

Successful Traffic Incident Management (TIM) Techniques – A Case Study

The I-5/Joint Base Lewis-McChord Joint Operations Group
(JBLM JOG) and I-5/Amtrak Train Derailment

National Rural ITS Conference
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WSDOT Olympic Region
Co-Chair – I-5/JBLM JOG

Roger Millar, WSDOT Secretary of Transportation

John Wynands, Olympic Region Administrator

Area Geography & The Point Defiance Bypass



I-5 is a Geographically Constrained Corridor Between Puget Sound and Joint Base Lewis-McChord

- I-5 is the only continuous route between Seattle and Portland
- At the derailment location, I-5 is pinched between JBLM and the Puget Sound
- I-5 is 3-lanes each direction with 130,000 ADT (Northbound resumed normal operations)
- Only local detour, 2-lane rural arterial (access cut off by recovery efforts)

Bypass project selected to contribute to service outcomes:

- Two additional roundtrips between Seattle and Portland (for a total of six)
- Improved on-time reliability to 88%
- Shorter travel times between Seattle and Portland (saving 10 minutes)
- Sound Transit owns R/W and Signals, Amtrak operates, BNSF controls trains, WSDOT and ODOT own train sets

Preplanning Began 4 Years Earlier

December 16, 2013 Cross-over Fatality Incident:

- Closes Southbound I-5 for 8 hours
- Resulted in the Creation of the I-5/JBLM Joint Operations Group



“In preparing for battle I have always found that plans are useless, but planning is indispensable” ~ Dwight D. Eisenhower

I-5/JBLM Joint Operations Group

Working Group Charter

Created and signed 2015 - Updated 2017

- ✓ JBLM Installation Commander
- ✓ Chief of Washington State Patrol
- ✓ Secretary of Transportation

Purpose:

- Improve responder interoperability using Unified Command
- Identify available resources that can be shared between agencies
- Reduce response and recovery times
- Align with and institutionalize best practices for Traffic Incident Management
- Exercise best practices as a group
- Enhance travel time reliability through the I-5 corridor
- Ensure a forum is maintained to communicate issues, ideas and solutions



12. Approval

A handwritten signature in blue ink, appearing to read "Nicole Lucas".

Nicole Lucas - Colonel, LG Commanding JBLM

A handwritten signature in blue ink, appearing to read "John Baisie".

Chief John Baisie - Washington State Patrol

A handwritten signature in blue ink, appearing to read "Roger Millar".

Roger Millar, PE, AICP
Secretary, Washington State Department of Transportation

Ongoing Working Group Initiatives

- Interagency Coordination, Cooperation and Collaboration
- Corridor-wide Pre-planned Detour Plans
- Regional Interagency Communication Interoperability
- Interagency Resource Listing and Typing
- Exercise Planning to Improve Response and Recovery Times

Preparation for New Passenger Service: All Partners Participated in an August 2017 Derailment Exercise



Turning Plans into Actions



Inaugural Run – Amtrak Cascades Passenger Train 501
December 18th, 2017 @ 7:34 am - Derailment

Turning Plans into Actions

- ✓ TMC Operators Monitoring First Run of Passenger Train Service – Saw it Happen
- ✓ Internal WSDOT Notifications - Activate Region and HQ EOC
- ✓ Immediate Coordination with JBLM, WSP, and Local Agency Partners
- ✓ Implement “Local” Pre-Planned Detour – Open Restricted Gate to Public Traffic and Use Installation and County Roads
- ✓ Assign Resources to Incident Command Post (ICP) and Joint Information Center (JIC) - Staff/Equipment (National/International Story)
- ✓ **Separate** Congestion Management Efforts from ICP/Scene Response
- ✓ Activate Advanced Messaging (Canadian Border, Mountain Passes, Oregon Border)
- ✓ Identify, Activate, and Manage Regional Detours



