



WB I-70 Peak Period Shoulder Lane Project

Technical Team Meeting #17

August 8, 2018

CDOT I-70 Mountain Corridor

AGENDA

1. INTRODUCTIONS AND OVERVIEW

2. PROJECT TT CHARTER

3. RESPONSES TO TECHNICAL TEAM ISSUES

4. OUTCOMES FROM ISSUE TASK FORCE MEETINGS

5. OUTREACH SUMMARY

6. FOLLOW UP

- Report Out

7. DISCUSS PROPOSED SOLUTIONS

- Rock cut / Rock fall
- Guardrail
- Signing and Traffic

8. OUTSTANDING ISSUES

9. DEVELOP CRITERIA FOR

10. NEXT STEPS

- Upcoming Meetings
- Parking Lot

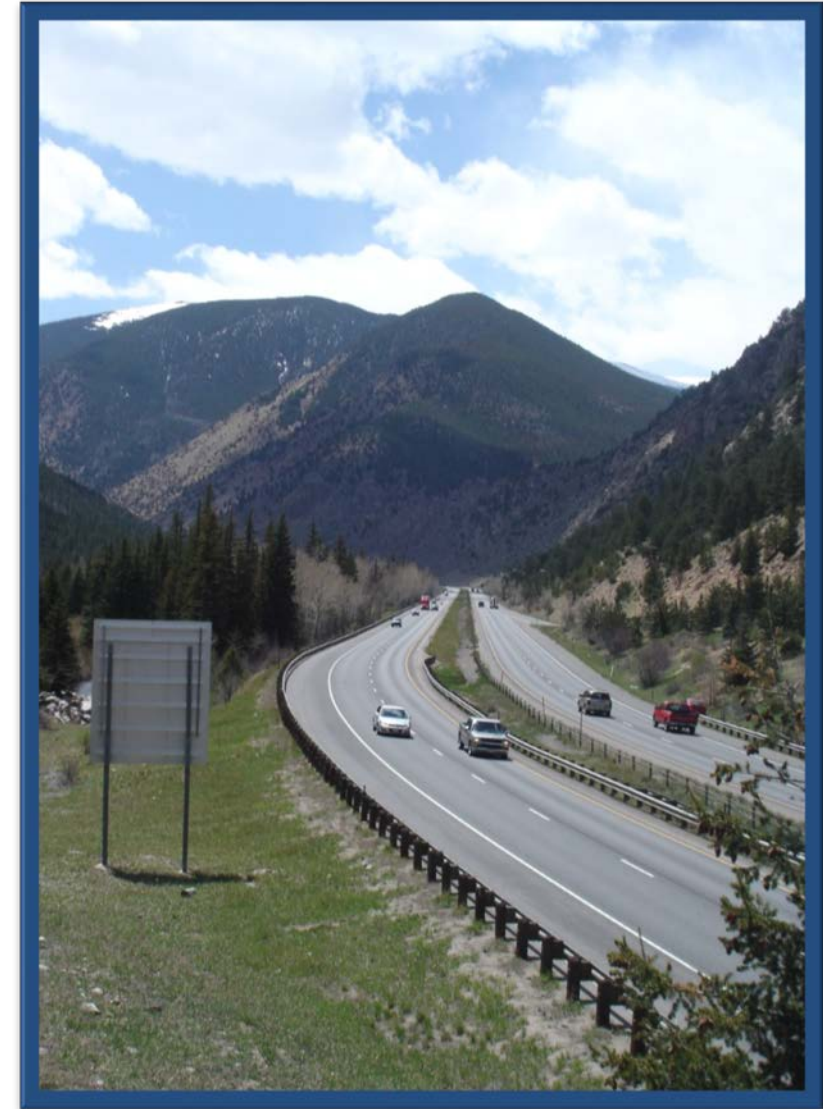




INTRODUCTIONS AND OVERVIEW

PROJECT UPDATES

- Floyd Hill
- Region 3 Vail Pass
- Idaho Springs Transit Center
- Colorado Boulevard Reconstruction
- Clear Creek Greenway
- Fall River Road Bridge
- Smart 70 / RoadX
- Geohazard Mitigation Program
- INFRA Grant
- Variable Speed Limit
- Concept of Operations

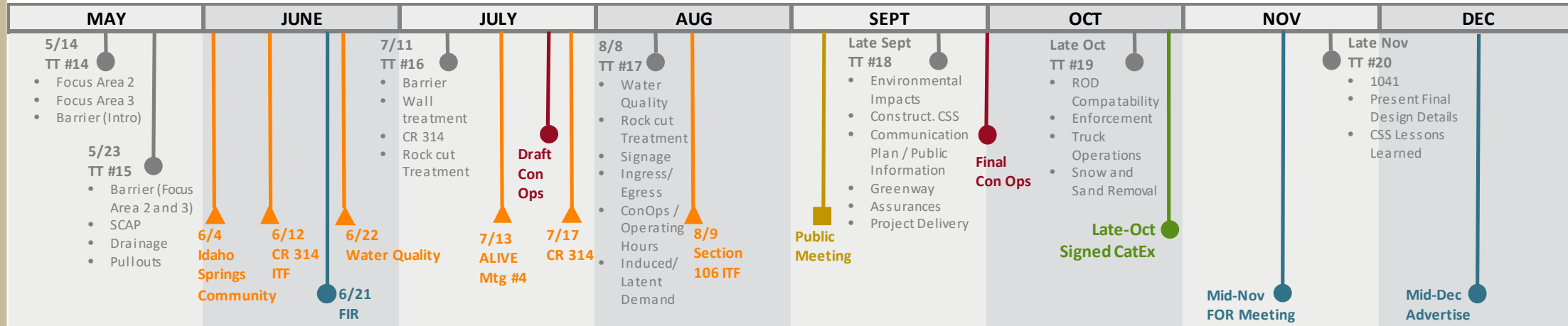


RELATED PROJECTS AND SCHEDULES

Project	NEPA	Design / Advertisement	Start Construction
<p>Fall River Road</p> <p>The Proposed Action constructs a new bridge that connects Stanley Road to the Fall River Road/I-70 interchange near Mile Post (MP) 238. Currently, bicyclists use I-70 to go between the Fall River Road community and Idaho Springs. With the Westbound Peak Period Shoulder Lane (PPSL) project, that access will no longer be available. This project is advanced mitigation for the WB PPSL project that will provide bicyclists a route between Fall River Road and Idaho Springs once I-70 is no longer available. The bridge will also allow vehicles to use it based on community preference.</p>	Fall 2018	End of 2018	Early 2019
<p>Westbound PPSL</p> <p>The Proposed Action includes modifications to I-70 for approximately 13 miles for a peak period toll lane, mitigation for wildlife, SH 103 modifications, pullouts for safety and enforcement, rock fall mitigation, drainage improvements, pedestrian improvements and active traffic management.</p>	Fall 2018	Winter 2018/2019	Spring 2019
<p>County Road 314 (Phase II)</p> <p>County Road 314 will be improved between the Game Check Station Trailhead to just west of the Exit 241 interchange. Improvements include roadway reconstruction, restriping, and minor widening for safety enhancement and bicycle and pedestrian connectivity.</p>	Early 2019	Summer 2020	Spring 2021
<p>Clear Creek Greenway</p> <p>Construction of portions of the multiuse Clear Creek Greenway Path. The segments include East Idaho Springs Trail to Game Check Station Trailhead, Dumont Trailhead Connection to Lower Dumont Creek Access, and the Animal Shelter to Dumont Trailhead.</p>	Early 2019	Summer 2020	Spring 2021

SIMPLE SCHEDULE

CSS TRACKING SCHEDULE



PROJECT ELEMENTS DISCUSSION

- August TT
 - Report out: Rock cut and rock fall mitigation
 - Report out: Sediment control and water quality
 - Signage and Traffic
- September TT
 - Environmental Impacts
 - Construction CSS
 - Communication Plan
 - Assurances
 - Project Delivery
 - Greenway





