



I-70 Bakerville to Eisenhower-Johnson Memorial Tunnels (EJMT) Westbound Climbing Lane SWEEP ITF Meeting #2

Meeting Summary

August 9, 2023, 10:30 AM - 12:00 PM

In Person and Virtual Meeting

1. Welcome and Agenda Review

Mandy Whorton (Peak Consulting Group) welcomed the group, and did a roll call of participants:

- Francesca Tordonato, Colorado Department of Transportation (CDOT)
- Ben Davis, CDOT
- Erik Schmude, CDOT
- Josh Giovannetti, CDOT
- Shannon Mero, CDOT
- Kristin Salamack, US Fish & Wildlife Service
- Stephanie Gibson, Federal Highway Administration
- Michelle Cowardin, Colorado Parks & Wildlife (CPW)
- Joe Walter, CPW
- Amy Saxton, Clear Creek County
- Fred Rollenhagen, Clear Creek County
- Lisa Leben, Clear Creek County
- Carrie DeJacommo, Ulteig
- Angy Casamento, Ulteig
- Lindsey Wickman, Ulteig
- Nicole Malandri, US Forest Service
- Ashley Giles, Trout Unlimited
- Gary Frey, Trout Unlimited
- Wendy Wallach, HDR
- Nate Jones, HDR
- Colin McKernan, HDR
- Amy Finseth, HDR
- Mandy Whorton, Peak Consulting Group
- Matt Kizlinski, Peak Consulting Group
- Vanessa Halladay, Peak Consulting Group
- Alexa Stout, Peak Consulting Group
- Loretta LaRiviere, Peak Consulting Group

The presentation from the meeting is attached to these notes for reference.

2. Project Status

Mandy welcomed everyone to the second meeting of the SWEEP Issue Task Force (ITF).



Overview of Design Status to Date

Carrie DeJacomio/Ulteig, said the design is currently at 10% and walked the group through the project area from east to west. The beginning of the taper for the climbing lane is just west of the Bakerville exit. All of the widening for the climbing lane will be to the north to preserve the existing grassed median.

At the existing chain station, the design increases capacity with two stall lanes separated by a through lane. The stall length will be increased and widened, which is an improvement over the existing station layout.

Just to the west of this chain station is the first proposed wildlife crossing. The wildlife crossings will be underpasses underneath I-70. Grading will be necessary on the north side to ensure there is a good approach to the crossing.

The chain station near Watrous Gulch will be improved similar to the first described chain station. Currently a significant amount of backup at both chain stations exists so we're hoping the additional capacity will help improve that.

The Herman Gulch bridges are in poor condition and will be replaced. The intersection will remain at the same location.

The next wildlife crossing is east of Dry Gulch. It is currently shown on the west side, but due to the potential landslide area we are investigating the east side.

The service road north of WB I-70 as we approach US 6 will remain. The US 6 interchange will be realigned to cross under I-70 at a 90-degree angle. There will be a deceleration lane that extends down to the off ramp. In addition, the design proposes three parallel chain station stalls separated from US 6 for hazardous materials vehicles going over Loveland Pass to chain up. The Colorado Motor Carriers Association is in favor of adding these for safety reasons and we will be presenting this to the Technical Team for their agreement.

Continuing west on I-70 there exists an historic avalanche/landslide area that we will be looking at closely to determine the best treatment to stabilize and avoid. The climbing lane will taper off and end just before the tunnel.

3. SWEEP Specific Issues

Fisheries and Aquatic Species

Greenback Cutthroat Trout

Herman Gulch and Dry Gulch are two of four locations in the state with genetically pure populations of greenback cutthroat trout. A detailed plan to retain fish movement barriers is needed to retain isolation from Clear Creek species. The US Forest Service and CPW have spent a lot of time and effort on keeping this species pure. Sedimentation and contamination prevention measures (BMPs) are needed for operations and during construction to protect the species.



Wetland and Riparian Areas

Matt Kizlinski/Peak Consulting said they have mapped all the wetlands and waters within the project area and based on the preliminary design of 10%, we've calculated the total potential impact at 3.73 acres. The temporary/permanent impacts as well as any efforts to avoid and minimize impacts will be defined as the design progresses. There are a significant number of ditch wetlands along the north shoulder and any widening will impact those wetlands. There are opportunities to protect and enhance wetland and riparian areas. There are some wetlands that are not directly connected to a culvert and the impacts will be calculated, CDOT will be going through the US Army Corps of Engineers' jurisdictional determination process to understand compensatory mitigation per Section 404 of the Clean Water Act.

Francesca Tordonato/CDOT said we are waiting to do any additional functional assessments until we have a better understanding of the project timeline.

Water Quality

Amy Finseth/HDR discussed the additional impervious area and what the anticipated water quality capture volume is. Preliminary locations for water quality capture have been identified and where possible control measures can be added. The majority of these locations are closer to the tunnel where more room exists. As Matt said, there are a lot of ditches that are impacted which reduces the conveyances from the road.

HDR has also reviewed the Clear Creek Sediment Control Action Plan (SCAP) that was developed in 2013 which focused on sand treatment and sediment control. We compared areas identified in the SCAP that could be used for sediment basins or inlet traps.

The preferred mitigation treatment is extended detention basins with hard bottoms for ease of maintenance. We are also proposing grass swales in the culvert crossing areas to settle out the sediment. Permanent water quality treatment is typically required in urban areas but there are some impact triggers in the I-70 Environmental Impact Statement (EIS) that the design will be focused on.

Josh Giovannetti/CDOT said the pollutant of concern is from deicing (chlorides). We want to work on identifying snow storage areas and maintaining treatment in those areas. As we continue the discussions on this on the Floyd Hill project, there may be additional information to include in the design of this project.

Floodplains

Colin McKernan/HDR said the limits of the project appear to encroach on the FEMA floodplain Zone A in two locations at milepost 220.1 and milepost 221.2 to milepost 221.5, however the mapping is outdated. The climbing lanes are westbound so we are not expecting much of an impact, but the floodplain does cross over I-70 in some locations and may impact the locations of the wildlife crossings. To prove that Zone A is inaccurate we will have to complete an analysis to more accurately understand where the floodplain is relative to Clear Creek and if the project is impacting it. A Clear Creek County Floodplain Development Permit is needed and would include this analysis.



Deicers

Mandy said we have talked about trends in the Mountain Corridor and the transition away from sand treatments. Stream health has improved from the reduction in sedimentation. The review of the SCAP recommendations does not target the current winter deicer maintenance activities. Deicing concerns have been raised on this project and on the Floyd Hill project.

Winter Maintenance and Application Rates

Josh said we applied the most deicer in 2019, which was due to an above average snowfall year. There are four water quality monitoring stations along the Clear Creek Corridor that are fully functioning, and one is at Herman Gulch within our project area. We have monitoring information for last year that will be summarized and used as baseline data for future years.

There are no treatment options for deicing at this time; it is a matter of managing the application and controlling how it is released to the environment. We have done extensive project research and at this elevation, there are no alternative products that will maintain safety. We are looking at a lot of different ideas to improve our maintenance operations program.

Comments and Questions

Ashley Giles/Colorado Trout Unlimited said Trout Unlimited is a partner with the US Forest Service on the greenback cutthroat trout program and spent a lot of time and money to ensure the program was successful at the two sites in the middle of our project. We appreciate there will be no impacts to these sites during construction and that maintenance is managing the snow loads and avoiding the fens. There are some sediment capture ponds, but we have a big concern with the water quality being impacted in perpetuity. We agree there is no known best management practice and we want to know why there isn't. This has been an issue for lots of states and if we start this at Floyd Hill, there is an opportunity to determine a solution that is more than just maintenance and application.

Ashley said we discussed this topic at the last Floyd Hill Technical Team meeting. It may be beneficial to for a technical committee that can look at some of these options on a national level and come up with something before we start the Bakerville project.

Amy Saxton/Clear Creek County said the Bakerville project is a unique design opportunity because is at the highest elevation. We need to make sure we take the information from the Floyd Hill project and other national research findings and include it in this project.

Amy said the snow storage piles at Bakerville is a big problem.

Mandy said the Bakerville and Floyd Hill projects have a lot of similarities, but Bakerville is on US Forest Service land. We think bringing together both project's SWEEP ITFs together to share water quality and deicing maintenance best practices may be a good start.



We wanted to gauge this group's interest in participating. The group felt this would be a good idea.

