



I-70 Bakerville to Eisenhower-Johnson Memorial Tunnels (EJMT) Westbound Auxiliary Lane Stream and Wetland Ecological Enhancement Program (SWEEP) Issue Task Force (ITF) Meeting #1

Meeting Summary

November 10, 2022, 3:00 PM - 4:30 PM

In Person and Virtual Meeting

- Francesca Tordonato, Colorado Department of Transportation (CDOT)
- Maria Rocken, CDOT
- Josh Giovannetti, CDOT
- Erik Schmude, CDOT
- Shannon Mero, CDOT
- Kristin Salamack, United States Fish and Wildlife Service (USFWS)
- Joe Walter, Colorado Parks and Wildlife (CPW)
- Carrie DeJacommo, Ulteig
- Angy Casamento, Uletig
- Lindsey Wickman, Ulteig
- Stephanie Gibson, Federal Highway Administration (FHWA)
- Brian Dabling, FHWA
- Nolan Hahn, United States Environmental Protection Agency (EPA)
- Amy Birtwistle, United States Forest Service (USFS)
- Amy Saxton, Clear Creek County
- Gary Hague, Clear Creek County
- Lisa Leben, Upper Clear Creek Watershed Association (UCCWA)
- Ashley Giles, Colorado Trout Unlimited
- JoAnn Sorensen
- Sandy Beazley, HDR
- Amy Finseth, HDR
- Mandy Whorton, Peak Consulting Group
- Matt Kizlinski, Peak Consulting Group
- Loretta LaRiviere, Peak Consulting Group

1. Welcome, Introductions and Meeting Purpose

Sandy Beazley (HDR) had the attendees introduce themselves and then reviewed the agenda. The presentation from the meeting is attached to these notes for reference.

Sandy said the meeting purpose is to:

- Provide a project overview with purpose and need information
- Provide an overview of the SWEEP Memorandum of Understanding (MOU) and ITF roles and responsibilities



- Provide a recap of previous studies done on the I-70 Mountain Corridor
- Provide SWEEP-specific issues the Project Staff are aware of in the area & discuss anything that may have been overlooked
- Receive input from SWEEP ITF on the evaluation criteria and potential mitigations to consider as the Project Staff begin to develop and evaluate alternatives to come up with some solutions that will enhance the wetland and aquatic environment in the project area.

2. Project Overview/Purpose and Need

Mandy Whorton (Peak Consulting) said this project is one of the specific highway improvements on the I-70 Mountain Corridor that stemmed from the Programmatic Environmental Impact Statement (PEIS). The Tier 1 purpose and need focused on three elements that were very common to auxiliary lane projects throughout the Corridor. There were about a half dozen of them that were recommended along the 144-mile Corridor, and they were to improve safety and mobility and decrease congestion. They were generally in areas like this project's location where there were steep grades and conflicts between slow moving vehicles and other interstate traffic.

As Tier 2 purpose and need is being refined, CDOT is refreshing some of the safety and crash data. CDOT is seeing a lot of the same things that they saw before but looking closer at the specific project area. Some of the things that will be evaluated from the safety and crash data are overall crash reductions, the types of crashes that occur in the corridor and how those might be mitigated and focusing on operation-focused mobility issues through the six-mile stretch. CDOT is not talking about major capacity improvements through the entire I-70 Mountain corridor, and sometimes improving mobility and decreasing congestion suggests a broader fix than what's needed.

CDOT is looking at specific operational issues associated with this six mile-stretch. There are the speed differentials between trucks and vehicles, and this is particularly true in the project area because of Loveland Pass and the need for having hazardous materials vehicles to be able to detour around the EJMT. Some of the issues with chain stations through that area include stopping and starting on steep grades. The travel times are in general unreliable. Freight operations are a big consideration through the project area. There are also a high number of incident closures related to things that CDOT can't necessarily solve or control, such as winter weather events. There are already a lot of issues in this project area, but then having vehicles parking on the side of the road or with the chain stations leads to additional crashes that also contribute to interstate closures as there are vehicles that can't move through the area.

