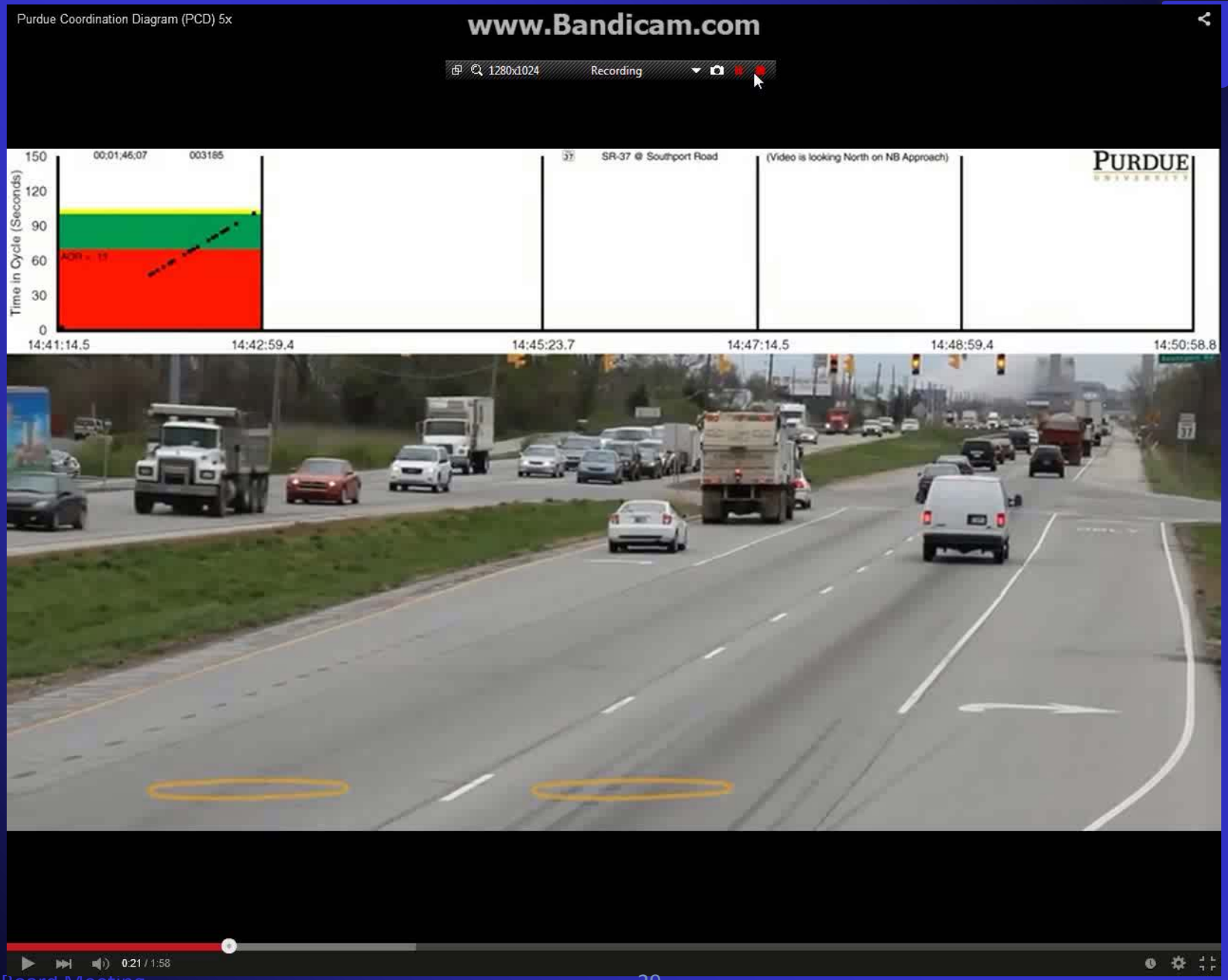
Transportation Systems Management and Operations (TSMO) Pilot Project