FOLLOW UP

REPORT OUT

- ALIVE Meeting #4 – 7/13/18
- CR 314 ITF #2 – 7/18/18
- Water Quality Meeting – 7/26/18



ALIVE

- Addition of four more median gaps for a total of 8
- Speed study had been completed by CDOT to reduce speed limit to 45 mph on US 40 to I-70 WB on-ramp
- Removal of vegetation was considered in select areas, however there was concern about unintended consequences, so this will not be implemented



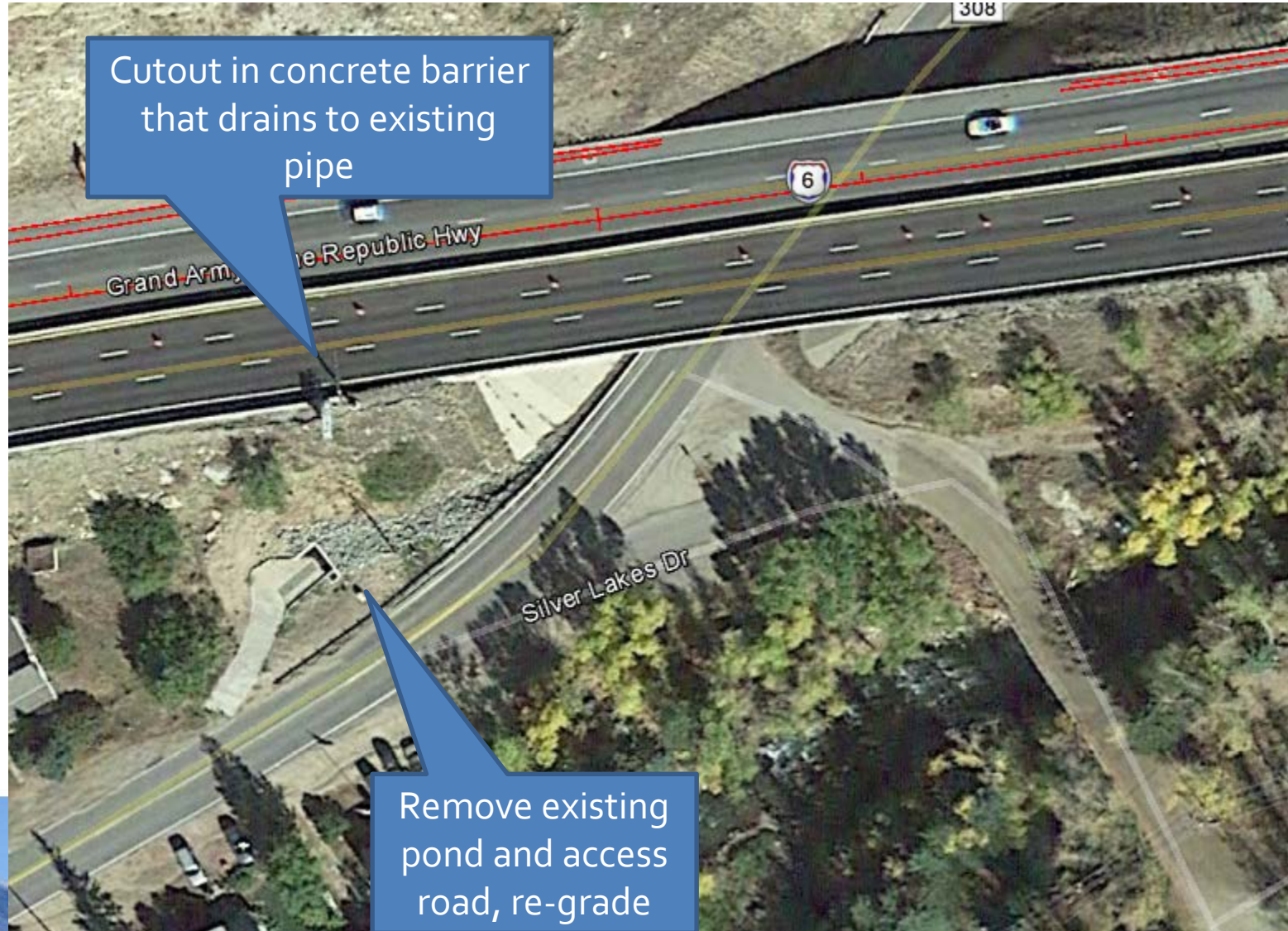
Water Quality – Proposed Sediment Basins