The project elements that CDOT is looking at are the auxiliary lane itself, but also the Loveland interchange, and particularly at the ramps because they are short. With short merge lengths, there are also issues with parking along the ramps, which is something that is relatively unique to this project area and will be analyzed.



The project area is located with an identified Linkage Interference Zone (LIZ); these are locations along the I-70 Mountain Corridor that were identified as challenges for wildlife passage, so wildlife crossings will also be evaluated with this project. CDOT had a meeting earlier this week that some of you attended where we looked at some of the proposed mitigation for those wildlife crossings and there is consideration of two underpasses in the area.

Putting all elements together within the project area, there are a lot of constraints. There are not really a lot of residences in the area, but there are a lot of environmental resources, many which are sensitive. The drainages are all connected to Clear Creek. There are high-quality fen wetlands located along Clear Creek on the south side of the road, and various wildlife habitat types throughout the project area. There's also a lot of recreational use in the project area. If there is an important environmental resource, it is likely present.

Sandy said the project is in a narrow valley and there are several named and unnamed gulches that drain into the project area with perennial and ephemeral streams that flow down into Clear Creek. The entirety of this segment of Clear Creek is on the south side of I-70, so from where the project starts to where it ends, there are one or more surface waters that are present.

3. SWEEP Overview

Sandy noted SWEEP stands for the Stream and Wetland Ecological Enhancement Program. The SWEEP MOU was developed to assist with compliance, streamline interagency coordination and leverage projects like this and other projects along the Mountain Corridor. The intent is to do no harm and identify opportunities to enhance the aquatic resource conditions and also improve wetland and stream conditions.

The idea behind the SWEEP MOU was to create a framework for decision making and cooperation amongst stakeholders throughout the corridor. The signatories are FHWA, CDOT, USFS, Trout Unlimited, Clear Creek Watershed Foundation (defunct), UCCWA, CPW, Clear Creek County, Bureau of Land Management (BLM), and USFWS.

The idea with all these stakeholders coming together was a recognition that I-70 and the operation and maintenance of I-70 was having a detrimental impact to aquatic resources throughout the Corridor. Whether it is specifically Clear Creek, or Black Gore Creek or Gore Creek Straight Creek, etc. the idea was to create a framework for decision-making where those issues would be taken into consideration during project development.

Sandy said the ITFs are multi-disciplinary teams that work through major project elements. For this project we have:

- SWEEP ITF
- Section 106 ITF for Cultural Resources
- ALIVE ITF, which stands for A Landscape Inventory of Valuable Ecosystems and considers wildlife connectivity issues



- Air Quality and Noise ITF

He noted not every project has a full host of ITFs; they're generally developed on a project-by-project basis. The goal is to discuss the existing conditions and concerns, get feedback and discuss potential mitigation measures, and aid in the development of the evaluation criteria as the project moves forward.

4. Previous Studies

Previous Studies/Planning Elements

Sandy said there have been quite a few studies and planning elements on I-70. Many are likely familiar with the *Clear Creek Sediment Control Action Plan* that covers a stretch of Clear Creek from the EJMT to approximately Beaver Brook. This was developed during a time in which CDOT was primarily using traction sand, so the Sediment Control Action Plan looked at winter maintenance materials and targeted traction sand specifically. It came up with a host of controls, primarily sediment basins throughout the length of the study area. It also identified areas with highly mineralized rock cuts.

Other studies that have occurred in this area are the *Guidelines for Improving Aquatic Connectivity for Terrestrial and Aquatic Wildlife*, and *A Regional Ecosystem Framework for Terrestrial and Aquatic Wildlife along the I-70 Mountain Corridor*.

Sandy said if anybody is aware of other recent studies, resources, or reference materials that should be included, please let the team know.

Previous Projects in the Corridor

Sandy said the SWEEP process has been used on several different projects in the I-70 Mountain Corridor. This is not a list of all the projects that CDOT has delivered in the last decade on the Corridor, but the ones that the team is familiar with.

