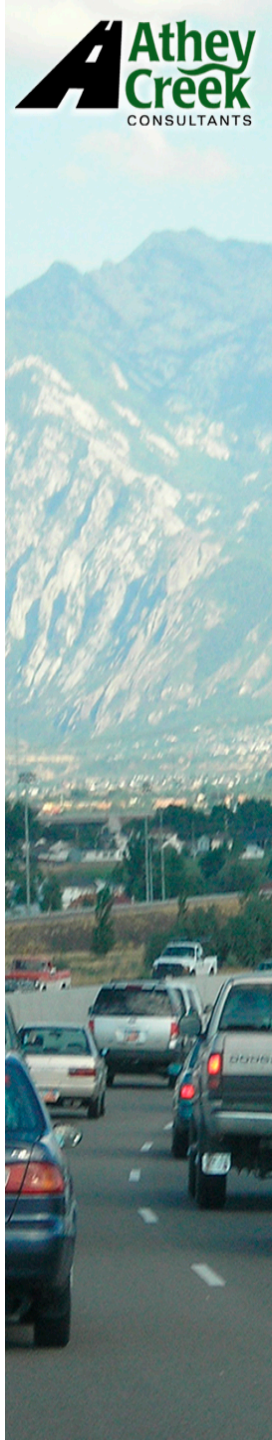
AASHTO Connected Vehicle Coalition Update

Dean Deeter, P.E.

Athey Creek Consultants



Topics

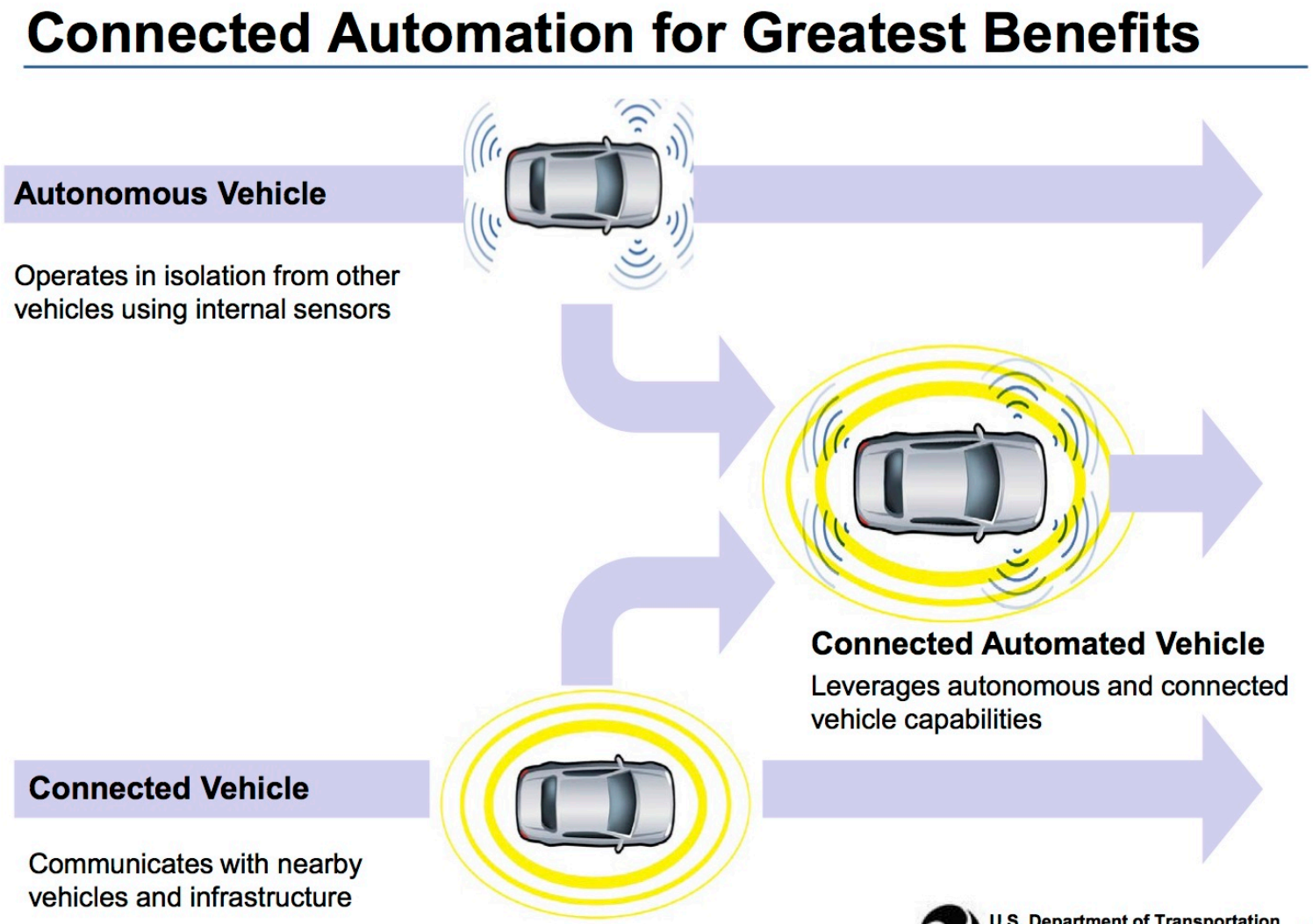
- **Introduce V2I Deployment Coalition**
- **Details on Intersection CAV Applications**
- **Details of Work Zone CAV Applications**
- **How the V2I Deployment Coalition Supports Both Types of Applications**