FOLLOW UP



Water Quality – Lawson

- Rebuild pond

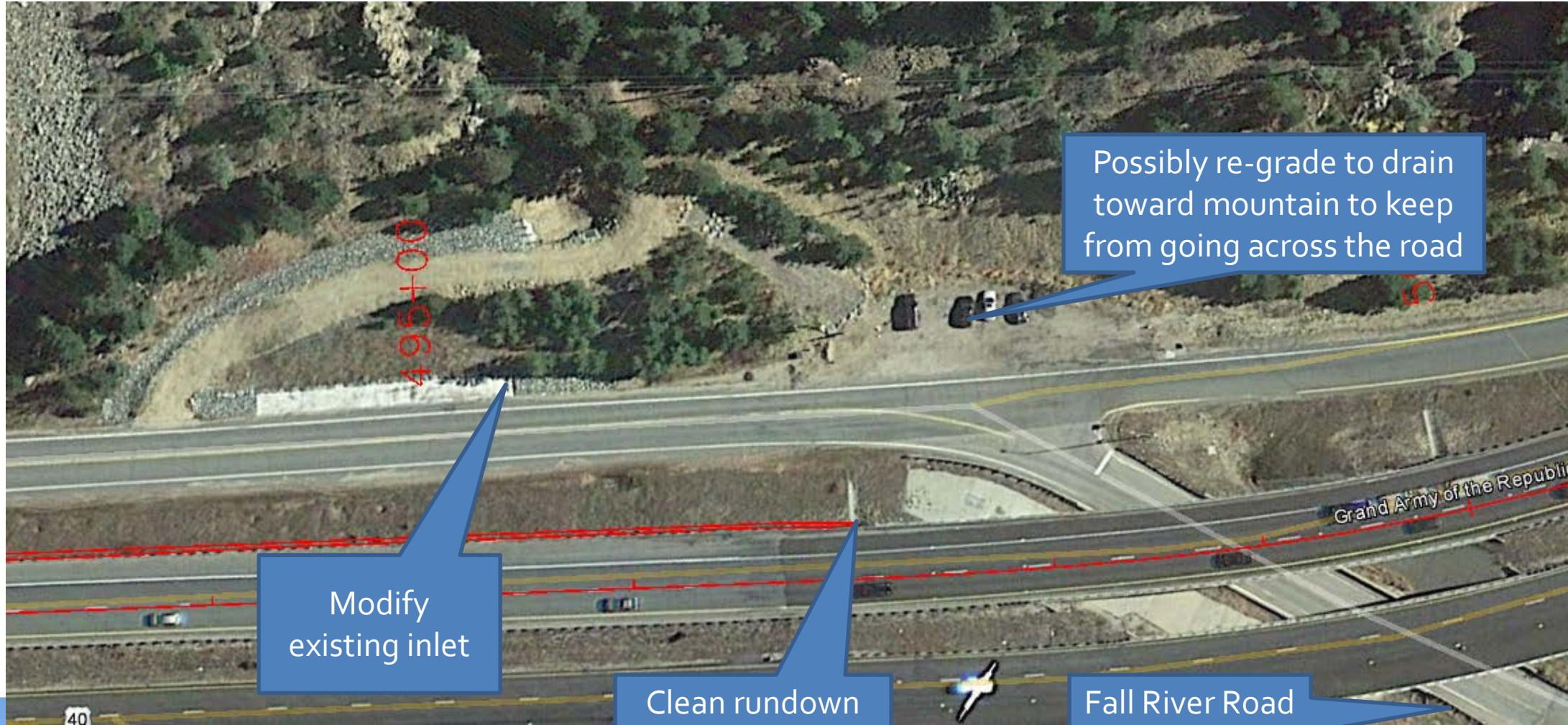


FOLLOW UP



Water Quality – Fall River Road

FOLLOW UP

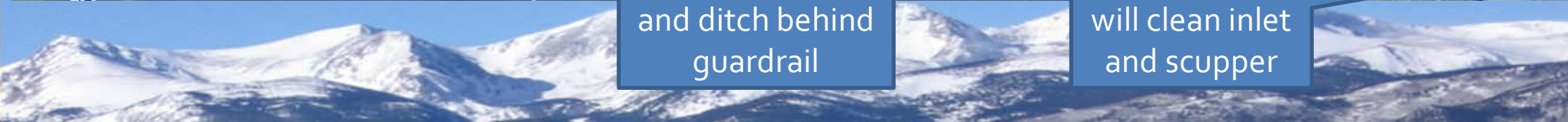


Possibly re-grade to drain toward mountain to keep from going across the road

Modify existing inlet

Clean rundown and ditch behind guardrail

Fall River Road will clean inlet and scupper

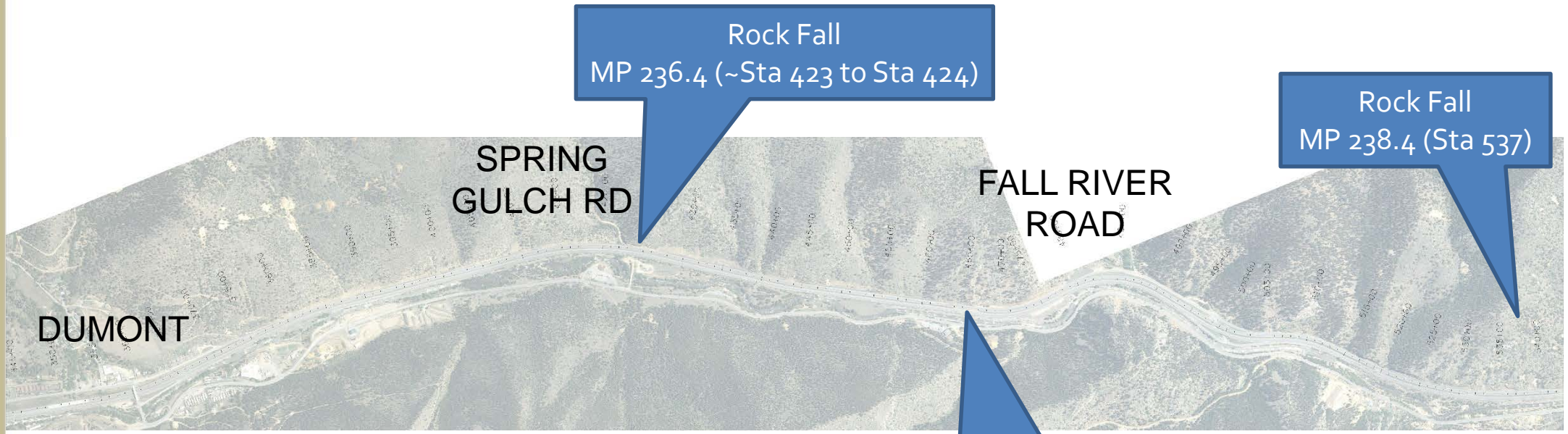




**DISCUSS PROPOSED
SOLUTIONS**

DISCUSS PROPOSED SOLUTIONS

ROCK CUT / ROCK FALL



ROCK CUT – MP 239 (~Sta 549 to 559) at Exit 239

DISCUSS PROPOSED SOLUTIONS



ROCK CUT – MP 239 (~Sta 549 to 559) at Exit 239

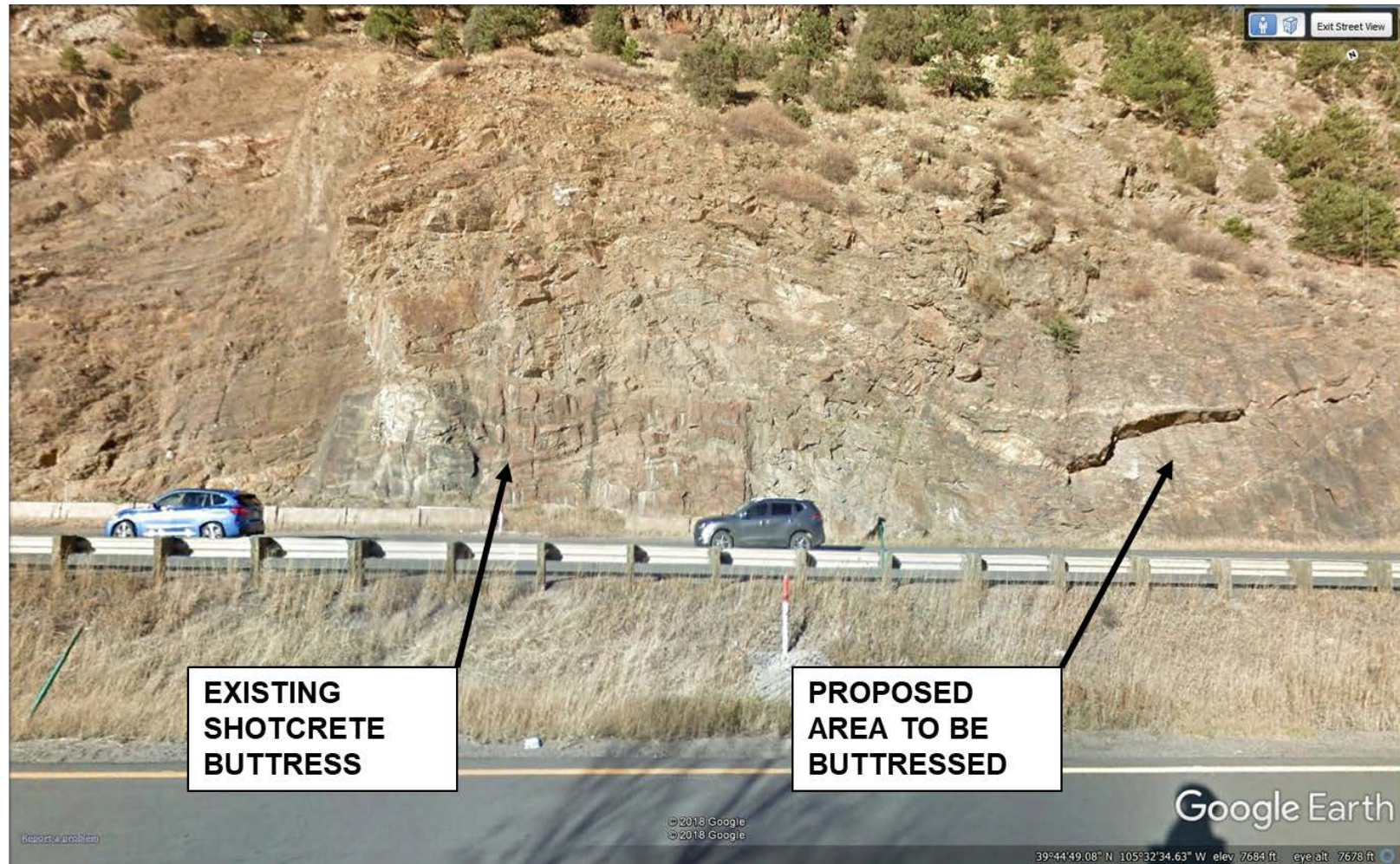
DISCUSS PROPOSED SOLUTIONS



EXAMPLE: ROCK CUT WITH MESH EAST OF THE VETERANS MEMORIAL TUNNELS

ROCK FALL – MP 238.4 (~Sta 537)