- Twin Tunnels Widening (now, Veterans Memorial Tunnels)
- Eastbound I-70 Peak Period Shoulder Lane
- Fall River Road Bridge
- US 6 Acceleration Lane and Chain Station
- Westbound I-70 Peak Period Shoulder Lane
- Floyd Hill to Veterans Memorial Tunnels
- EJMT Improvements

All these projects went through the SWEEP process, but each one of those has been unique because solutions are unique to the project area.

5. SWEEP Specific Issues

Throughout the past SWEEP processes, CDOT has heard a lot of common concerns regardless of where the work is occurring in the Corridor and these also apply to this project.

- High value fishery and fishing access
- High recreational use. Clear Creek is the second most rafted water body in the state



- Impacts from prior highway construction, such as riprap, armored banks, and channelization
- Sediment and deicer impacts
- Wetland and riparian impacts
- Aquatic organism passage
- Mining waste and mineralized rock formations along I-70

Fisheries and Aquatic Species Issues

- The most common species is trout. There are brook trout, rainbow trout, cutthroat trout, brown trout, and greenback cutthroat trout (GBCT), which is a federally listed species and there are pure strains of those that were reintroduced in Dry Gulch and Herman Gulch by CPW. Just this year, natural reproduction of GBCT was documented in Herman Gulch by CPW.
- Aquatic organism passage that precludes upstream and downstream movement. This cuts a little bit both ways because there are instances where CDOT is looking to enhance the movement of aquatic organisms. But, at other times there is an effort to preclude that movement. For the GBCT in Dry Gulch and Herman Gulch CDOT's culverts act as management barriers that prevent nonnative trout from moving from Clear Creek into these smaller tributaries. In these instances, the preference would be to maintain these barriers to prevent hybridization and competition from other trout species.

Past Impacts

- Increased stormwater runoff, spills during construction and operation of the interstate
- Sediment and deicer impacts that have historically been known to occur

Wetlands and Riparian Area Issues

- Wetlands, including fens are present on the south side of I-70
- Riparian areas along most surface waters
- Ecological Benefits include:
 - Water quality
 - Water Storage
 - Wildlife Habitat
 - Erosion Control

Water Quality Issues

- Surface Waters

There are several named surface waters, some unnamed surface waters, plus some smaller tributaries. Clear Creek is the primary surface water.
- Past sediment Impacts
- Ongoing impacts from deicers
- 303(d) Listed Waters



There aren't any 303(d) listed waters in our project area. They all occur a little bit downstream. A lot of those listings have to do with past mining activity, and this project is high enough up in the watershed that the majority the historic mining issues and associated runoff are further downstream.

- Impacts from deicer from winter maintenance activities
- Ongoing Monitoring at EJMT

There is ongoing monitoring that's occurring at near the EJMT by CDOT for the last several years. There are four monitoring locations, along Clear Creek in the I-70 Corridor monitoring a variety of constituents. There is quite a bit of data extending over years that help us identify trends regarding water quality.

Mine Water and Mineralization Issues

- CDOT runs into this on a lot of the projects in the Clear Creek corridor, but on this project the majority of that is downstream so it should not be an issue from a water quality perspective, but CDOT wanted to make sure it is acknowledged because it might come up in our discussions.

Mandy said another thing that has come up before are rock cuts and the natural mineralization of the rocks and disturbing them. The experience on the projects to the east where there were major rock cuts around the Idaho Springs area have not resulted in those type of impacts. The good news about the concerns present when SWEEP was originally put together, have not materialized.

6. Evaluation Criteria and Mitigation Considerations

Winter Maintenance: Material & Application Rates

- What materials are being used and what are those application rates? The maintenance team is always trying to maximize that application rate, meaning what they're trying to do is keep roadways open but not use too much material.
- JoAnn asked if we could we also include discussion of all the de-icing practices that are used on this stretch of highway. In addition to the impacts to fens, she thinks it's very clear that something has been impacting the trees. If you drive west from Bakerville up to the EJMT, you will see quite a collection of dead and dying trees. She doesn't know if that is aerosols that are released or if salt solutions are used. We've done a lot of looking for studies on this and we found some that were done by CDOT and probably the USFS that ought to be included in the background for this project to determine if best practices are being followed in terms of the impacts of winter maintenance on vegetation of all sorts. With dying trees along the highway and the likelihood of forest fires, there are additional concerns, not just simply the health of the plants but also the possibility for contributing to a tragic forest fire. We saw that happen in Glenwood Canyon around 2018-2019.