Vehicle to Infrastructure Deployment Coalition (V2I DC)

- **V2I DC Concept**
  - A single point of reference for stakeholders to meet and discuss V2I deployment related issues

- **V2I DC Approach**
  - USDOT asked AASHTO, ITS America and ITE to collaborate on organizing and managing the coalition

Connected Automation



V2I Deployment Coalition – Phase 2

- **Strategic Initiatives Working Group (Phase 1 TWG 1)**
  - Chaired by Greg Larson, Caltrans
  - Meets 4th Thursday of every month at 2pm ET
  - Next meeting: March 22 at 2pm ET
- **Technical Resources Working Group (Phase 1 TWG 4)**
  - Chaired by Faisal Saleem, MCDOT
  - Meets 2nd Wednesday of every month at 11am ET
- **Peer Exchange & Outreach Working Group**
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- **To be added to or removed from one or more groups, visit:** https://www.surveymonkey.com/r/V2IDC_TWGs

Connected & Automated Vehicle Executive Leadership Team (CAV-ELT)

Purpose

- To discuss and develop policies that accelerate deployment of AV, in convergence with CV
- Be proactive and be the voice of our ultimate customers –the roadway user
- Provide strategic guidance and recommend policies and national deployment approaches

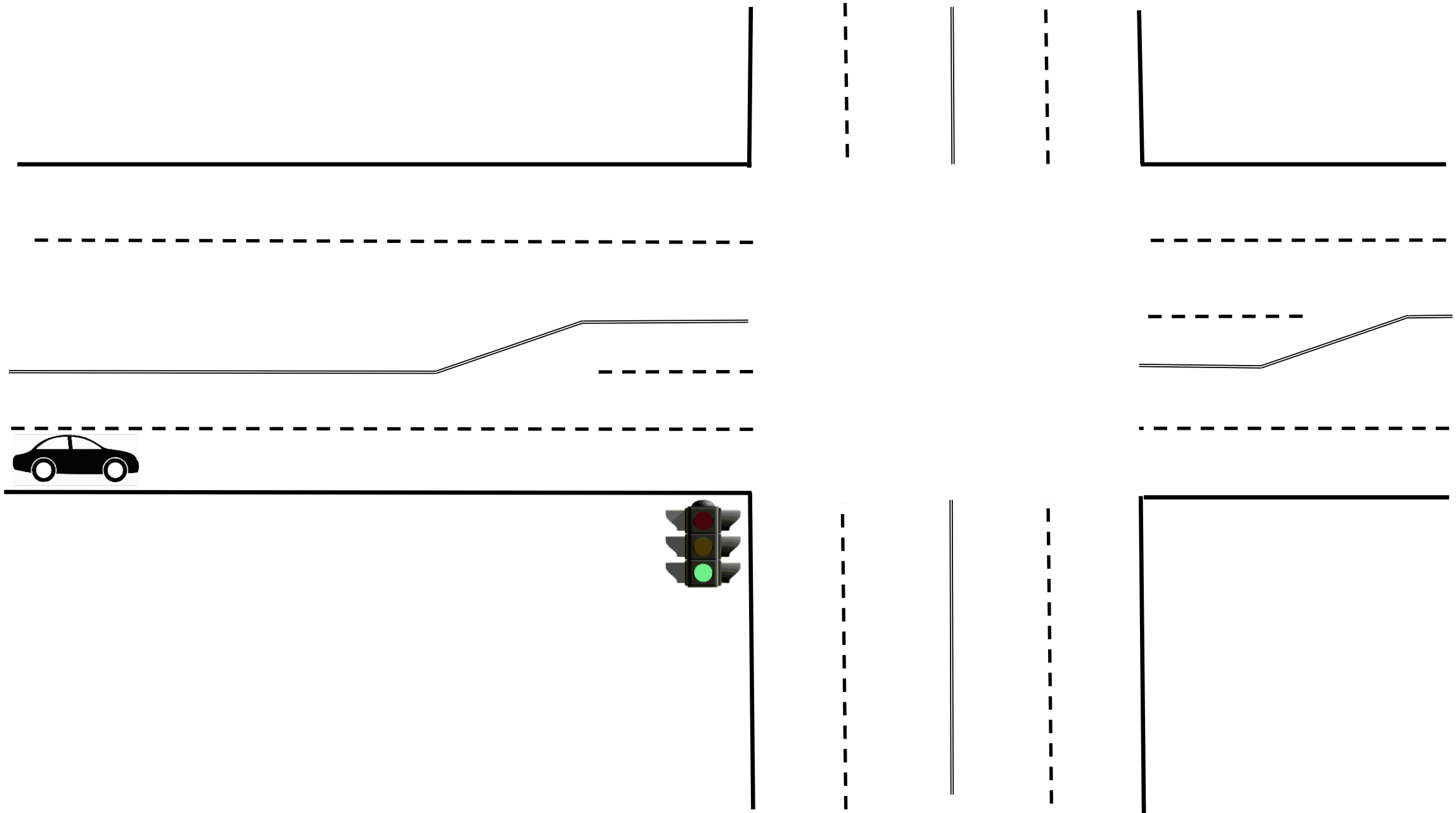
Who Makes up the CAV-ELT?