Clark County and VAST

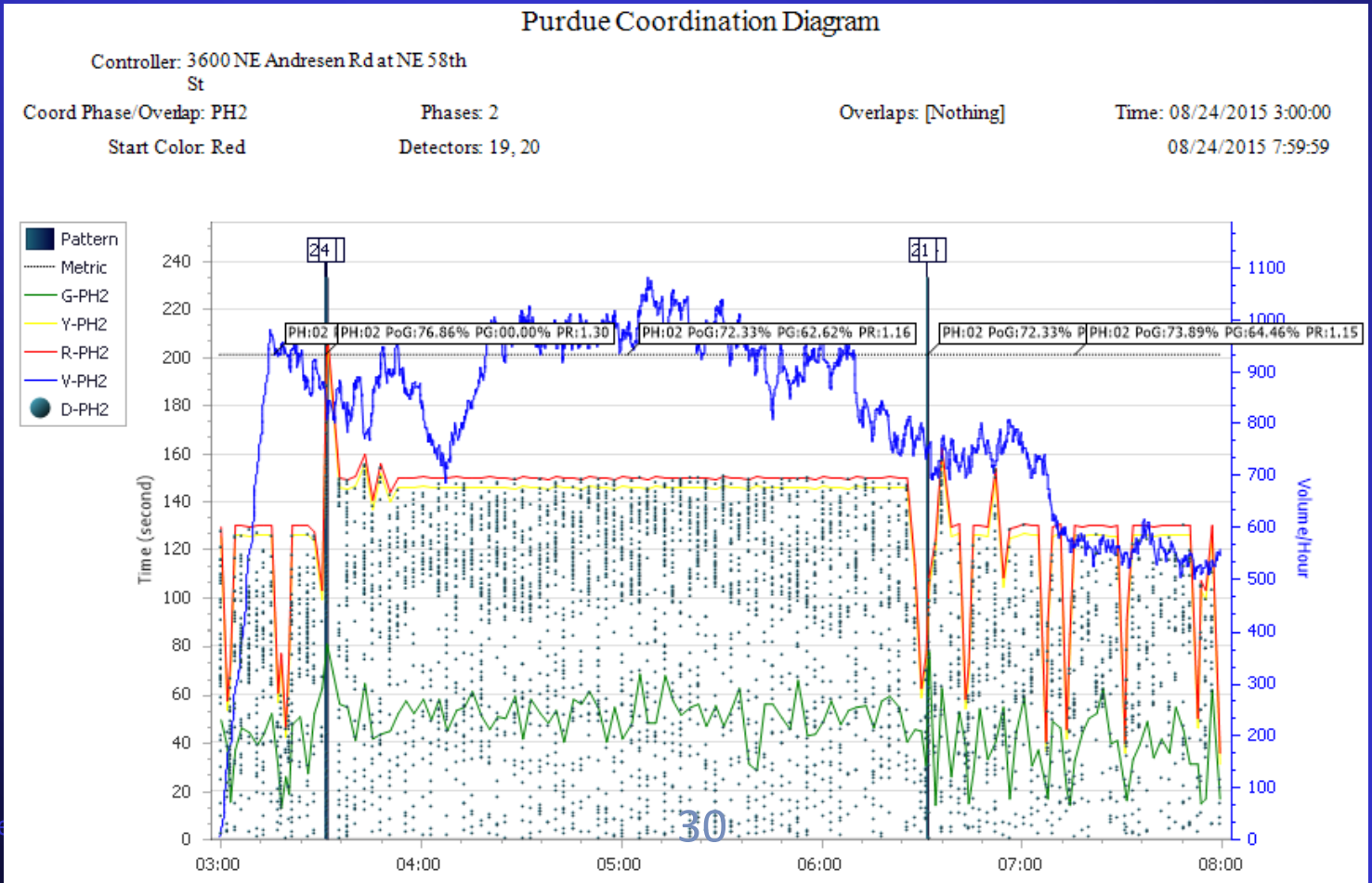
Transportation Systems Management and Operations (TSMO) Pilot Project

- Purdue Arrival on Green
  - Vehicles arrival in relation to the green, yellow and red
    - Currently running on 6 signals
    - STEVE Project will increase to 70 signals
    - Video example


Purdue Coordination Diagram (PCD) 5x
www.Bandicam.com
1280x1024
Recording
00:01:46:07
003185
SR-37 @ Southport Road
(Video is looking North on NB Approach)
PURDUE
Time in Cycle (Seconds)
150
120
90
60
30
0
14:41:14.5
14:42:59.4
14:45:23.7
14:47:14.5
14:48:59.4
14:50:58.8
0:21 / 1:58