Regional Detour Options

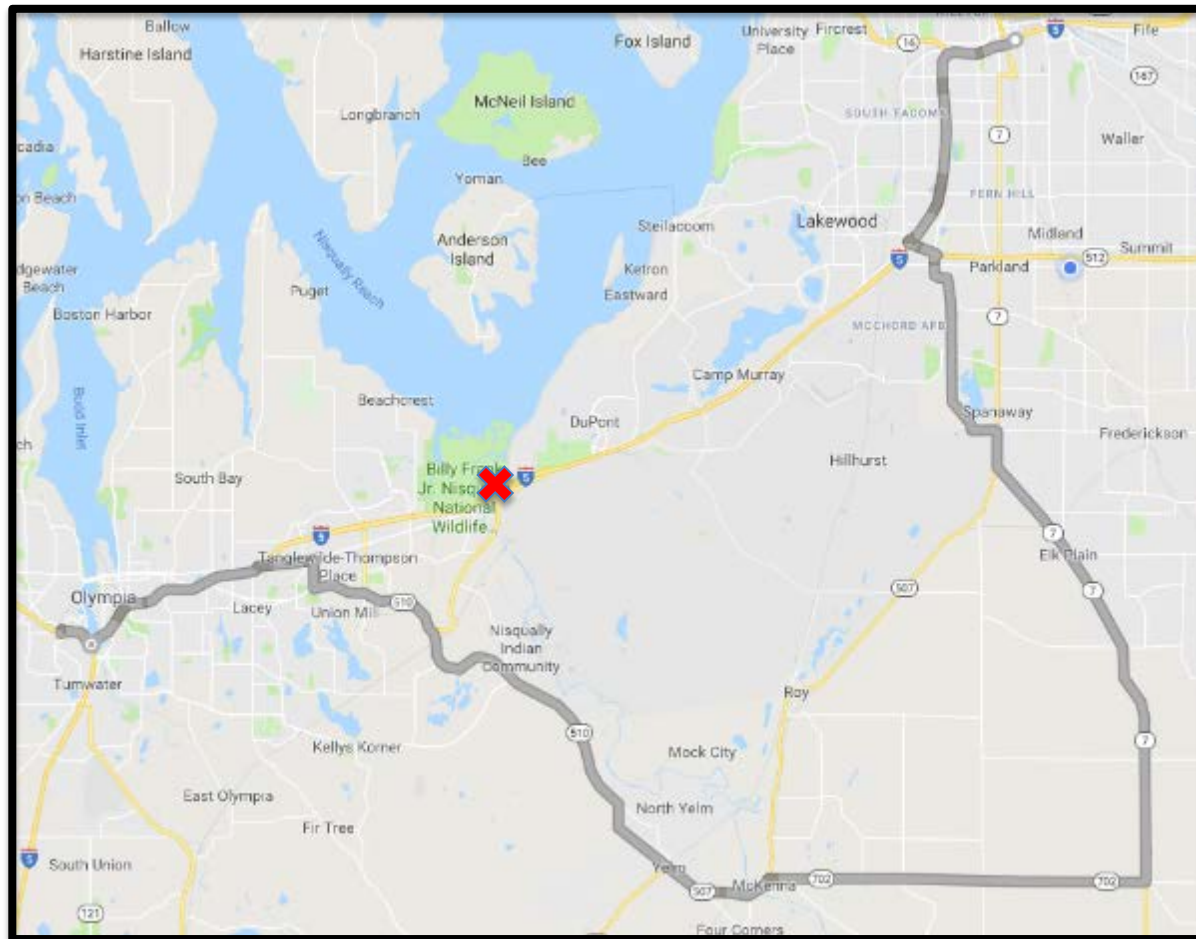
Given Conditions:

- All Three I-5 Southbound Lanes Blocked
- 65,000 Average Daily Traffic Count (SB I-5 Only)
- Initial Recovery Time Estimate: **Multiple Days**