Entity	# of Members
USDOT	7 Liaisons
State DOTs	15 members
Local Governments	5 members
AASHTO	3 members
ITE / ITS America	1 member each
Automotive Industry	20+ members
TRB	1 member
NACO / NACTO / IBTTA / VII / AAMVA/ Others	9 members

Specific CAV Applications and Uses

- Apply to both Connected Vehicles and Automated Vehicles

- Not specific to any one communication (DSRC, Cellular, 5G)

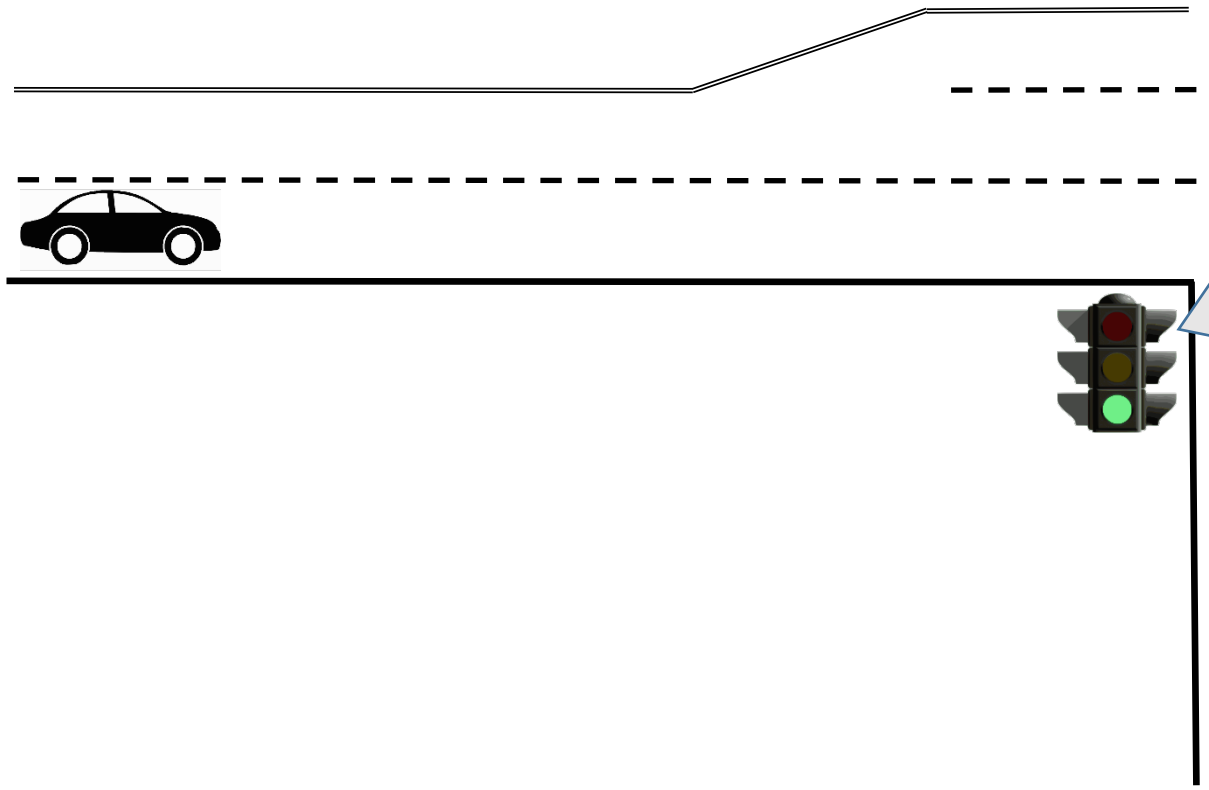


Possible Applications:

Red Light Violation Warning

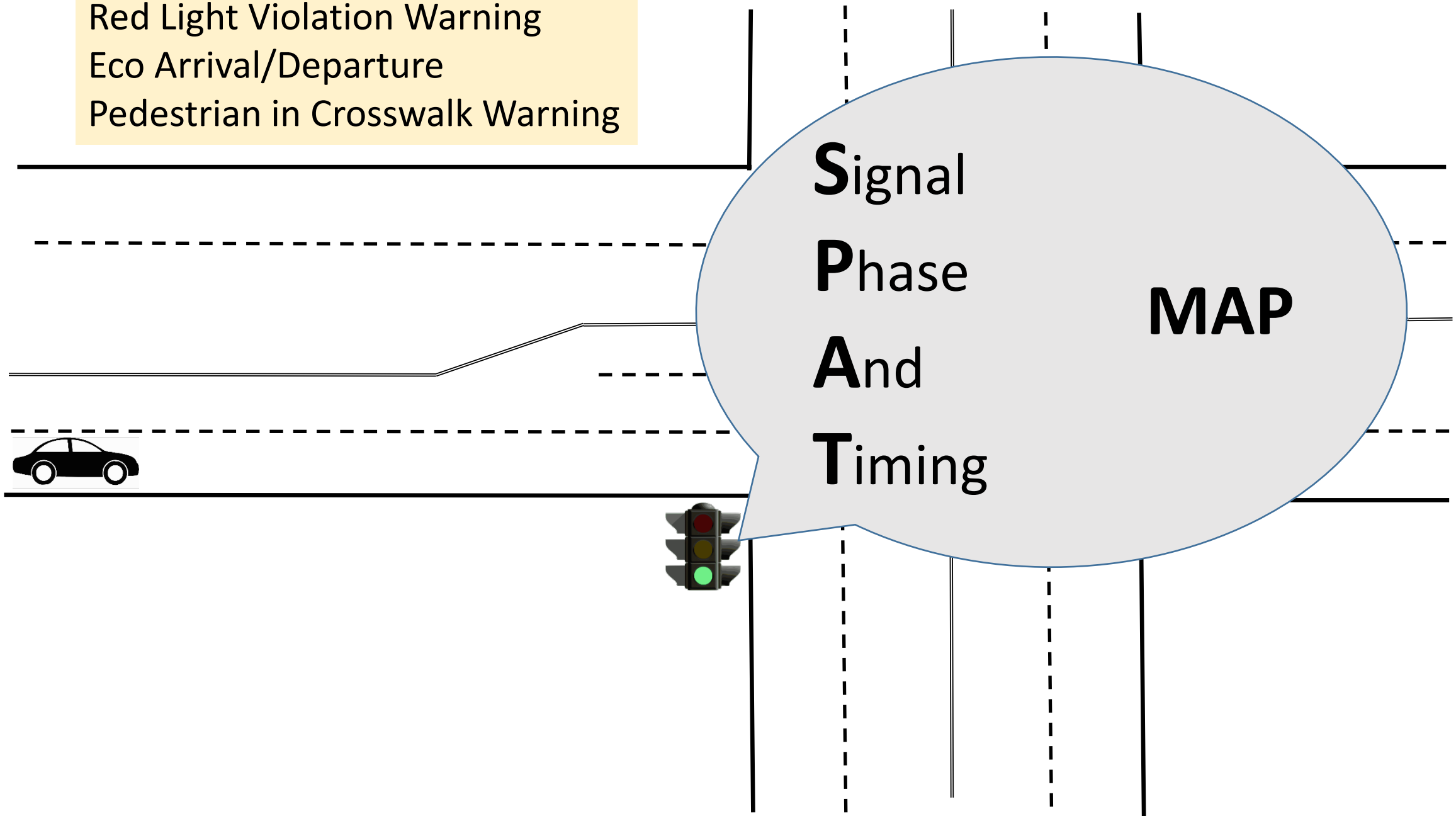
Eco Arrival/Departure

Pedestrian in Crosswalk Warning



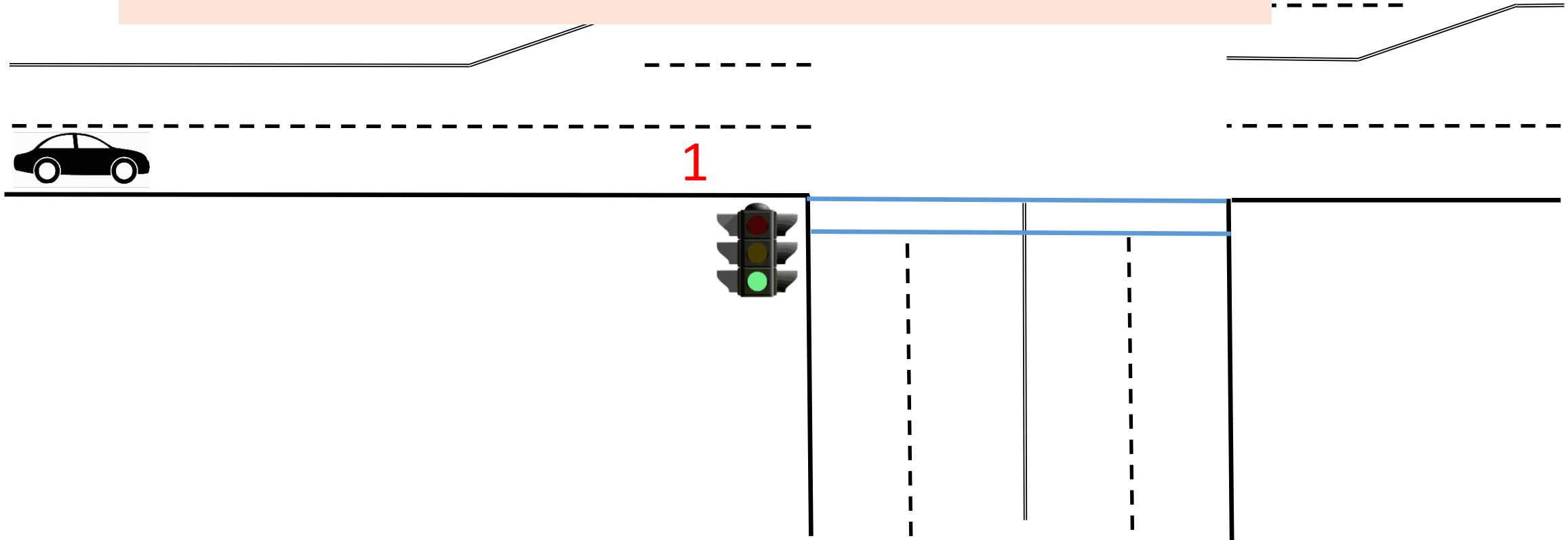
The signal on your approach is Red