- Sculpted Shotcrete



EXAMPLE: EXISTING SHOTCRETE BUTTRESS JUST WEST OF PROPOSED BUTTRESS

DISCUSS PROPOSED SOLUTIONS

ROCK FALL – MP 237.1 (~Sta 464 to Sta 467)

- Bolt and Mesh



ROCK FALL – MP 237.1 (~Sta 464 to Sta 467)

DISCUSS PROPOSED SOLUTIONS



EXAMPLE: SLOPE ON SOUTH SIDE OF I-70 JUST WEST OF SODA CREEK ROAD

ROCK FALL – MP 236.4 (~Sta 423 to Sta 424)

- Cut slope back approximately 20' to provide catch ditch and eliminate fence



EXAMPLE: EXISTING ROCK CATCH DITCH JUST EAST OF DUMONT



GUARDRAIL / BARRIER

- For project: 55,100 LF / \$3.5 million
- For remaining WB (inside and outside): 10,800 LF / \$440,00
- For median Type 4 with glare screen: 22,400 LF / \$3.2 million
- Safety and consistency
- Scope and budget implications



CORRIDOR SIGNING

- Existing Signing
 - 197 signs
 - 4615 SF (approximately 2900 SF added for WB)
- Proposed Signs
 - 43 signs (Static and Dynamic Signs)
 - 2818 SF
- Existing Signs Suggested to be Removed
 - 8 signs
 - 160 SF



ACCESS LOCATIONS

- Ingress (Entry)
 - East of Veterans Memorial Tunnels (Lane Begins)
 - West of Idaho Springs (Idaho Springs Traffic)
- Egress (Exit)
 - East of US 40 (Winter Park Traffic)
 - West of US 40 (Lane Ends)
- Other Locations Considered
 - Egress east of SH 103
 - Too close to lane entrance (Idaho Springs-bound traffic can use GP lanes then access PPSL west of Idaho Springs)
 - Egress east of Downieville
 - Not compatible with primary function of the PPSL (through traffic). Local trips can use GP lanes, which will operate with less delay due to presence of PPSL



WB PPSL ACCESS LOCATIONS

DISCUSS PROPOSED SOLUTIONS

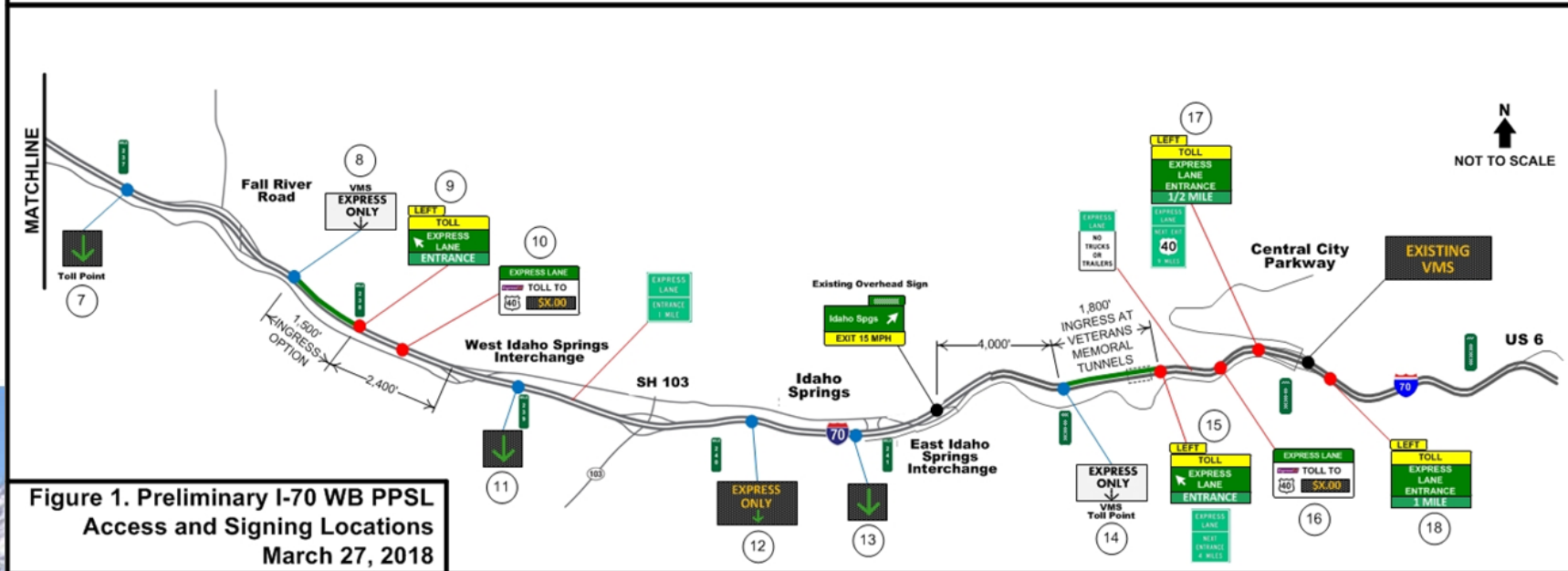
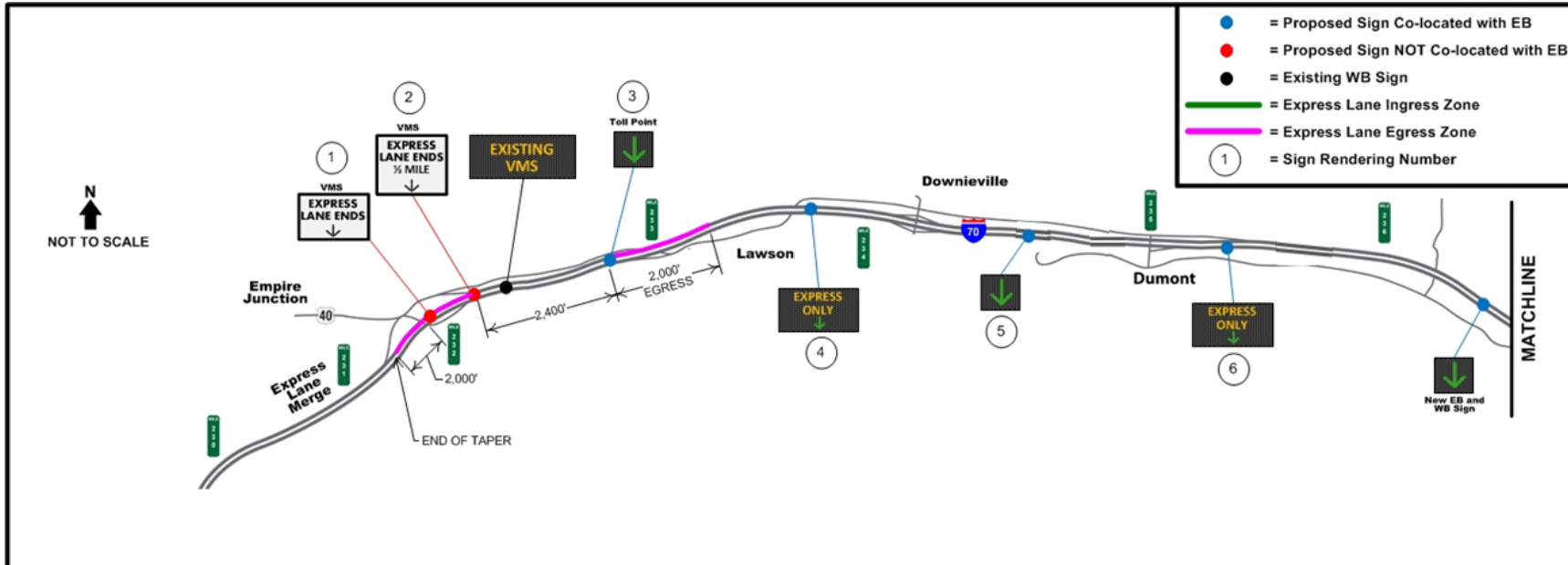