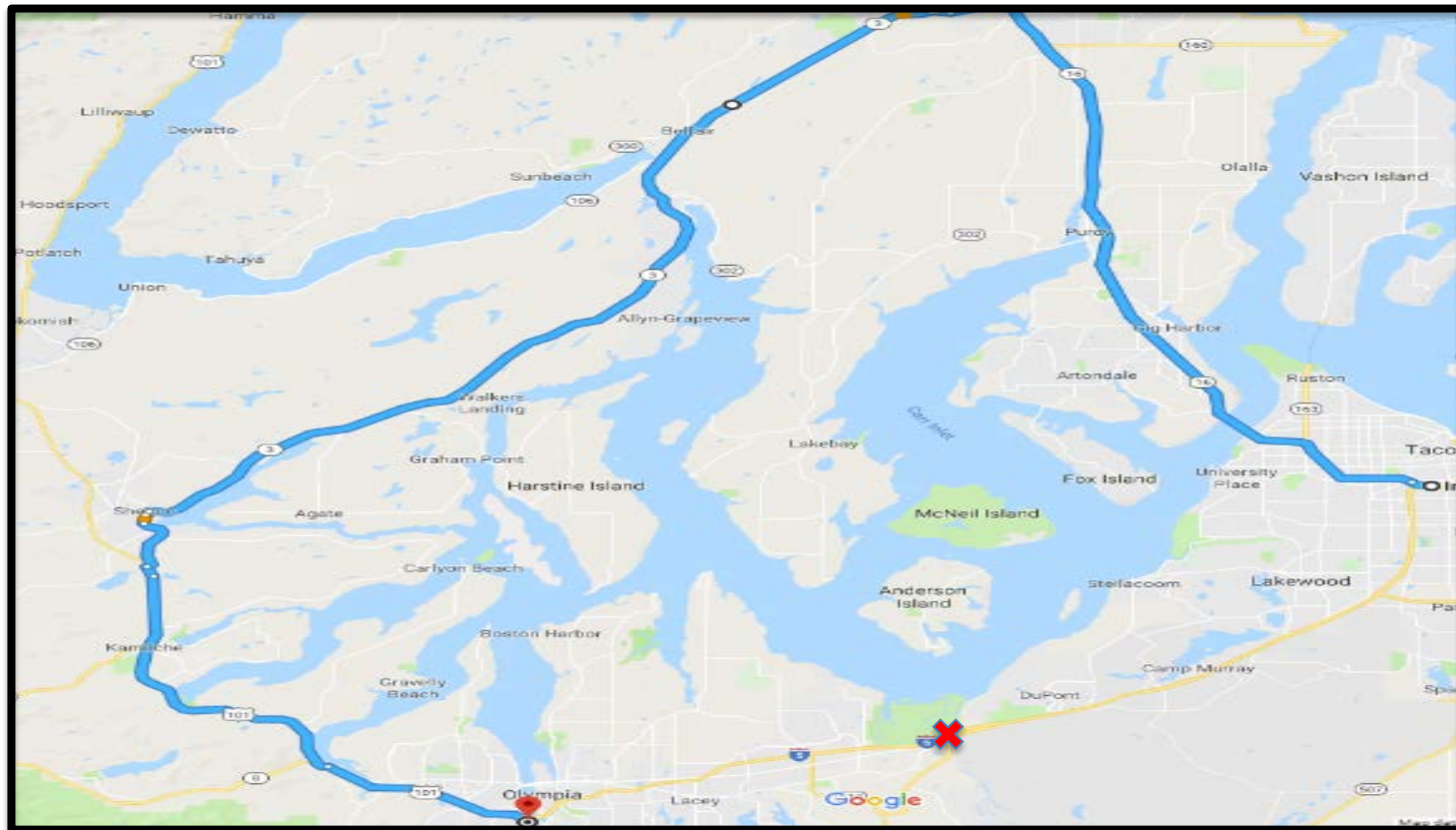
Stay On I-5/Local Pre-Planned Detour
Shortest But Slow Local Route
33 miles/approx. **3 to 4 hours** at Peak
Freeway/One Lane Through

Regional Detour Options



SR 512 to SR 7 to SR 702 to SR 507/SR 510
Shorter but Undesirable
60 miles/approx. **7 to 9 hours** at Peak
Mostly Two-Lane Rural with Signals through Yelm

Regional Detour Options



SR 16 to SR 3 to US 101
Preferred/Most Reliable Route
80 miles/approx. **Two Hours** at Peak
Freeway/Two-Lane Mix

