Preliminary Truck Congestion Hot Spot Analysis

- Resolution of congestion hot spots can be a cost effective approach to addressing significant source of truck delay
- Potential first phase of highway-oriented goods movement strategy
  - Potential for short to medium-term solutions with more immediate impact while we are assessing the longer-term E-W freight corridor
Preliminary Analysis Methodology

• Methodology developed to screen for truck congestion hot spots
• Use Caltrans Performance Monitoring System (PeMS) data to identify location and severity of truck delays by direction (Oct. 2008)
  – Speed and hourly truck traffic distribution
  – Caltrans Truck AADT data used as daily control totals
Preliminary Analysis Methodology (cont.)

• Identify hourly average speeds less than 45 mph and truck hours of delay per mile during a typical weekday.

• Compare truck speeds from PeMS with truck GPS data

• Compare to American Transportation Research Institute (ATRI) data
  – Comparisons to Caltrans Corridor System Management Plan (CSMP) data underway
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Total Truck Volume and Percentage of Truck Volume Affected by Delay

*Size of dots represents truck volume per day at bottleneck locations with average speed less than 35 MPH, and the red color shows delayed truck volume per day.*
Bottleneck Truck Speed
And Truck Volume Per Hour

Truck Speed (MPH)
- <25
- 25 - 30
- 30 - 35
- 35 - 45

Truck Volume Per Hour
- <250
- 250 - 500
- 500 - 750
- >750

* Size and color of dots represent truck volume per hour and truck speed (MPH) respectively.
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Bottleneck Truck Delay

Truck hours of delay/mile
- <10
- 10 - 20
- 20 - 30
- 30 - 50
- 50 - 110
- Very High Delay

Legend

0 10 20 Miles
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GPS Breadcrumbs and Bottleneck Locations (5 - 6 PM)
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Initial Observations

• Several key clusters of congestion hot spots identified
  – Additional comparisons of GPS speed data and PeMS data need to be conducted
• Trucks on a number of high volume truck segments are still able to avoid high congestion periods
Next Steps

• Verify initial findings with Caltrans, CTCs, COGs and affected cities
• Analyze future conditions with model results
• Begin investigation of causes and potential mitigation projects
  – It could be that in several of these localized hot spots, projects either currently in the pipeline or planned could improve conditions
  – In other cases, we may identify other improvements