Figure 1. Preliminary I-70 WB PPSL Access and Signing Locations March 27, 2018

COMPATIBILITY WITH FLOYD HILL

- Floyd Hill project is still a work in progress
- Transition will have to be confirmed by the Floyd Hill project once there is a Proposed Action
- Assumed that the west end of the Floyd Hill project will extend through the Veterans Memorial Tunnels, and PPSL entrance will shift to the west side of the tunnels
- Transition between Floyd Hill and PPSL was designed to utilize as much PPSL entrance signage as possible



WB ACCESS LOCATIONS WITH FLOYD HILL

DISCUSS PROPOSED SOLUTIONS

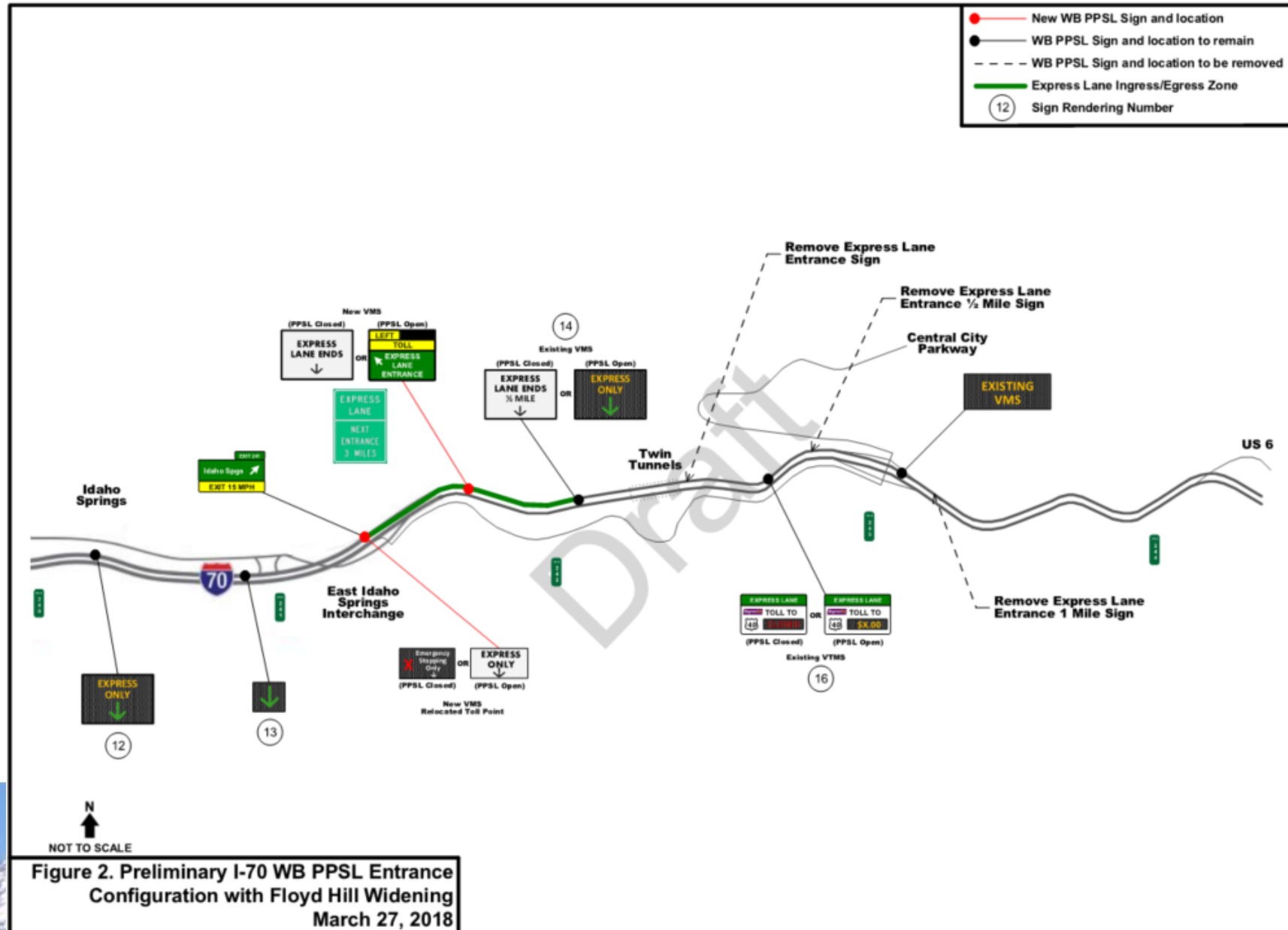
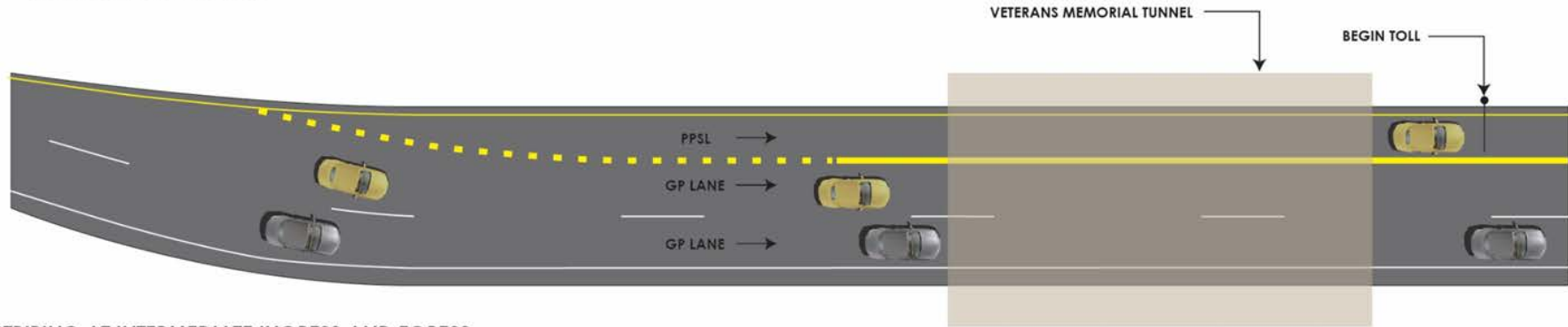


Figure 2. Preliminary I-70 WB PPSL Entrance Configuration with Floyd Hill Widening March 27, 2018