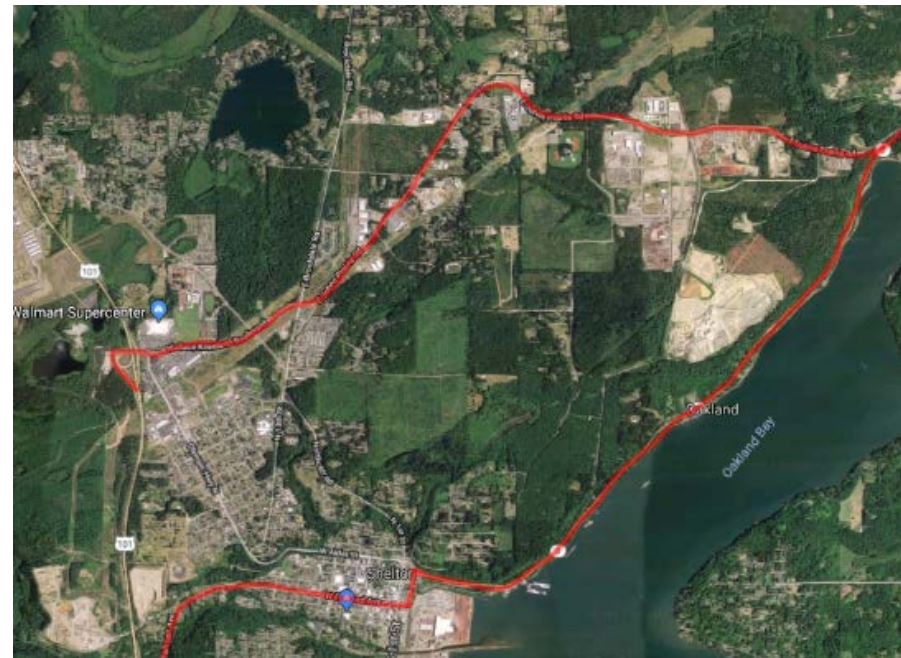
Assess/Consider/Refine

Detour Route Specifics

- ✓ Traffic Office Team Focus on Coordination with Pierce/Thurston County Officials for South End of Local JBLM Detour
- ✓ Coordination with City of Shelton for South End of SR 16/SR3/US 101 Regional Detour
- ✓ Coordination with City of Yelm for SR 512/SR 7/SR 702/SR 507/SR 510 Regional Detour

Considered but not implemented:

- Full Contra-flow: Converting County Roads to One-Way Two Lane Configuration
- Partial Contra-flow: Splitting I-5 NB Traffic to Accommodate Some SB I-5 Traffic