Clark County and VAST

Transportation Systems Management and Operations (TSMO) Pilot Project



Clark County and VAST

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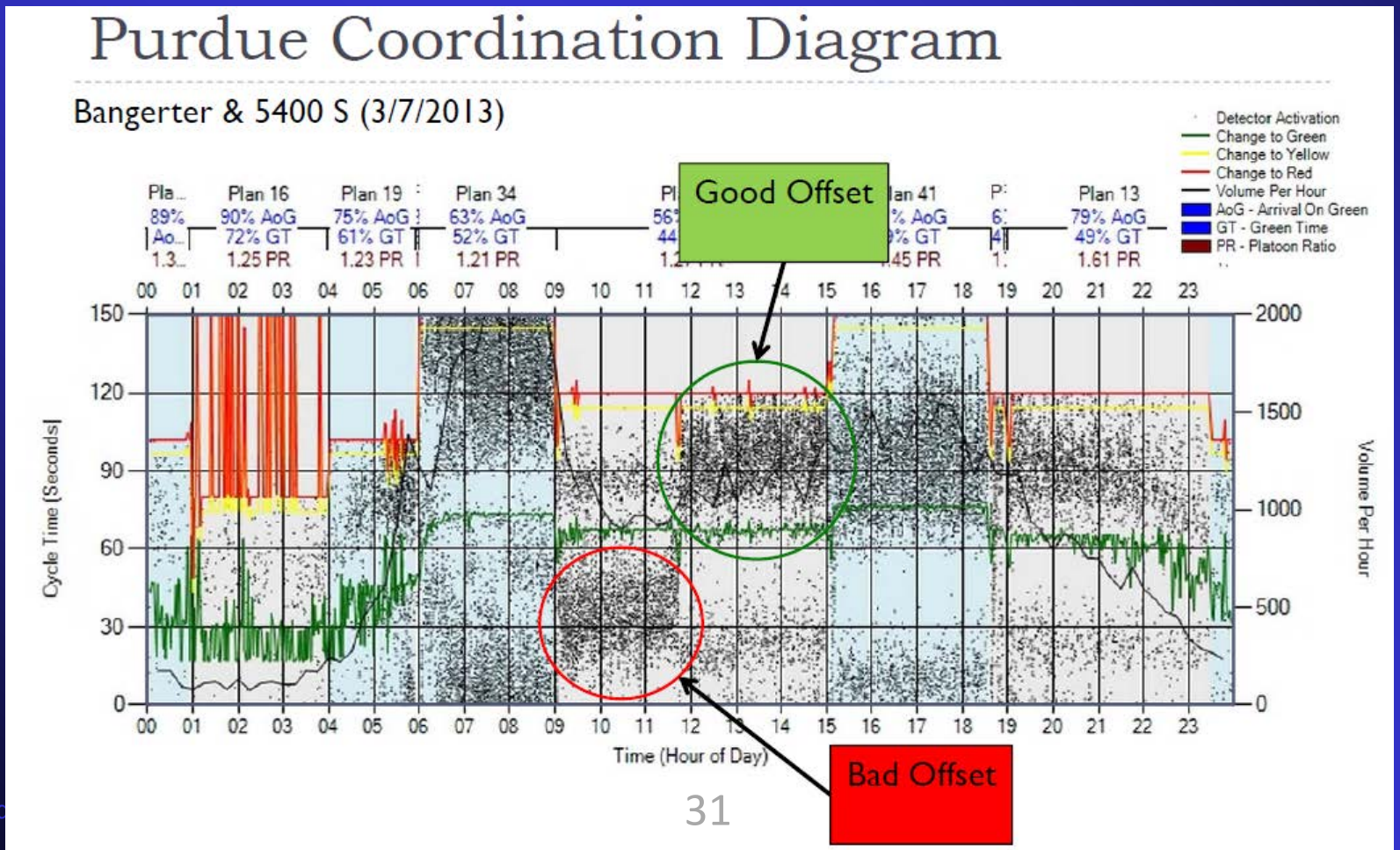
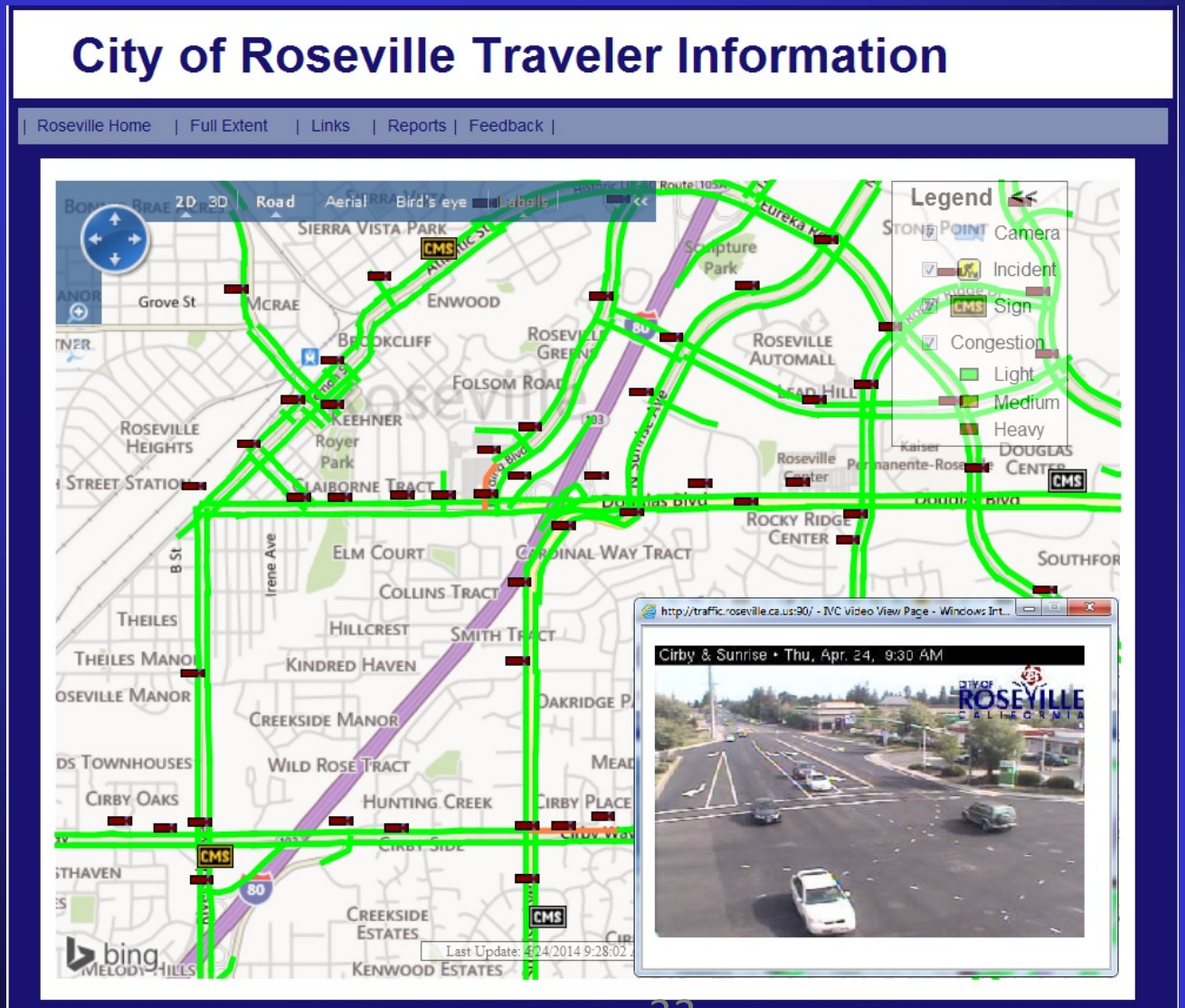