It will turn Green in 20 seconds. A pedestrian has triggered the walk sign along your path

Possible Applications:
Red Light Violation Warning
Eco Arrival/Departure
Pedestrian in Crosswalk Warning



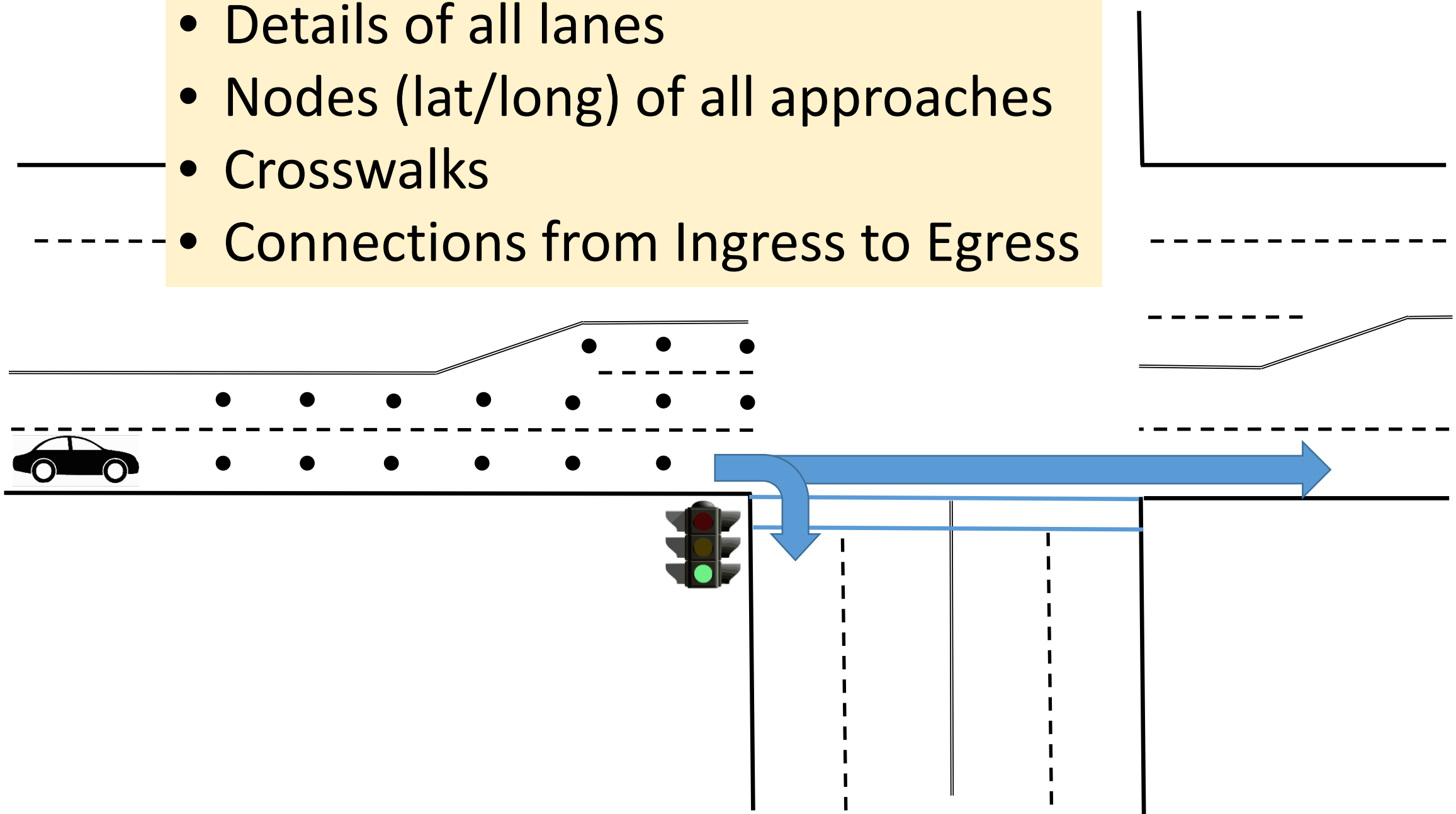
SPaT Message:

- From the Signal Controller
- Current Signal Status for each approach
- Expected time of next signal phase change
- Whether pedestrian cross walks are activated
- Others



MAP Message:

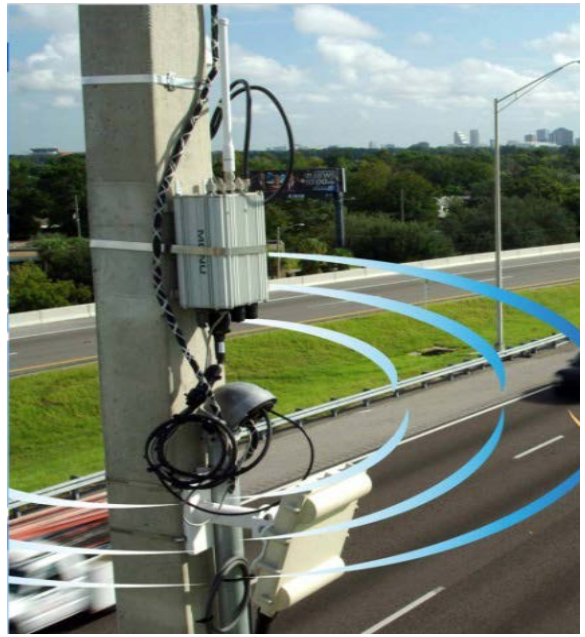
- Details of all lanes
- Nodes (lat/long) of all approaches
- Crosswalks
- Connections from Ingress to Egress



SPaT Challenge

What is the Challenge?

To challenge state and local public sector transportation IOOs to cooperate together to achieve deployment of DSRC infrastructure with SPaT broadcasts in at least one corridor or network (approximately 20 signalized intersections) in each state by January 2020



SPaT Challenge Website

One-stop shop for SPaT-related information

- Overview
- Current map with SPaT deployment details and contacts
- Resources

https://transportationops.org/spatchallenge

SPaT Challenge Resources on the Website

SPaT Challenge Resource	Status
DSRC Licensing Information	On-line / Available
Guidelines for Selecting Corridors	On-line / Available
Implementation Guidance	On-line / Available
SPaT Challenge FAQs	On-line / Available
SPaT Challenge Estimated Costs	Draft Being Reviewed
SCMS & The SPaT Challenge	Draft Being Reviewed
Standards Versioning Management	Draft Being Reviewed
Simple Steps to Deployment – Resource Guide	Draft Being Reviewed
Model Concept of Operations Model Requirements	On-line / Available
Procurement Guidance	In Development
SPaT/RLVW Verification Document	On-line / Available

Upcoming SPaT Challenge Webinars

- **Design Considerations, Part 1 - March 20, 2018 2:00-3:30pm ET**
  - Signal controller interface and creation of SPaT messages
  - Examples of designs for assembling SPaT messages
- **Design Considerations, Part 2 - April 17, 2018 2:00-3:30pm ET**
  - MAP messages and vehicle position correction
- **MAP Creator Tool Demonstration - April 24, 2018 1:00-2:30pm ET**
  - Live technical demonstration and step-by-step training on using the MAP creator tool
- **Design Considerations, Part 3 - May 15, 2018 2:00-3:30pm ET**
  - Backhaul infrastructure, intersection, and roadside equipment specification, design and installation
- **Deployment & Validation - June 12, 2018 2:00-3:30pm ET**
  - Procurement, validation, verification, and security of SPaT deployments