Ben Davis/CDOT said we should also look at other CDOT Regions' projects like West Vail Pass to include what they have done for deicing mitigation and water quality.

Francesa said CDOT selected Colorado State University to lead a research project to look at the impact of deicing on high elevation wetlands, which is being funded through the CDOT Research Branch. It will be a statewide study and will compare regional differences of deicing impacts and how different types of bedrock affect the absorption. We have proposed Region One locations along the I-70 Mountain Corridor near Loveland Ski Area, wetlands in the Bakerville area, and wetlands at the top of Floyd Hill to be included in the study. There is an extremely long procurement and contracting process so the project will not start until 2024.

The project will look at other state DOTs' research literature to see if there is anything they have used successfully that could be implemented here.

Ashley asked if you have any information on the impact of salinity on vegetation.

Mandy said this is an area of concern at Floyd Hill and it should definitely be added as an area of concern for this project. A study on Floyd Hill concluded the salinity in the soil is more substantial than the chloride in the water. One of the treatment measures that will be used is diluting off site runoff over a large area before it gets to Clear Creek.

Josh said we have talked to other states on how they are handling it and found that controlling the timing of the applications so there are not huge pulses of discharges is a good mitigation measure.

Josh also noted that CDOT Staff Bridge is looking at high salinity soil and if it is suitable for bridge abutments. Additional follow-up will be required to potentially include in bridge designs. There may be a need to mitigate those areas by removing some of the salinity concentration.

Ashley said there are a lot of different organizations doing research on this subject, but there is no centralized repository for it. We need a data collection hub to gather all the reports and studies we find so that everyone can have access to it.

Ben said this is a great idea and he will talk with Josh to see if there is anything CDOT can do to get this started.

Mandy said it would be good if we ask everyone who will be part of the combined ITF to bring the reports and studies, they have so we can share them with the group.

Ashley said we voiced concern about sodium chloride on this project. Our request is to have SWEEP meetings a little more frequently so we can keep the conversation going and relevant.



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Region 1

Region 1 West Program
425 A Corporate Circle
Golden, CO 80401

4. Next Steps

NEPA Evaluation

Mandy said the NEPA evaluation is moving forward, but with not a lot of urgency because there is no construction funding identified.



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Westbound Bakerville to EJMT Climbing Lane SWEEP Issue Task Force #2 August 9, 2023



- Introductions
- Project Status
- SWEEP Specific Issues
- Next steps



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Introductions



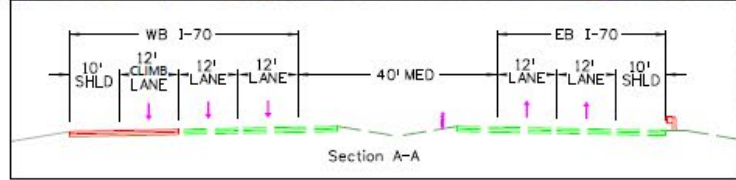
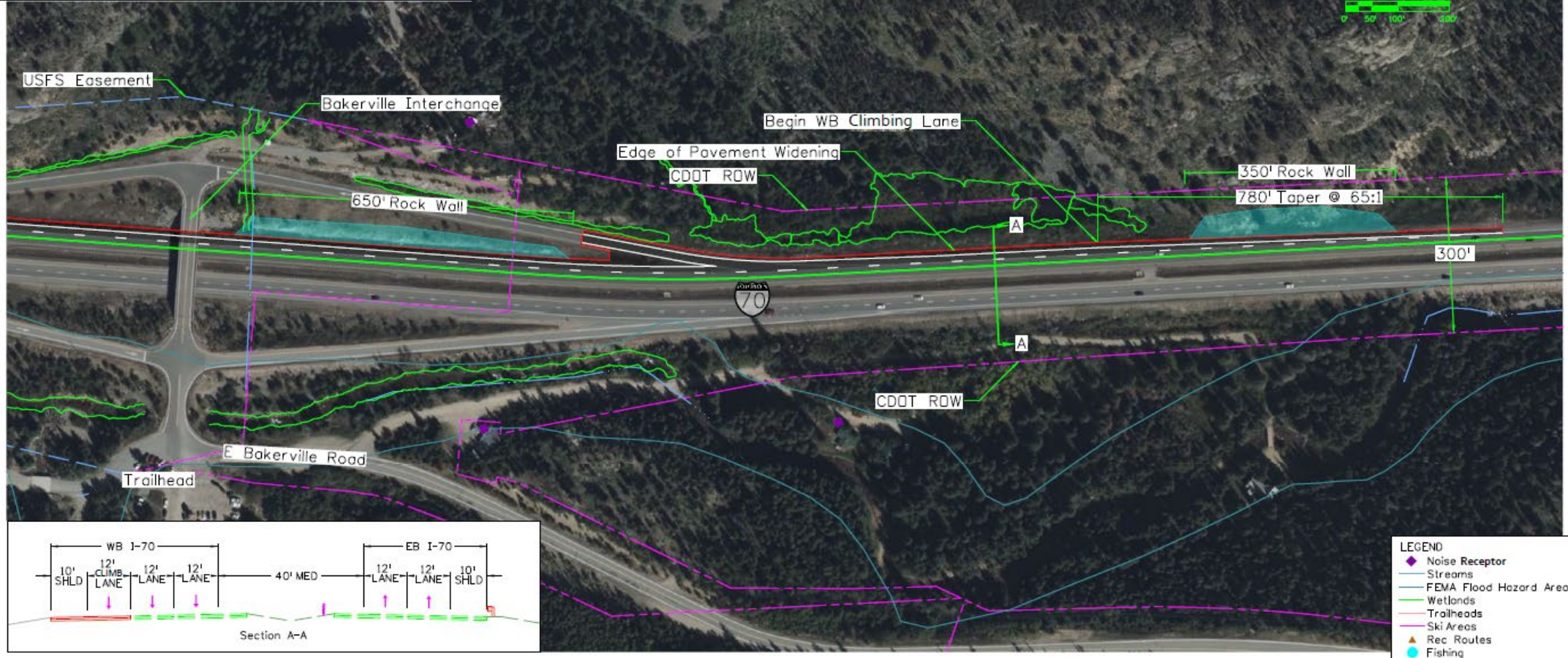
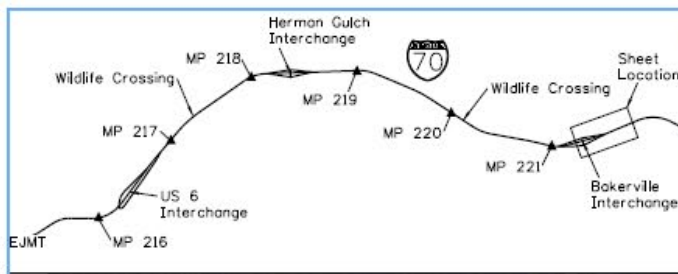


- Overview of Design to Date
- Environmental Process
- Schedule





CLIMBING LANE BEGINNING – 3A EAST OF THE BAKERVILLE EXIT



LEGEND

- ◆ Noise Receptor
- Streams
- FEMA Flood Hazard Areas
- Wetlands
- Trailheads
- Ski Areas
- ▲ Rec Routes
- Fishing

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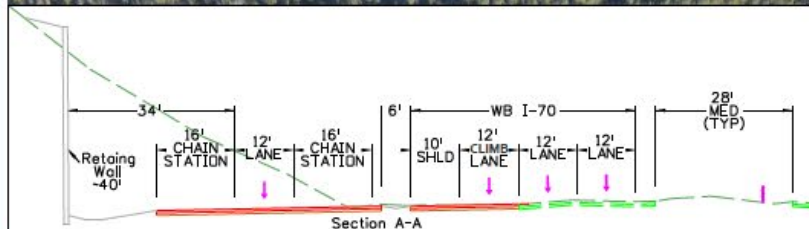
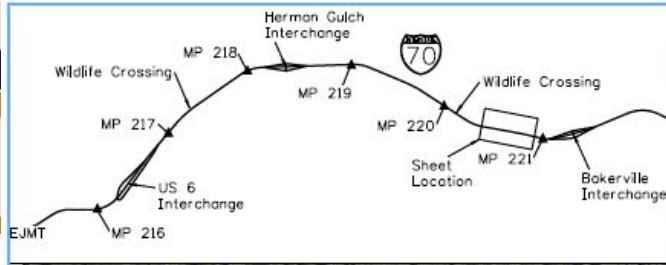
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- PROS**
- Begins climbing lane at an approximate 2% grade
 - Maximizes length of climbing lane within project limits