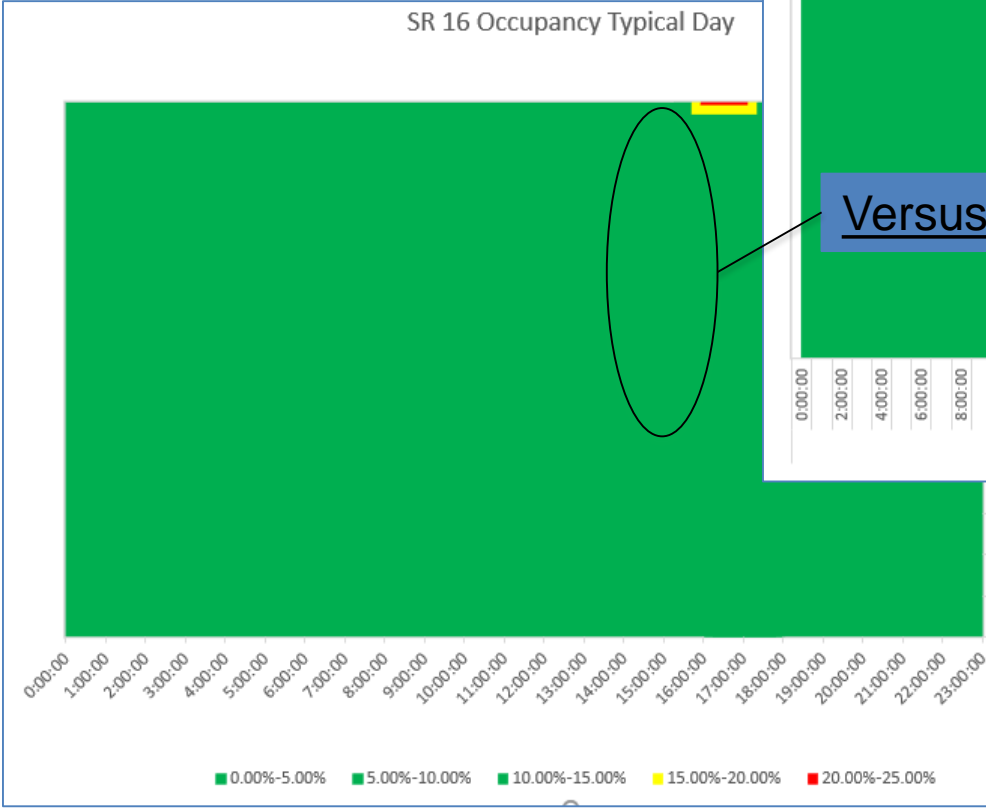


Monitoring Traffic Conditions

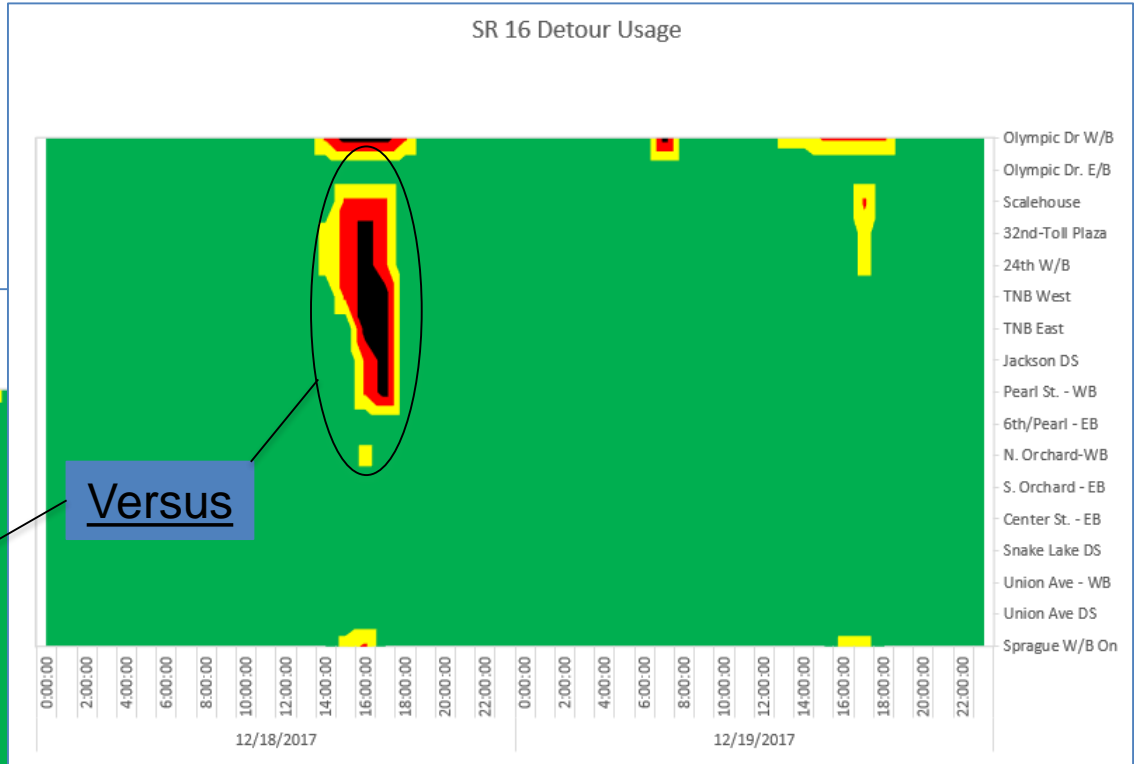
Measuring Diversion Success

SR 16 Typical Occupancy at Peak Hours

SR 16 Occupancy Typical Day



SR 16 Detour Usage

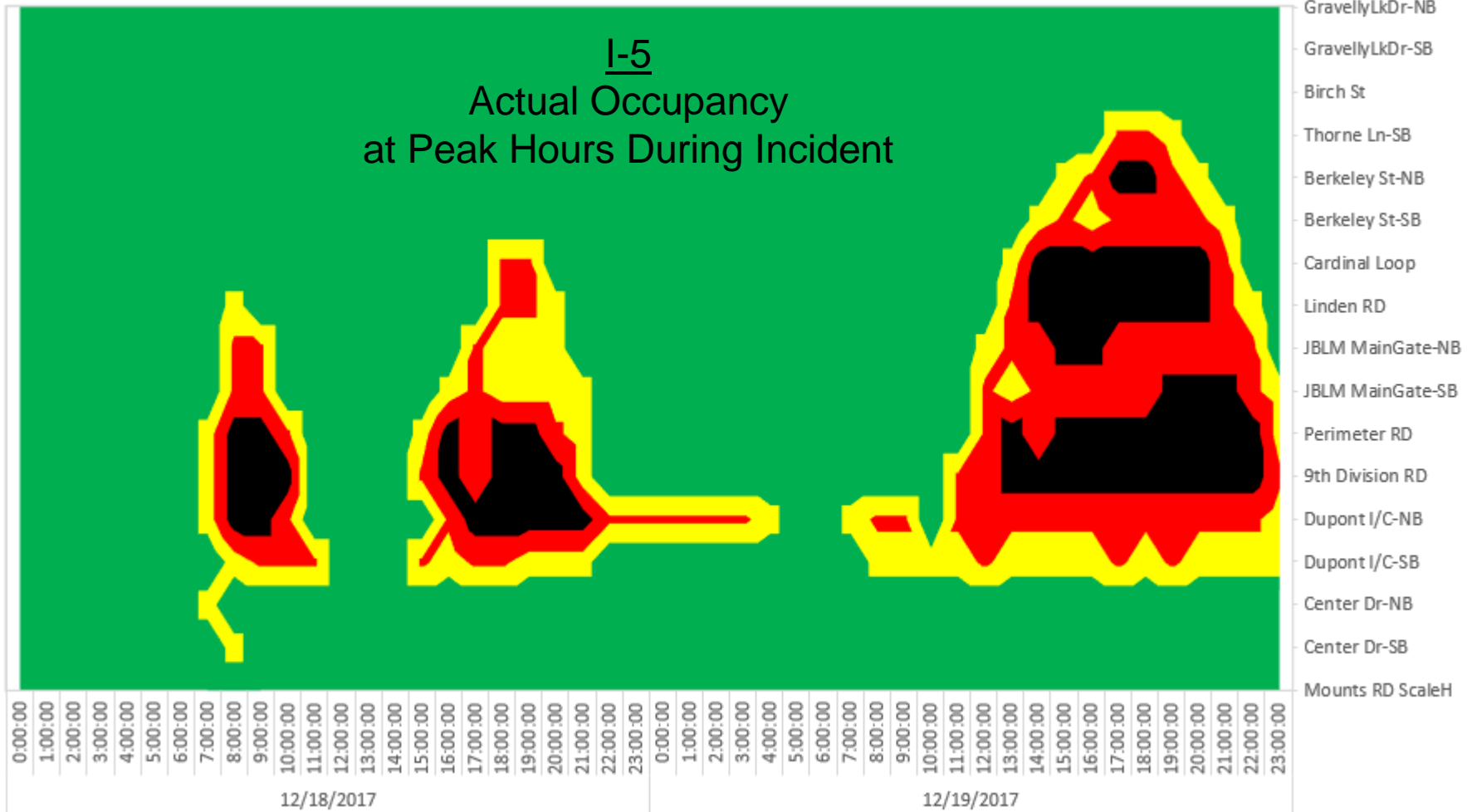


SR 16 December 18th/19th Occupancy

Monitoring Traffic Conditions

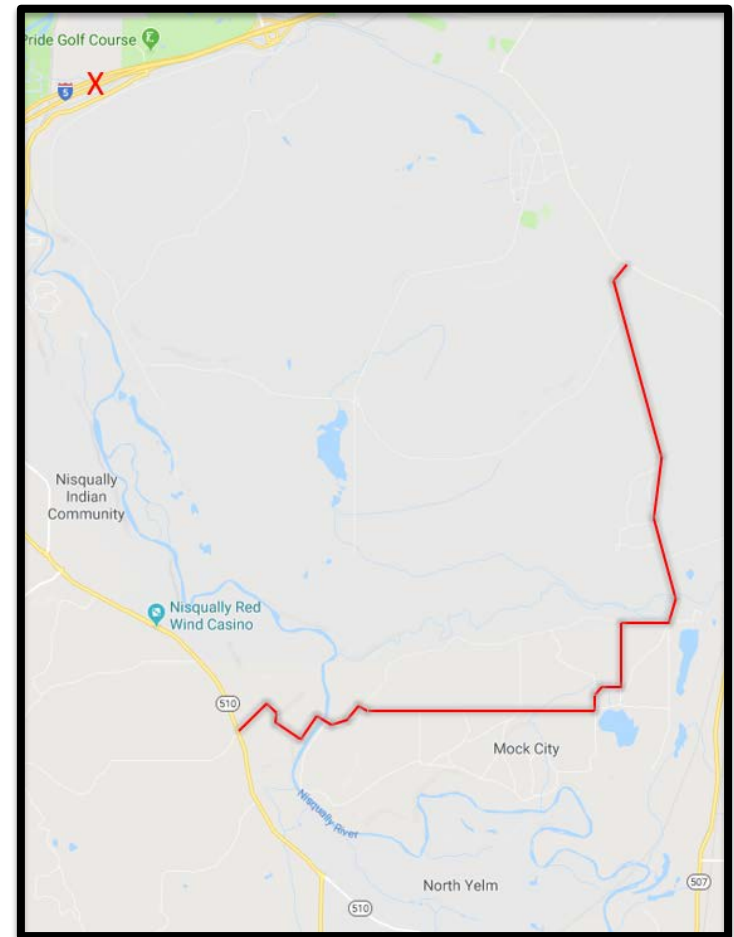
Measuring Diversion Success

Perimeter Road Usage



Day 2 – Evolving Traffic Management Efforts

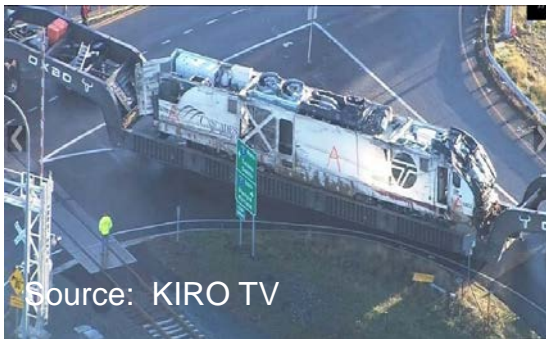
- Day 2 – JBLM Opens Another Relief Route (Tank Crossing)
- Keys and Training Delivered to City of Yelm Police for Signal Operations
- WSDOT and WSP Flagging at Remote Hot Spots



Road clearance and partnerships

Clearing Derailed Train and Roadway Was a Tremendous Challenge – Many Partners Working Together

- This was NOT our Scene! Fortunately WSP's new UAV 3-D mapping program quickly documented the area for NTSB investigators; allowing clearing of roadway and track to begin quickly
- Rail companies used specialized equipment to move rail cars and 270,000 pound locomotive
- WSDOT maintenance crews pre-staged and began inspections and repairs as soon as each area was cleared