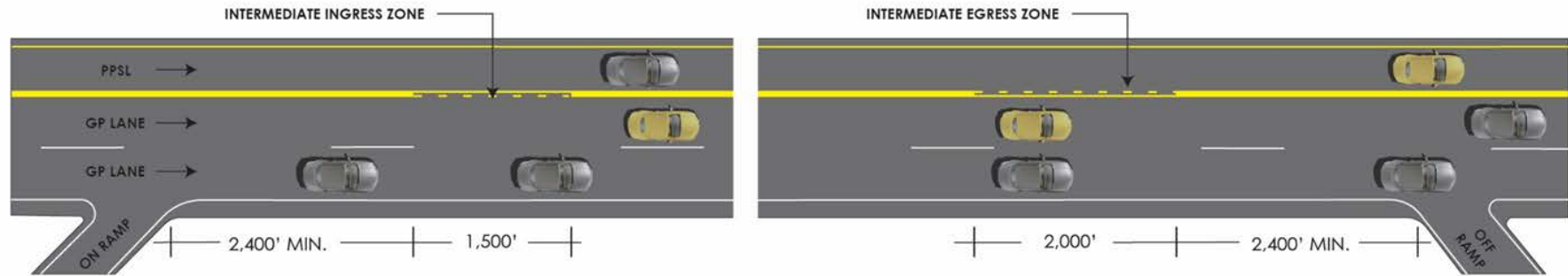
DISCUSS PROPOSED SOLUTIONS

WB PPSL ACCESS STRIPING

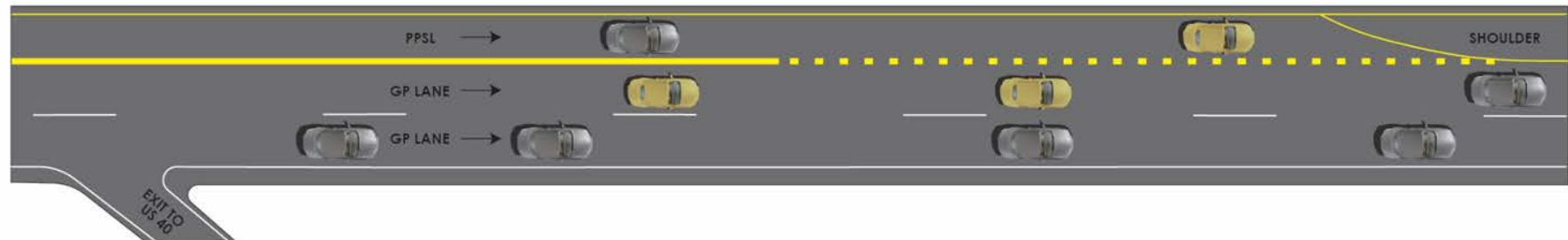
STRIPING AT PPSL BEGIN



STRIPING AT INTERMEDIATE INGRESS AND EGRESS



STRIPING AT PPSL TERMINATION



OPERATIONS – EB PPSL LESSONS LEARNED

- Initial Operations, included in Cat Ex documentation:
 - Based on historical congestion patterns
 - 20 Percent of annual days (73 Days)
 - 7.5 Percent of the time (657 Hours)
- Initial MOU, October 2014:
 - 20 Percent of Annual Days (73 Days)
 - 7.5 Percent of the time (657 Hours)
 - Projected Peak Periods of Congestion
 - Saturdays, Sundays, Holidays December-April, July-September
 - 9 AM – 8 PM



OPERATIONS – EB PPSL LESSONS LEARNED

- Lessons Learned in Season 1
 - Can't predict on-set of congestion
 - Need for operator safety during pre-opening procedures
 - Need to meet driver expectations
- Current Operations (Revised MOU, September 2017):
 - 100 Days / 1,163 Hours
 - Projected Peak Periods of Congestion
 - Saturdays, Sundays, Holidays
 - Winter: Thanksgiving-April
 - Summer: Memorial Day – Labor Day
 - As Needed (Sundays)
 - Fall: September – October 31
 - 9 AM – 8 PM
 - Earlier/later if congestion warrants



WB PPSL HOURS OF OPERATION - CONSIDERATIONS

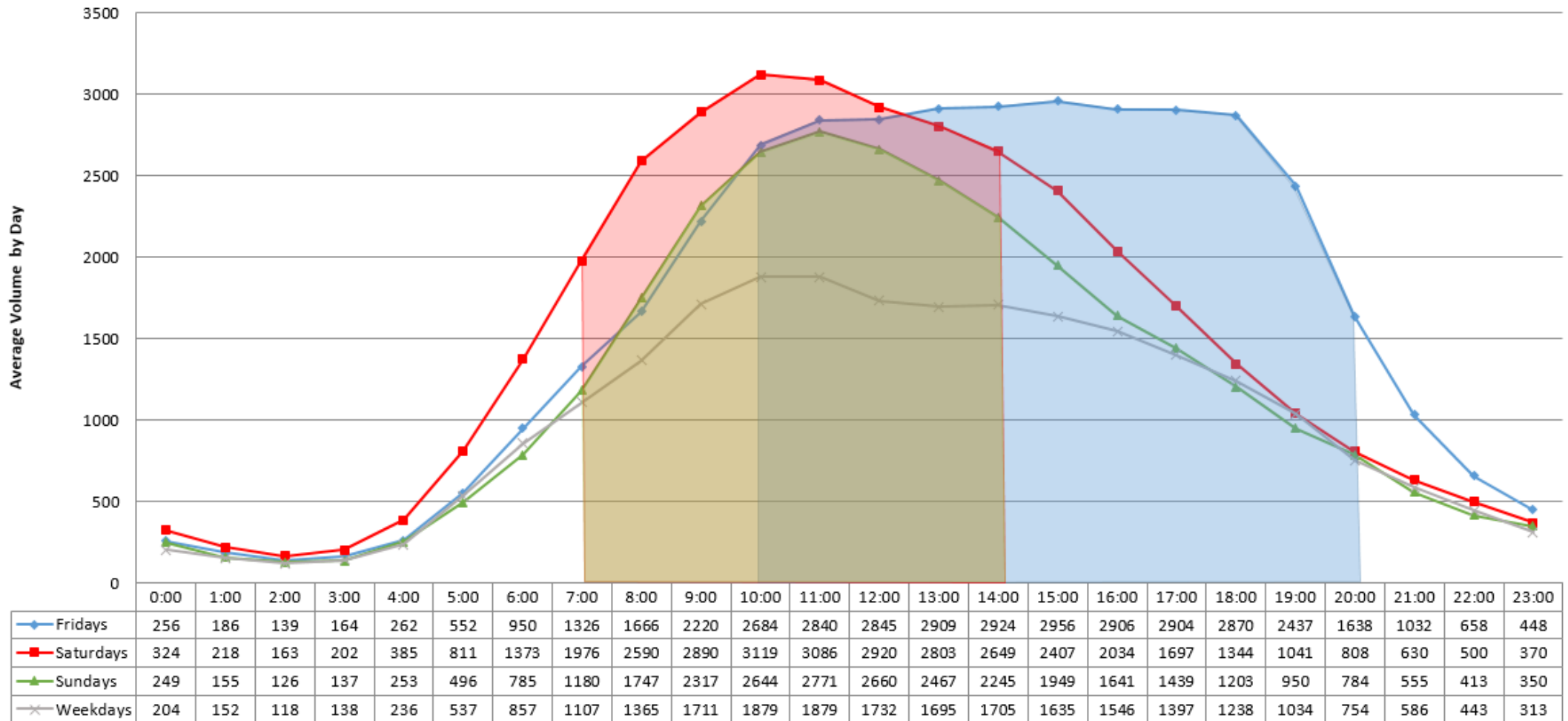
- Westbound hourly volumes
- Westbound congestion
- Lessons learned from eastbound
 - Congestion
 - Operator safety
 - Driver expectations