- CONS**
- Requires cuts into the rock outcropping northwest of the interchange (off the page)
 - Potential rock cuts to the east of the interchange
 - Possible additional bridge work required



CHAIN STATION OPTION – 3D INCREASED CAPACITY AT EXISTING LOCATION (WEST OF BAKERVILLE)



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PROS

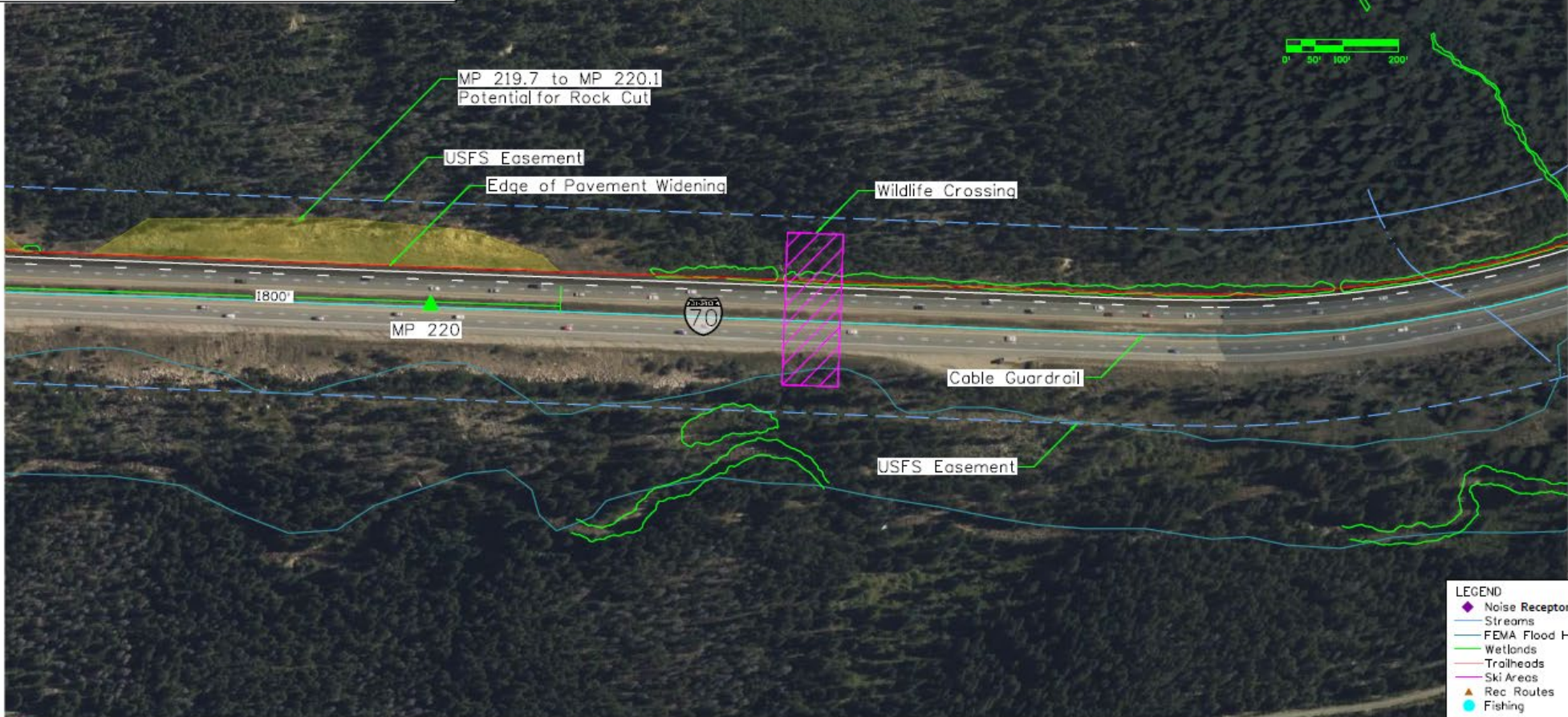
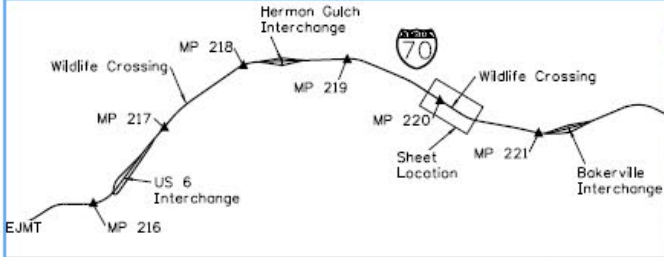
- Increased capacity compared to existing with two parking lanes and through lane. (Existing chain station – 25 stalls (80'), proposed chain station – 46 stalls (100'))
- Improved traffic operations with designated entry/exit points to access chain station.
- Designed with separation between the WB travel lane and the chain station stalls (approximately 18').
- Preserves grassed median.

CONS

- Requires the relocation of utilities (fiber optic and electrical) and lighting.
- Requires significant rock cuts with an approximate 40' high retaining wall.
- Impacts to ditch wetlands.



CLIMBING LANE WIDENING OVERVIEW



LEGEND

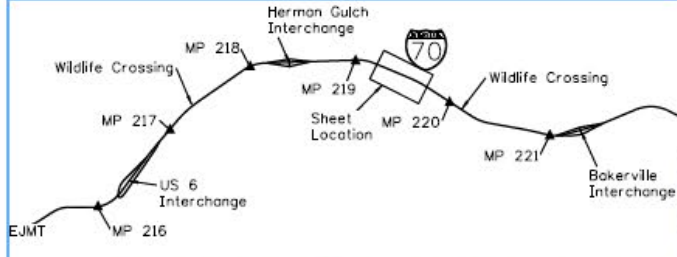
- ◆ Noise Receptor
- Streams
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- Wetlands
- Trailheads
- Ski Areas
- ▲ Rec Routes
- Fishing

OVERVIEW

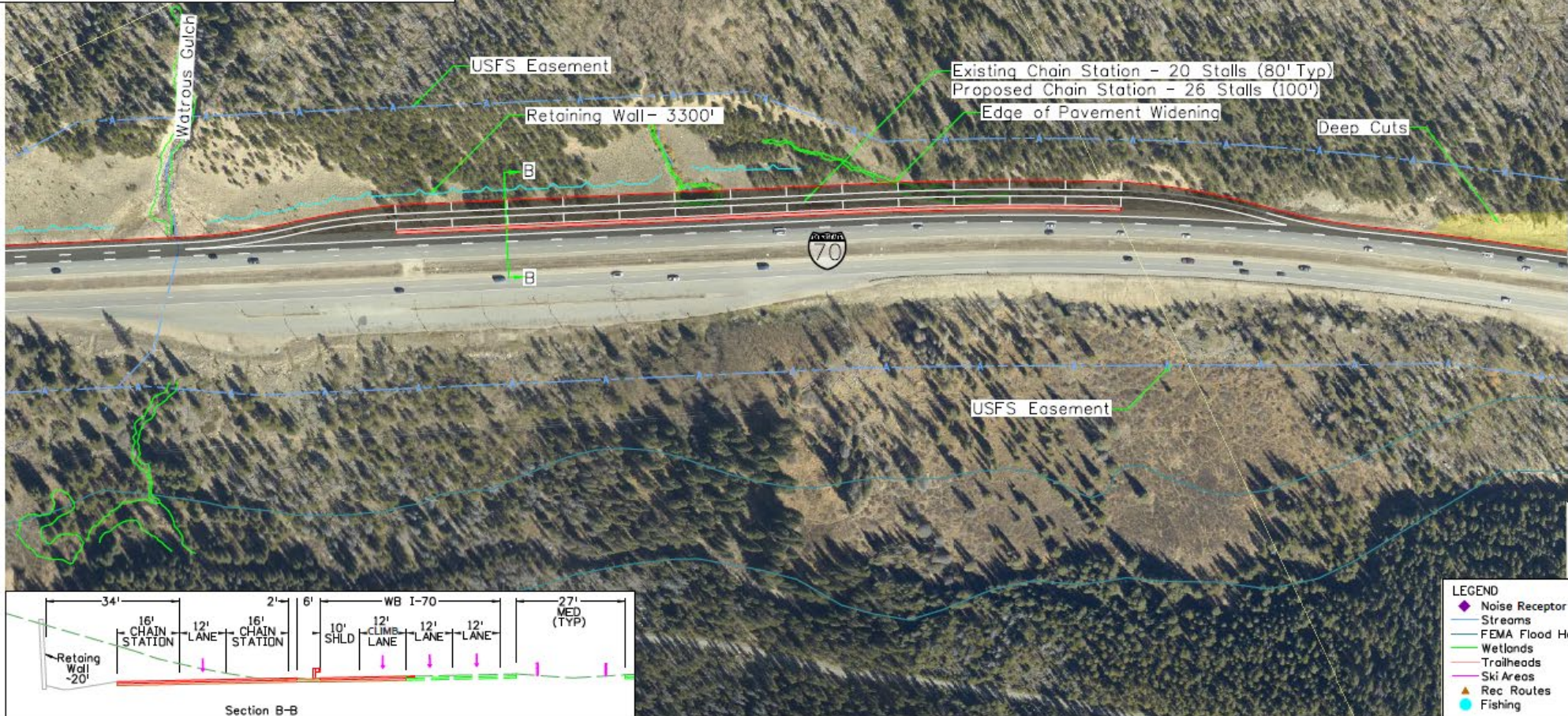
- MP 219.7 to MP 220.1, MP 221 to MP 221.2, MP 221.3 to MP 221.4, MP 221.6 to MP 221.7 potential for rock cut.
- Wildlife Crossing