- Prior planning by JBLM I-5 Working Group had agreements in place for a detour through JBLM, allowing local traffic to detour through Center Drive onto the military base
- WSP, WSDOT Maintenance, and local police officers flagged remote detour route while WSDOT Incident Response Team and specialized Work Zone Traffic Control team focused on the local scene
- WSDOT modified detours and signal timing as needed to address local concerns



Cleanup/Recovery Operations

Overcoming Challenges

- Superload Vehicle for Locomotive – Needed to Rebuild/Add Extra Pieces to Handle Load
- Ensuring Scene Safety for Cleanup and Recovery Operations
- Great Partnership with Responders
- WSDOT Acted as Lead to Coordinate Various Work Crews, Create Space as Needed for Removing Train Cars, Debris, Repairs, etc.
- Traffic Signal Flagging at Bottlenecks Along Regional Detour Routes



Cleanup/Recovery Operations

Reopening I-5 – The Exit Strategy

- Day 3 - Set Expectations for 5 PM Reopening
- Staged Approach - preset the needed traffic control (open 2 of 3 lanes)
- Communicate plan internally and externally
- Media captures the “shot” as roadway reopens
- Timing mainline traffic control removal
- Close JBLM preplanned detour – not everyone happy that this new route was going to close
- Stage removal of flagged intersections on other detour routes



Moving Forward

Take a deep Breath and ...

- Pursue after-action improvements
 - Remote Signal Operations
 - Commercial Vehicles Concerns
 - Crowd-sourced Applications
 - Radio Communications
- Commit to learn and improve
- Model the Joint Operations Working Group elsewhere
- Say Thank You



ESSB 6106 (p. 46) Proviso Language:

Section 218, (8)

Within existing resources, the department shall meet with local stakeholders in south Pierce county and North Thurston county to discuss potential solutions to traffic congestion; emergency management concerns regarding routes away from natural disasters and around incidents similar to the train derailment that occurred on December 18, 2017; and what state transportation investments would benefit the economic development of the area. The department shall provide regular updates on its progress to the joint transportation committee.

Questions?

For more information,
please contact:

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