TYPICAL WB TRAFFIC VOLUMES - SUMMER

DISCUSS PROPOSED SOLUTIONS

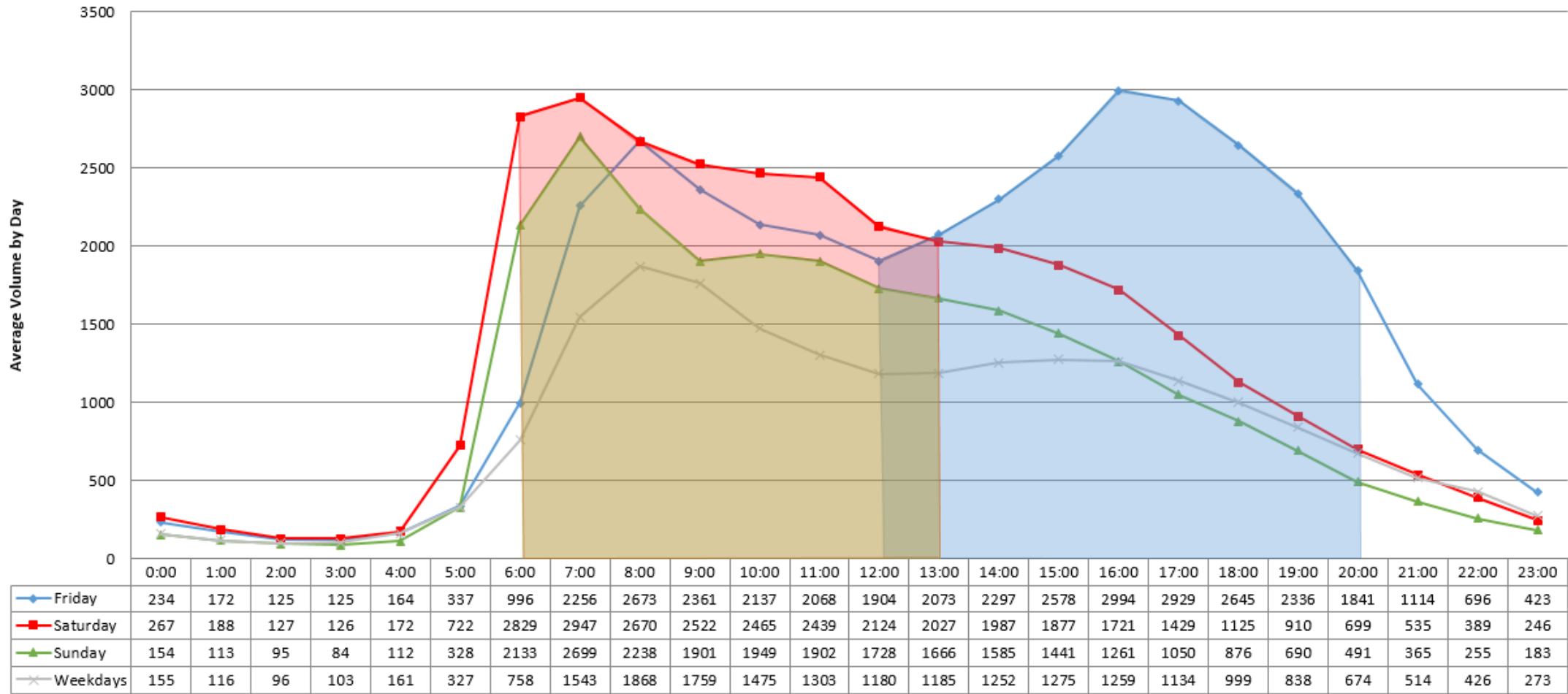
Average Daily Traffic Volumes at Twin Tunnels ATR (Summer 2016)



DISCUSS PROPOSED SOLUTIONS

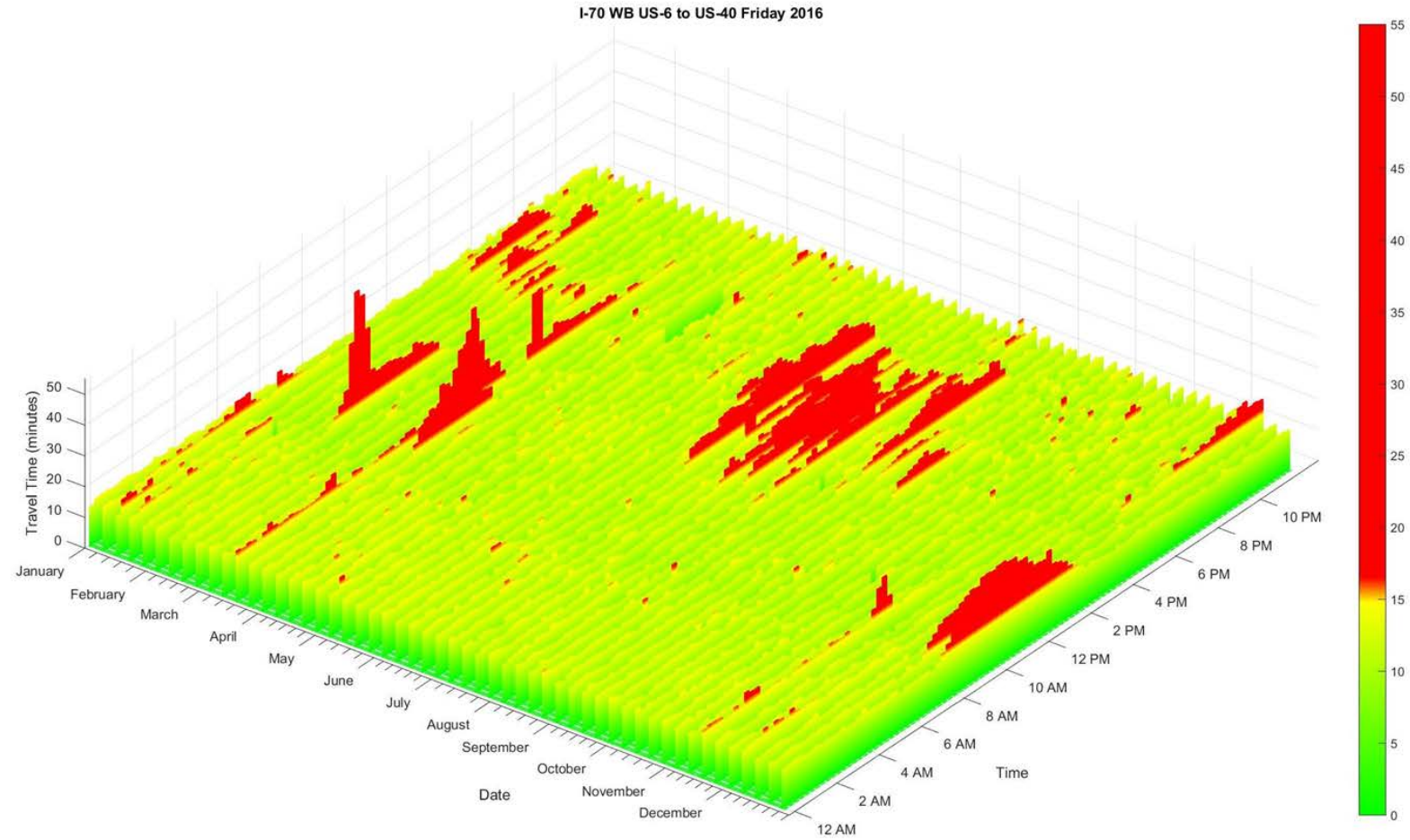
TYPICAL WB TRAFFIC VOLUMES - WINTER

Average Daily Traffic Volumes at Twin Tunnels ATR (Winter 2016-2017)