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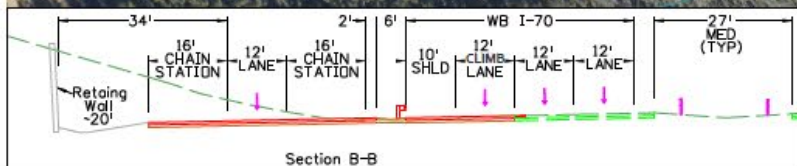


CHAIN STATION OPTION – 5D INCREASED CAPACITY AT EXISTING LOCATION (NEAR WATROUS GULCH)



LEGEND

- ◆ Noise Receptor
- Streams
- FEMA Flood Hazard Areas
- Wetlands
- Trailheads
- Ski Areas
- ▲ Rec Routes
- Fishing



PROS

- Increased capacity compared to existing with two parking lanes and though lane. (Existing chain station – 20 stalls (80'), proposed chain station – 26 stalls (100'))
- Improved traffic operations with designated entry/exit points to access chain station.
- Designed with separation between the WB travel lane and the chain station stalls (approximately 18').
- Preserves grassed median.

CONS

- Requires the relocation of utilities (fiber optic and electrical) and lighting.
- Requires significant rock cuts with an approximate 20' high retaining wall.
- Impacts to ditch wetlands.



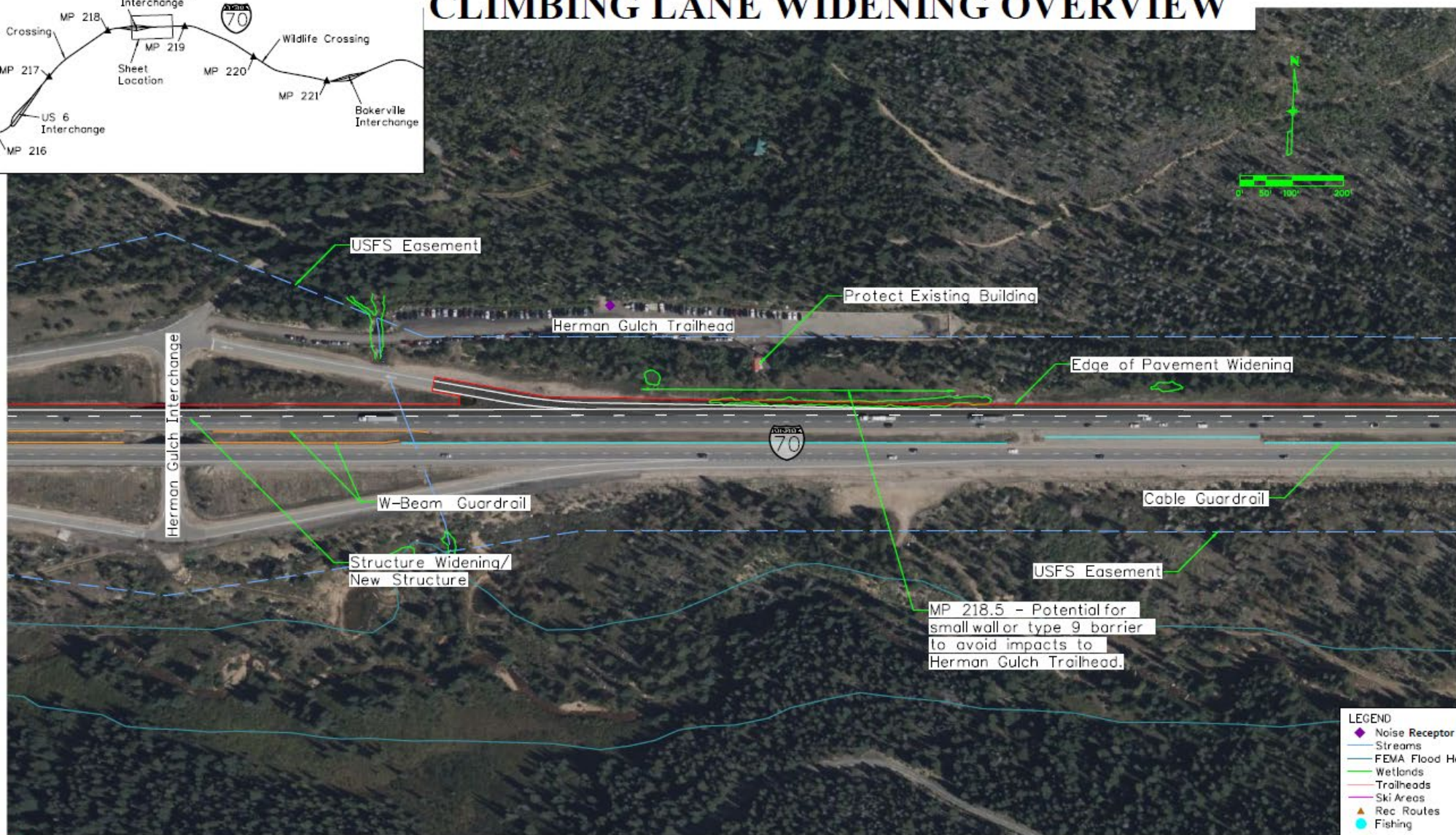
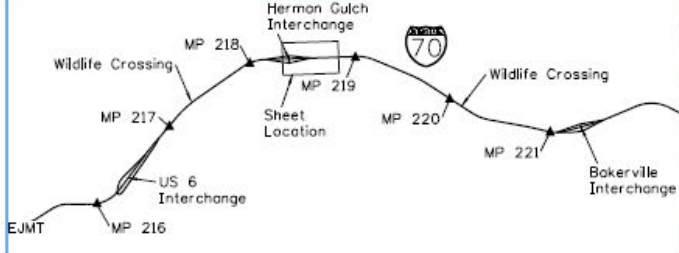
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CLIMBING LANE WIDENING OVERVIEW



OVERVIEW

- MP 218.5 Potential for small fill wall or Type 9 Barrier to avoid impacts to Herman Gulch Trailhead.