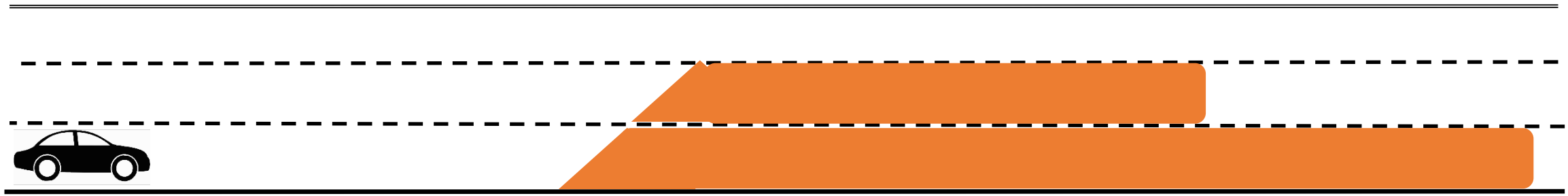
https://transportationops.org

Reduced Speed Zone / Lane Closure:

- Freeway
- Arterial
- Work zone or non-work zone (e.g. school speed zones)

Reduced Speed Zone / Lane Closure:

- Road or lane closures
- Merging information, warning, and alert
- Reduced /workers present information, warning, alert



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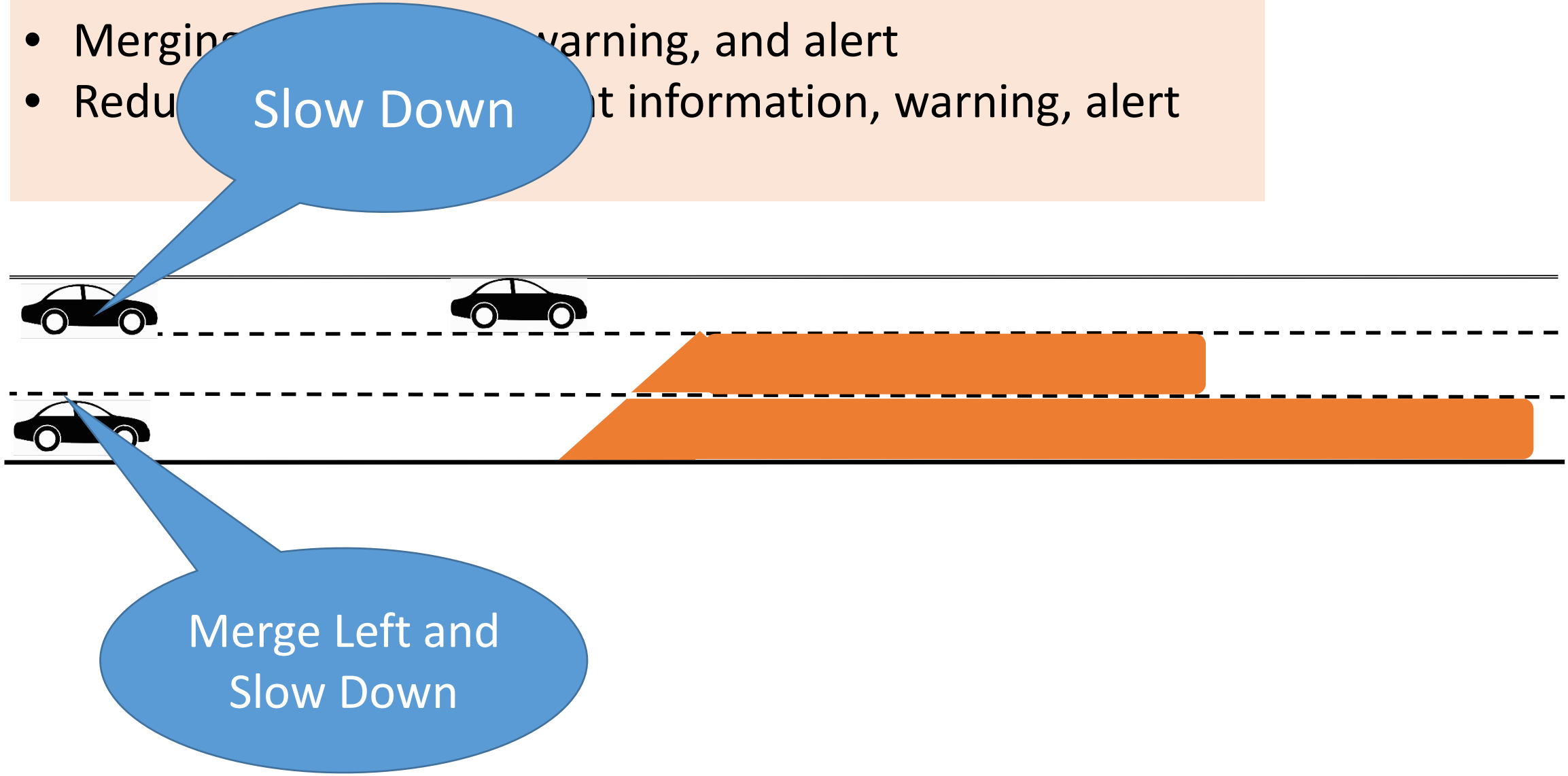
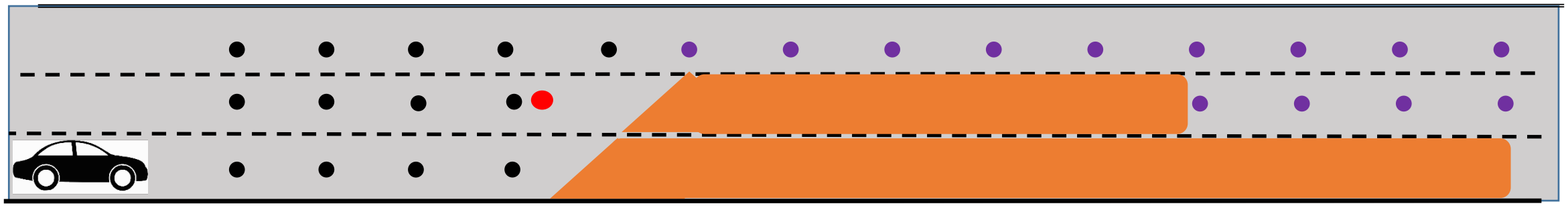