Clark County and VAST

Traffic Responsive Incident Management (TRIM) Project

- Central System Traffic Responsive Coordination Module
- Web.now
- Integrated central traffic camera management system
- Count station live data export
  - Feeds County's central traffic system
  - Feeds Portland State's Traffic Data Portal

Clark County and VAST



Clark County and VAST

Signal Timing Evaluation, Verification and Enhancement (STEVE) Project

- Expansion of travel time monitoring
- Expansion of Purdue arrival on green
- Development of Measures of Effectiveness **(MOE's)**
  - Corridor Travel Times
  - Intersection Delays
  - Quality of Service
- Framework for evaluating timing modifications and capital projects

Clark County and VAST

Hwy 99 Transit Signal Priority Project

- C-Tran project with Clark County
  - Expanding on systems developed by C-Tran and the City of Vancouver
- New Transit Signal Priority **(TSP)** on NE Hwy 99
  - NE 63rd St to NE 99th St
- Conditional TSP service

Clark County and VAST

Working to Refine IntelliGent Highway Transportation (WRIGHT) Project

- Adaptive signals on NE 139th St
  - NW 2nd Av to NE 20th Av
- Enhanced Transit Signal Priority (County and City Of Vancouver)
- Regional Central Traffic System (County and WSDOT)
- Regional Video Sharing **(DIVA)**
  - City of Vancouver
  - WSDOT
  - Clark County

Clark County and VAST

Future Projects

- Additional adaptive corridors
- Roadway Weather Information Systems **(RWIS)**
- Integration of traffic data in County processes
- Additional instrumentation of corridors
  - Bluetooth
  - Arrival on Green
- Data feeds to PSU's Traffic Data Portal
  - Develop "dashboard"
    - View of how corridors are currently operating
    - Is the current operation better or worse than normal?

RTC VAST Program Areas

Operations

- Manage and improve transportation data archive
- Track and update TSMO Corridors
- Develop performance measures for operations

ITS

- Continue and expand fiber sharing opportunities
- Maintain and update shared asset management system
- Continue development of agreements fiber, equipment and infrastructure standards

Regional Signals Workshop, October 1

- The future of signal systems and operations
  - Pros, cons, and opportunities for a shared system
  - Vision for the region
- Connected vehicles
  - What are they?
  - Future growth and applications
  - Benefits and impacts for public agencies

Questions?