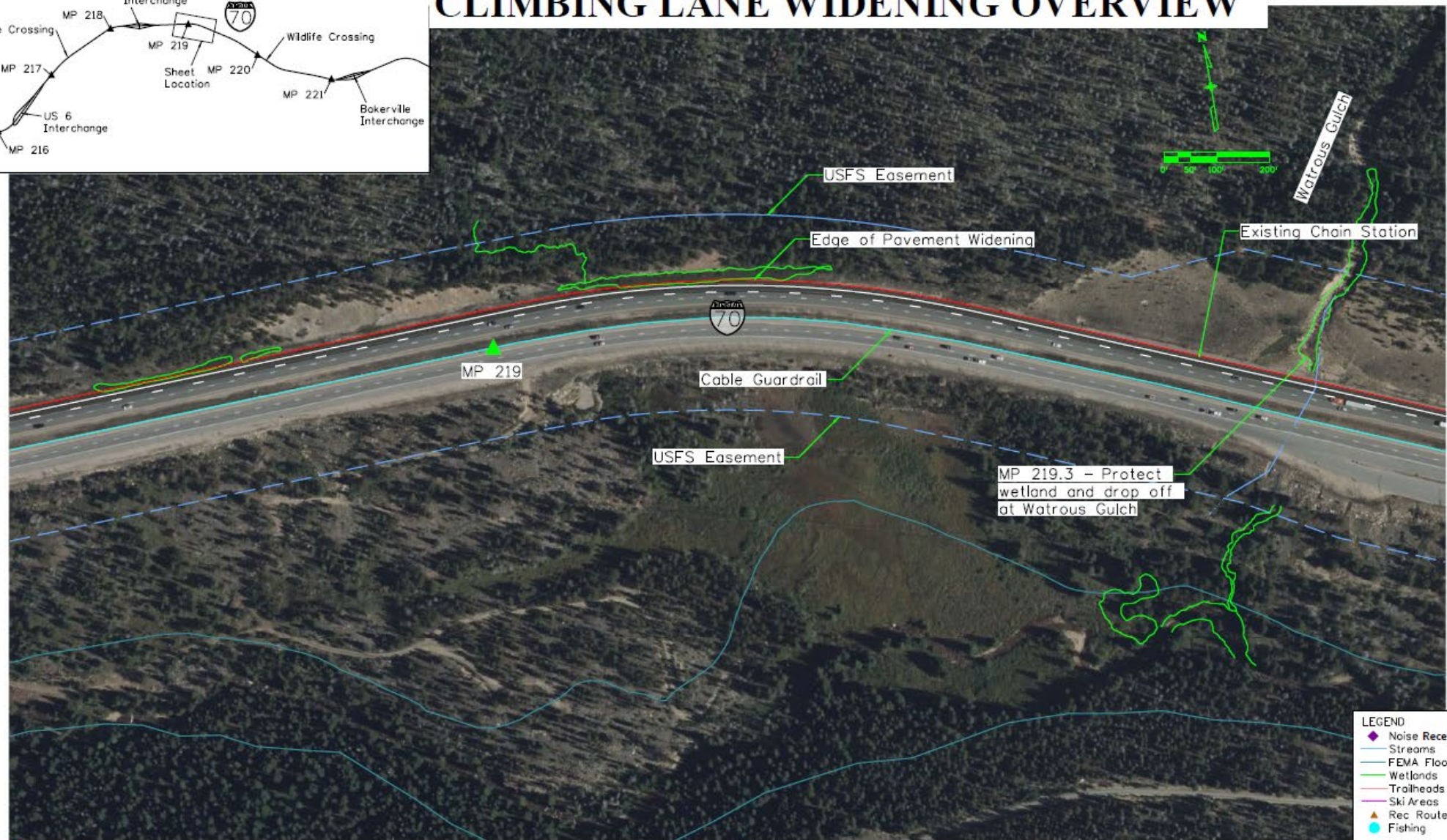
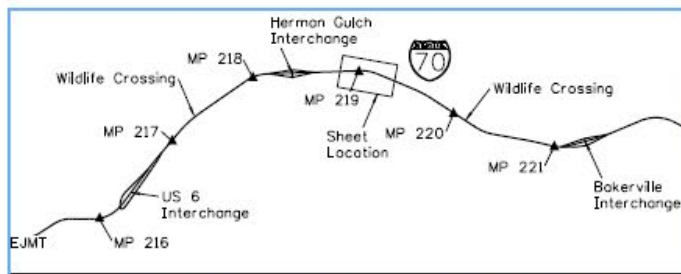
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CLIMBING LANE WIDENING OVERVIEW



LEGEND

- ◆ Noise Receptor
- Streams
- FEMA Flood Hazard Areas
- Wetlands
- Trailheads
- Ski Areas
- ▲ Rec Routes
- Fishing

OVERVIEW

- MP 219.3 Protect wetland and drop off at Watrous Gulch

Ulteig

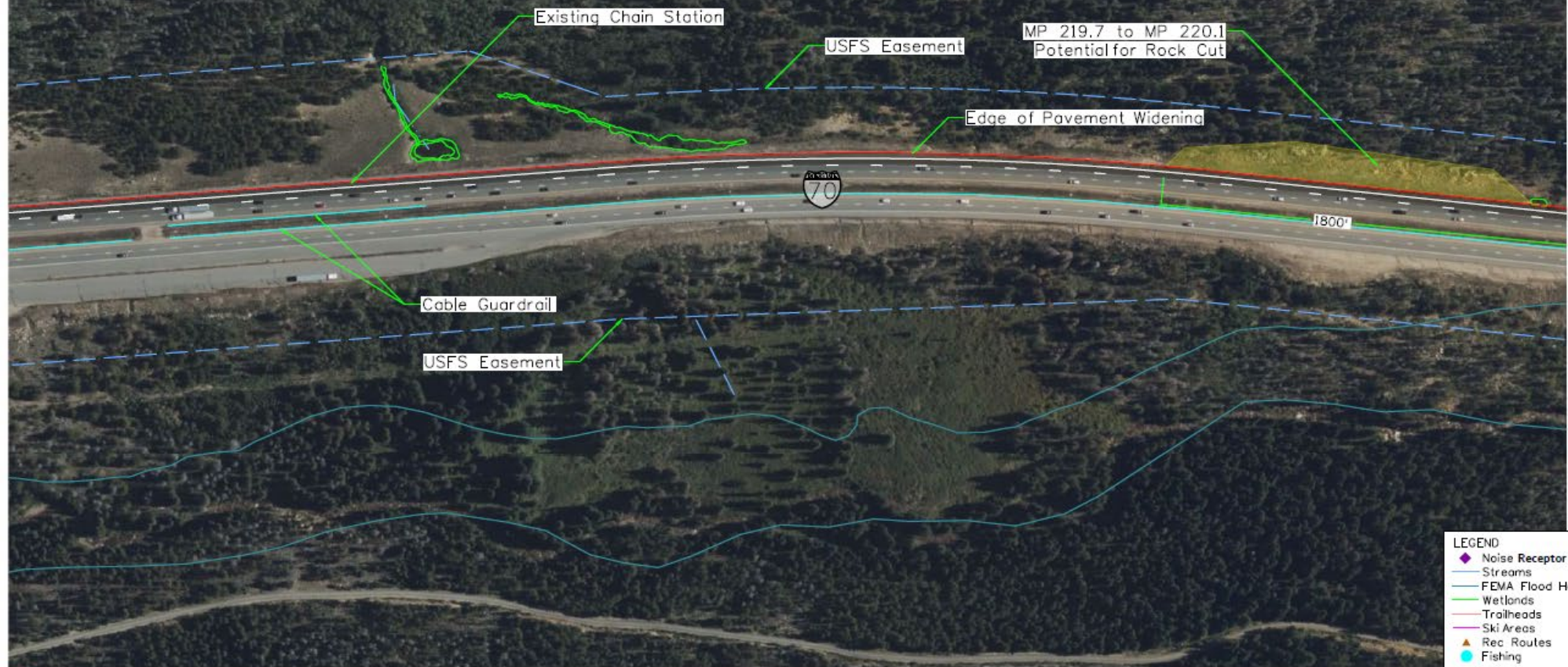
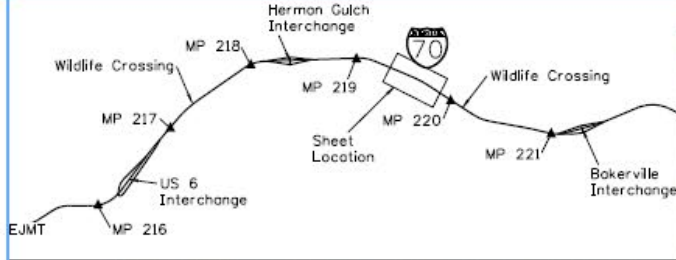
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CLIMBING LANE WIDENING OVERVIEW



LEGEND

- ◆ Noise Receptor
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OVERVIEW

- MP 219.7 to MP 220.1, MP 221 to MP 221.2, MP 221.3 to MP 221.4, MP 221.6 to MP 221.7 potential for rock cut.
- Wildlife Crossing