Reduced Speed Zone / Lane Closure:

- Reference Point – Work Zone start
- Approach Nodes
- Work Zone Nodes
- Work Zone Lanes
  - Closed Lanes – Start/End of closure
  - Open lanes – Speed limit / Are workers present?



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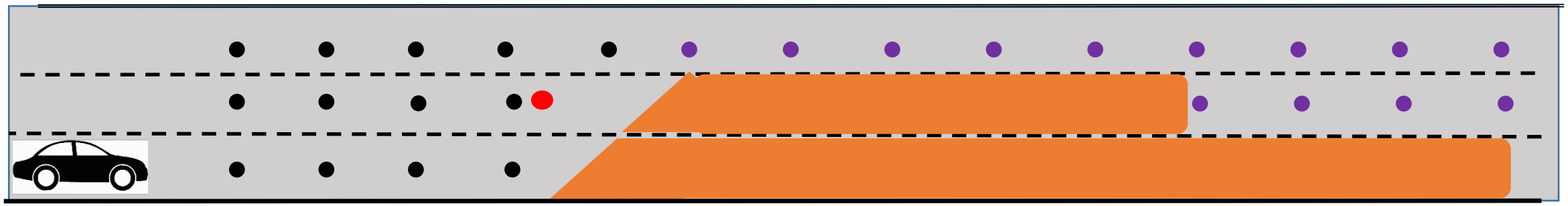

Automated Tool / Software – Open Source Circulation

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Questions?

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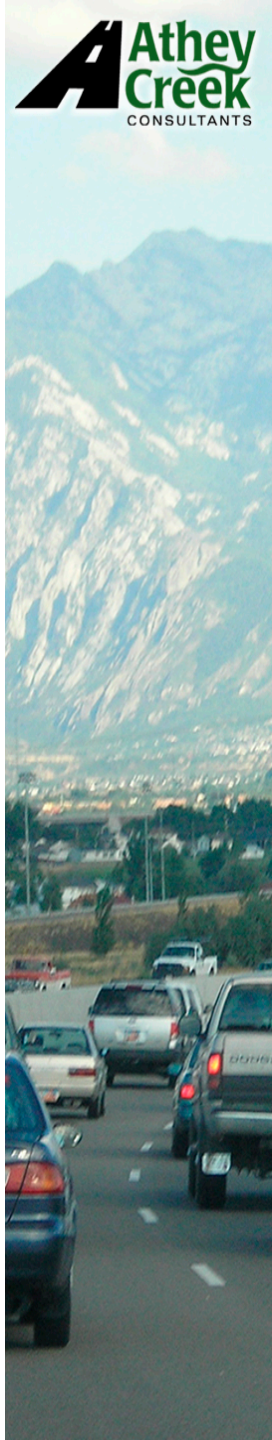
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