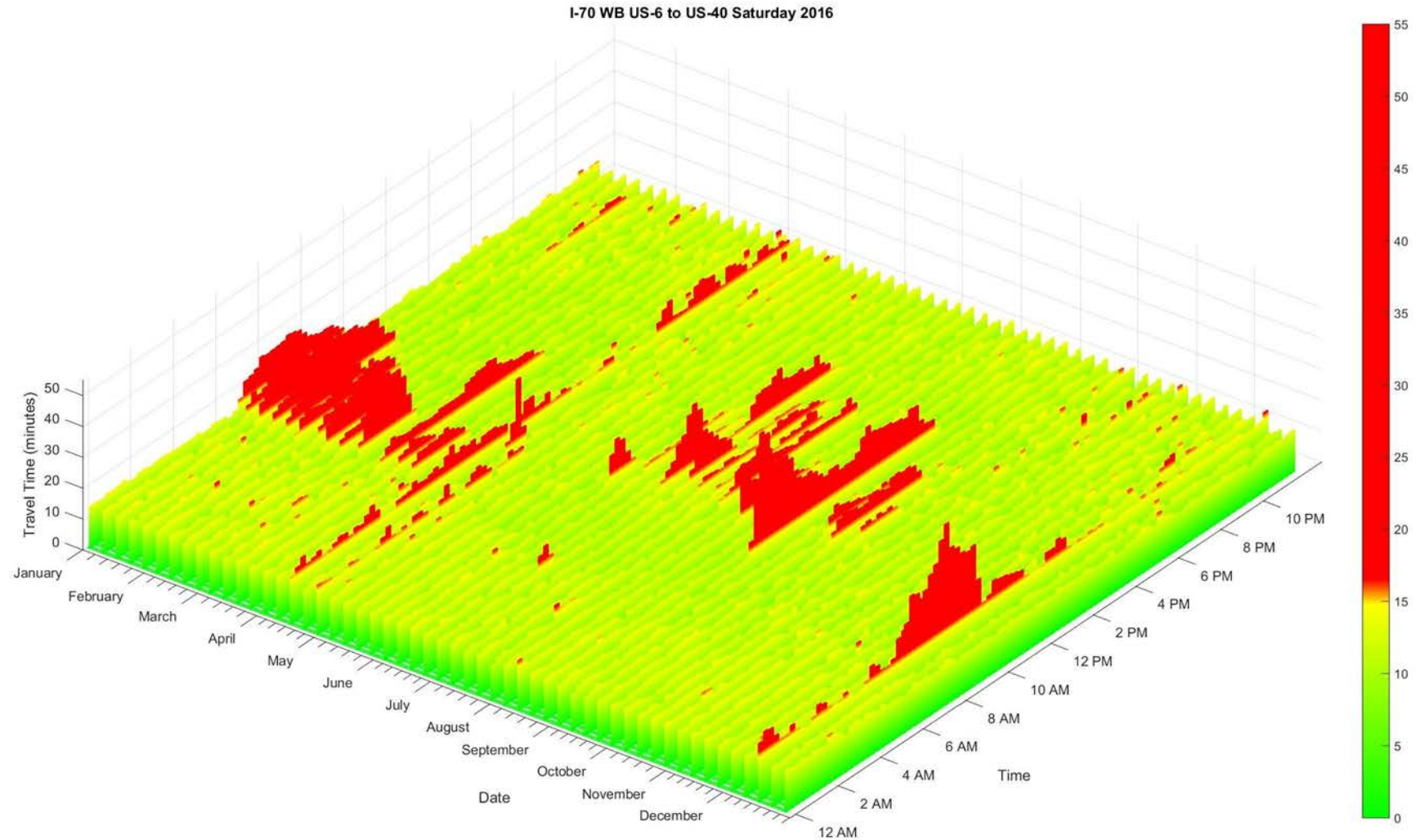
TYPICAL WB CONGESTION VOLUMES - FRIDAY

DISCUSS PROPOSED SOLUTIONS



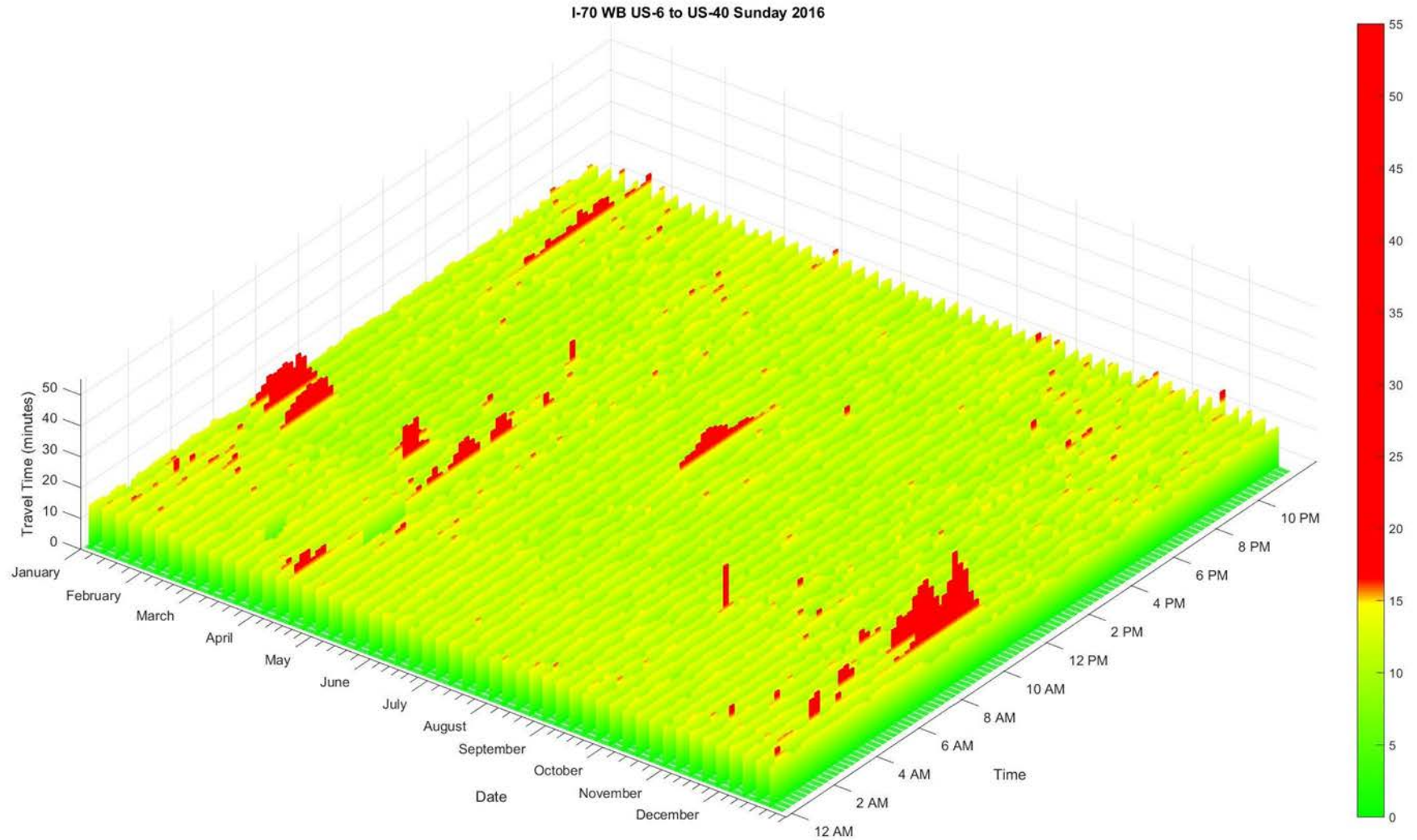
TYPICAL WB CONGESTION VOLUMES - SATURDAY

DISCUSS PROPOSED SOLUTIONS



TYPICAL WB CONGESTION VOLUMES - SUNDAY

DISCUSS PROPOSED SOLUTIONS



WB PPSL HOURS OF OPERATION - **DRAFT**

- Hours
 - Summer
 - Friday: 10 AM – 8 PM
 - Saturday, Sunday, Holidays: 7 AM – 2 PM
 - Winter
 - Friday: 12 PM – 8 PM
 - Saturday, Sunday, Holidays: 6 AM – 1 PM
 - Earlier/later if congestion warrants
- Seasons/days of operation
 - Winter: Thanksgiving-April
 - Friday, Saturday, Sunday, Holidays
 - Summer: Memorial Day – Labor Day
 - Friday, Saturday, Sunday, Holidays
 - Fall: September-October 31
 - As Needed (Friday)
- Annual Limits
 - 125 Days
 - 1,183 Hours

INDUCED/LATENT DEMAND

- Background Network
 - Floyd Hill
 - EJMT and Berthoud Pass
- Denver Metropolitan Area Population

1995	2015	2040
2,067,000	3,181,000	4,367,000

- Annual Growth Rate





NEXT STEPS

NEXT STEPS

- **SECTION 106 ITF – August 9, 2018**
- **PLT MEETING – August 29, 2018; 9 am – 11 am**
- **NEXT TT MEETING – September 12, 2018**
- **PUBLIC MEETING – September 13, 2018**
- **CSS LESSONS LEARNED – November/December, 2018**





PARKING LOT ISSUES

- Improved construction quality
- Better define CSS during construction
 - Improved communication
 - Improved traffic control
 - Improved safety
 - School District issues during construction
- Modeling projections vs actual impacts/public health issues (i.e., air quality, noise, vehicular trips)



CSS PROCESS