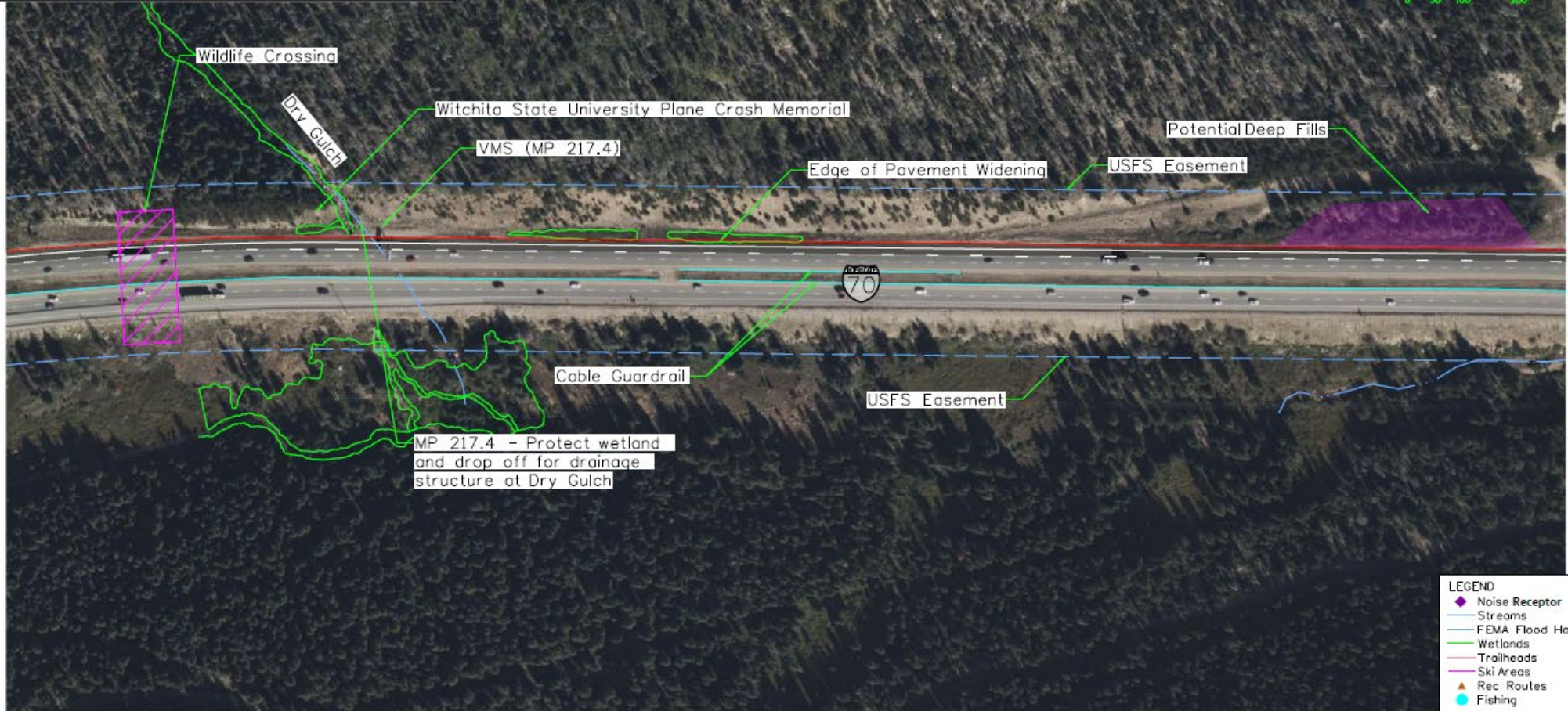
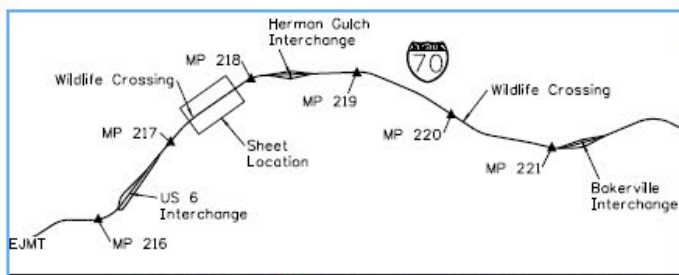
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CLIMBING LANE WIDENING OVERVIEW



- LEGEND**
- ◆ Noise Receptor
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OVERVIEW

- MP 217.4 Protect wetland and drop off for drainage structure at Dry Gulch.



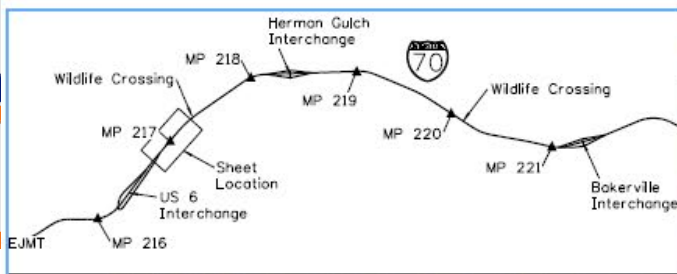
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CLIMBING LANE WIDENING OVERVIEW



LEGEND

- ◆ Noise Receptor
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OVERVIEW

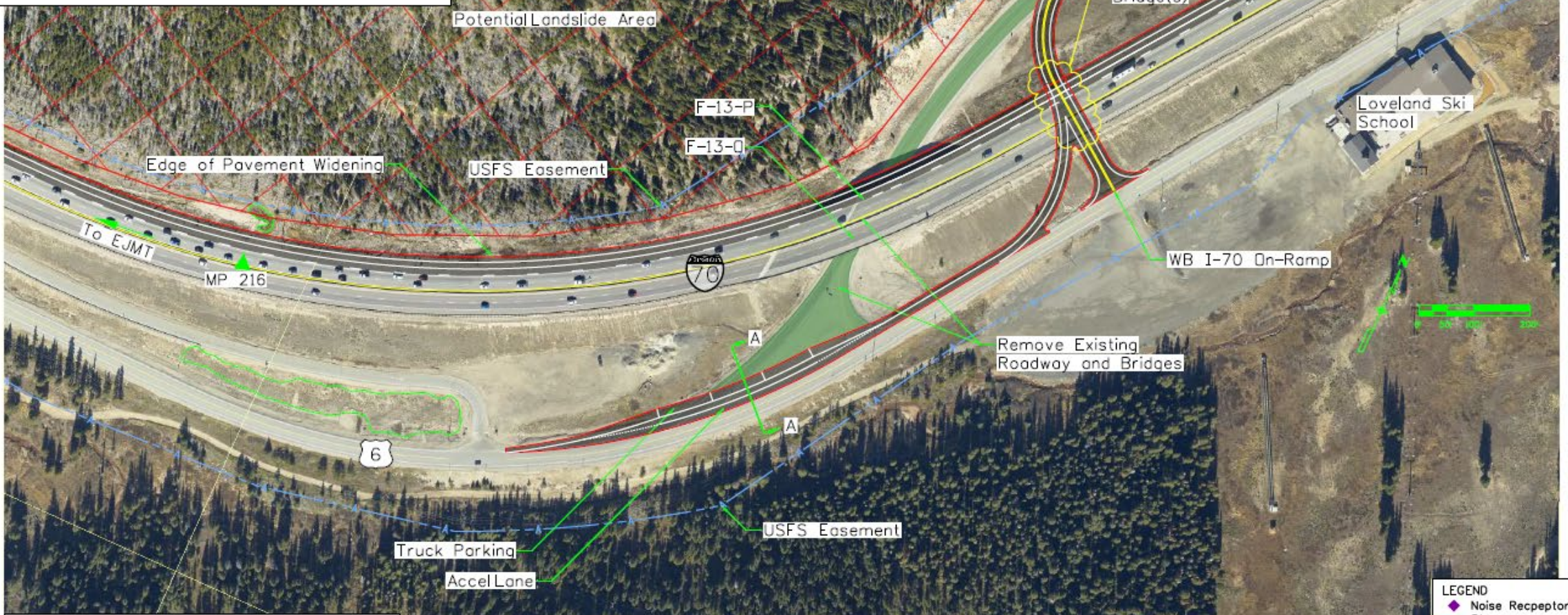
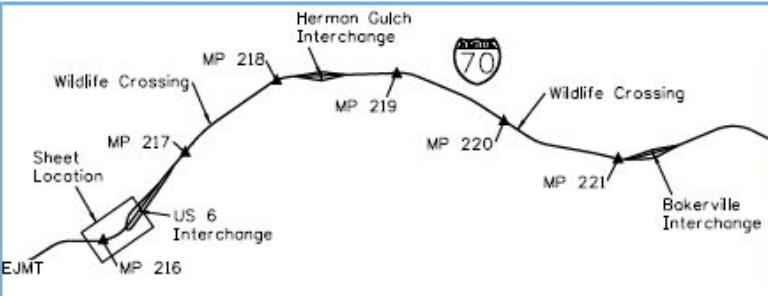
- To avoid impact to frontage road FS 193.1, design will look to widening to the median between MP216.70 to MP 217.00.
- Potentially widen to the median to avoid impacting the frontage road from US 6 interchange to MP 217



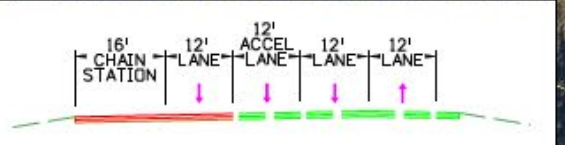
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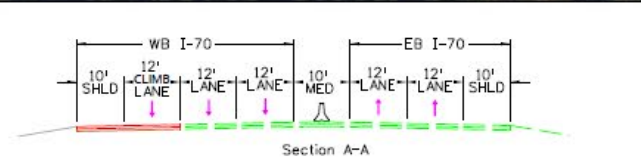
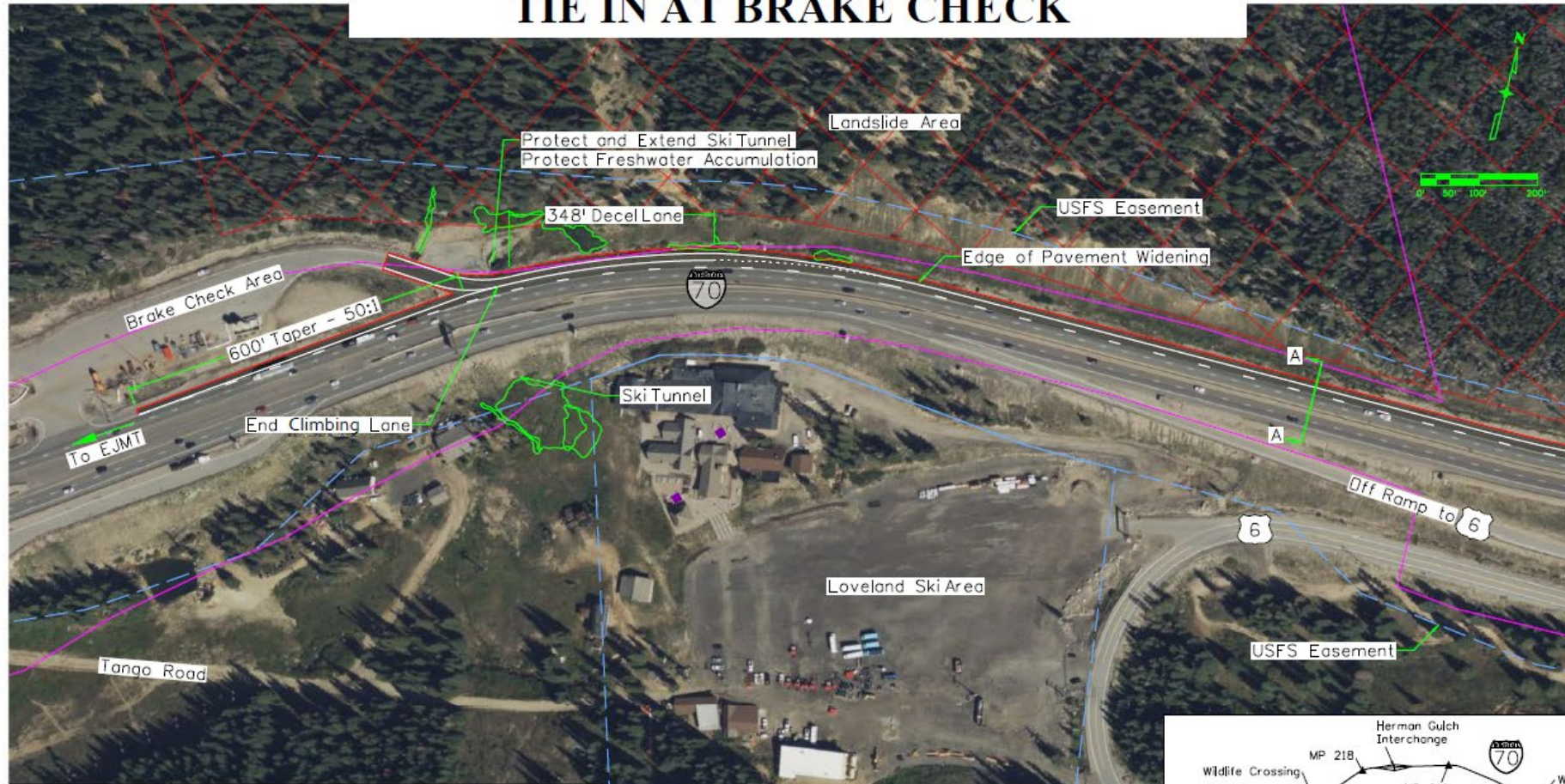


- LEGEND**
- ◆ Noise Receptor
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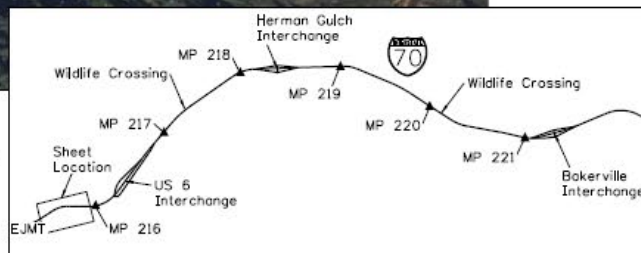


CLIMBING LANE END LOCATION – 1B TIE IN AT BRAKE CHECK



LEGEND

- ◆ Noise Receptor
- Streams
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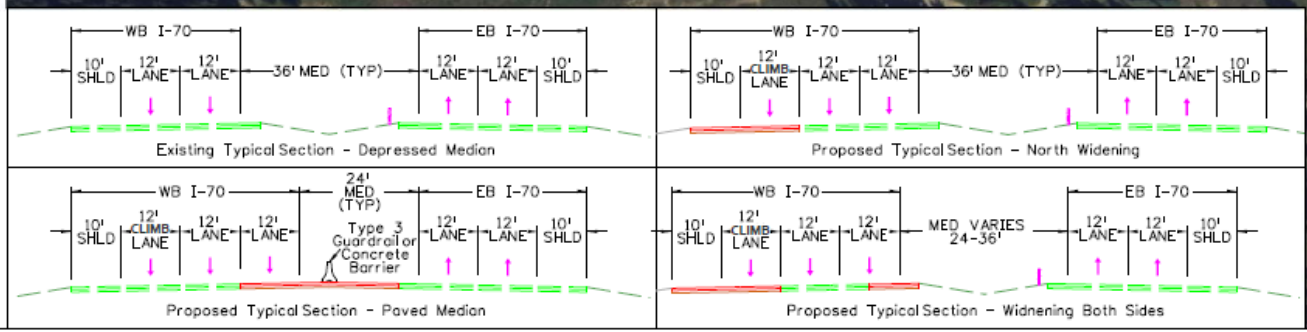
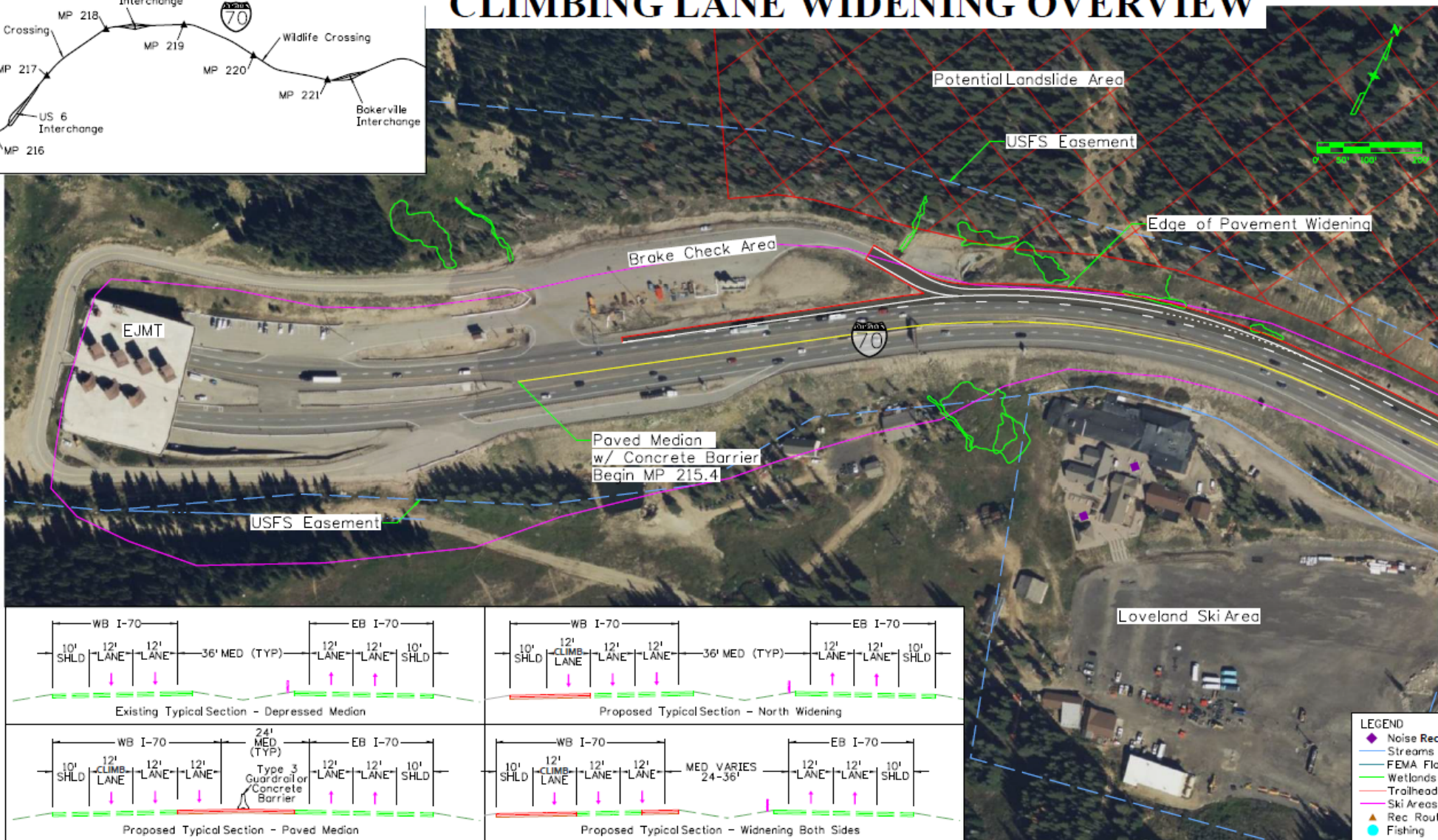
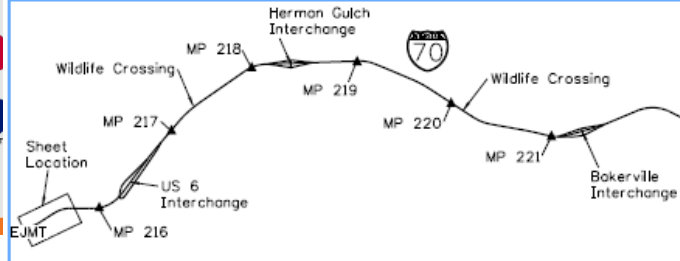


- PROS**
- Full deceleration lane for brake check pull-off (currently not to standard)
 - Extends the climbing lane (full width lane) approximately 1500ft from EJMT entrance. Extends the extra lane as far up the steep grade climb as possible.
 - Trucks won't need to merge onto I-70 before exiting the brake check
 - Transition back onto I-70 after brake check remains the same
 - Similar transition from 3 to 2 lanes as the west side EB approach to EJMT

- CONS**
- I-70 grade is still approximately 4-6% after lane is dropped (5.6%)
 - Potential widening impacts to the ski tunnel and landslide area
 - End climbing lane in a curve
 - Potential impacts to freshwater accumulation (east of tunnel). Protection would be needed.



CLIMBING LANE WIDENING OVERVIEW



LEGEND

- Noise Receptor
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OVERVIEW

- Potential large scale landslide area to the north from MP 215.5 to 216.4
- Paved median from MP 215.4 to 216.70, unable to widening to median.



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- Fisheries and Aquatic Species
- Wetlands and Riparian Area Issues
- Water Quality Issues
- Deicers
 - Winter Maintenance
 - Treatment Options



Protect Clear Creek as a fishery resource and its water quality in addition to tributaries

- Culverts and greenback cutthroat trout





Impacts to Wetlands and Waters of US

- Early design - temporary and permanent impact areas being refined
- Opportunities to avoid and minimize remain
- Opportunities to protect/enhance wetland and riparian areas
- Sackett decision and jurisdictional status of roadside wetlands - USACE determination

Water Type	Total Impact	Connected	Isolated
OW	1.12	1.11	0.01
PEM	1.67	1.43	0.24
PSS	0.95	0.81	0.14
	3.73	3.34	0.39



- Previous Studies
- Impacts
- Regulatory requirements
- Mitigation





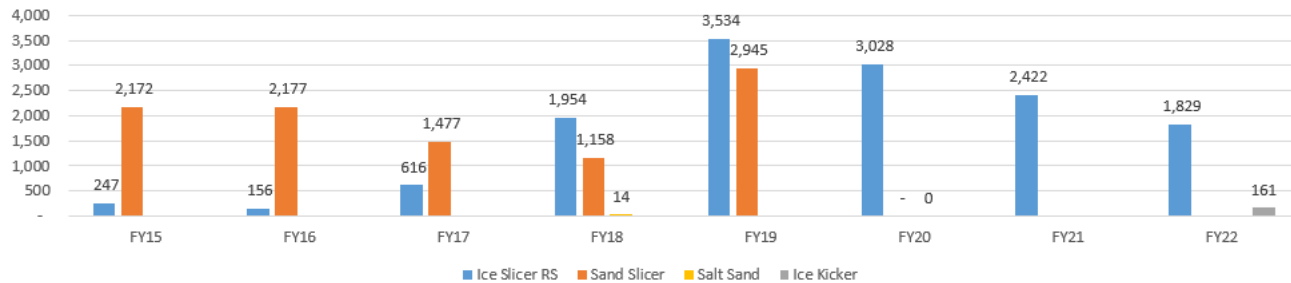
- The limits of the project appear to encroach on the FEMA floodplain in two locations—MP 220.1 and MP 221.2 to 221.5
- There likely is no actual impact to the Clear Creek SFHA in this area and the apparent intersection is a function of the outdated mapping of the floodplain. Supporting information to prove the actual risk of flooding will be necessary as part of the Clear Creek County floodplain development permit.



- Winter Maintenance: Materials and Application Rates
- Treatment Options

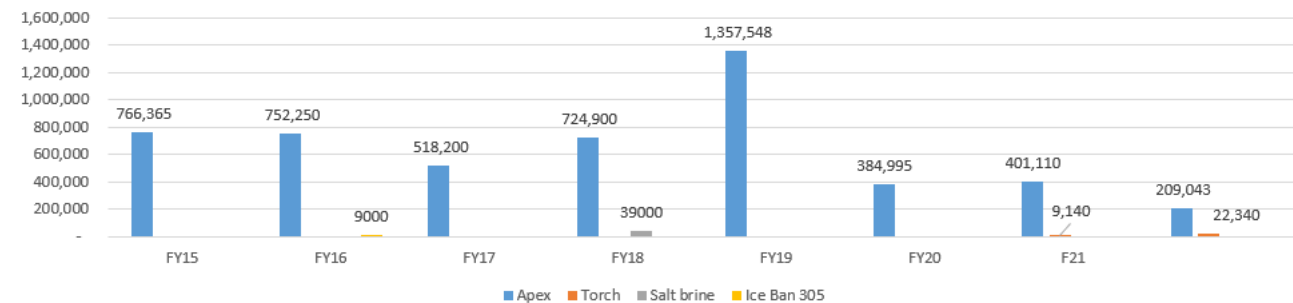
Patrol 41 - Granular Usage

8 years of Material Use for Patrol 41 Winter Materials
Granular TONS



Patrol 41: Liquid Usage

8 years of Material Use for Patrol 41 Winter Materials
Liquid Gallons





- NEPA Evaluation
- Design