Impacts to Waters of the U.S.

- What alternative either avoids or minimizes impacts to Waters of the US and wetlands to the greatest extent possible.



Nolan said the EPA and United States Army Corps of Engineers (Corps) are obviously interested in the mapping that's been done on fens.

Nolan said fens are unmitigable resources and CDOT has been very clear that there cannot be any direct impacts to these wetlands.

Amy Saxton (Clear Creek County) asked what unmitigable resources means.

Mandy said it means they can't be replaced. They take thousands of years to develop and if there are impacts to them, you can't plant or do anything to create another fen in our lifetime.

Josh said the last he heard the Corps wasn't even allowing impacts. At one point it was up to six or eight to one mitigation ratio.

Amy asked if the answer to the problem that fens are unmitigable is to just not study them.

Mandy said no, it means that they can't be impacted because they can't be replaced. There has been mitigation done throughout the state in certain areas, the CDOT goal is to avoid impacts to them.

Francesca said Brad Johnson out of Colorado State University has done some interesting fen mitigation work/research for some water storage projects.

Ashley Guiles (Colorado Trout Unlimited) said she loves this discussion because she's a wetland nerd. She wants to say that Brad Johnson's research on replacing fens was not at altitude. That's likely not a source that CDOT can use to see if there is an opportunity for fen mitigation. *Update- one location of fen mitigation/research being conducted by Brad Johnson is located just a few miles south of Leadville- so this mitigation research is being conducted at altitude as most fens are located in the subalpine. Reference article: <https://waterdesk.org/2019/12/lower-homestake-creek-dam-wetland/>

Amy said CDOT doesn't study whether transportation impacts anything; they only study whether transportation projects impact things.

Francesca Tordonato (CDOT) said for that I-70 Acceleration Lane project, CDOT mapped fens below Loveland Ski Area along the Clear Creek floodplain but we weren't actually looking at any direct impacts from chlorides and soils were not analyzed for different constituents. CDOT only looked at the percentage of organic material and whether it qualified as a fen.

Francesca said there are very specific considerations that go into classifying something as a fen and we didn't actually do specific analysis, but she dug a lot of soil pits out there and it would be interesting to do a study. However, she didn't see any visual indications that there were water quality issues with the fens.

Amy said this project will undoubtedly introduce more snow removal materials. The project will have to study the impacts of the project on fens, which means we will have to understand the status of snow removal materials on fens to address and assess the impact of



new amounts of increased snow removal materials on fens. Then, understand current impacts on fens and new impacts on fens because there's going to be an impact, right?

Mandy said she doesn't know if they will be impacted. Fens are thousands of years old and stable. CDOT doesn't know what the effect looks like in terms of their reach. Fens are not created but the team hasn't seen them shrinking. The project team doesn't know what the effects are and how they could be measured. CDOT doesn't have that answer but she doesn't think that there is a way to know how/if chlorides affect them.

Francesca said she thinks it's something she'd have to investigate.

Matt Kizlinski (Peak Consulting Group) said the corridor has been surveyed and there are no fens on the north side of the highway where most of the work is going to be done, so there will be no direct effects. There certainly are wetlands present, however none of them qualify as a fen. He understands that most of them will qualify as low-quality ditch wetlands along the side of the highway. For impacts, it would be indirect effects of runoff.

Mandy said the project team is talking about the receiving waters on the south side of the highway that support the fens. There are gulches present and there is highway runoff that drains to the south side of the highway in the fen complexes. The changes that are done to those gulches could potentially change the extent of them if the hydrology is changed that could have an indirect effect that would be considered.

Amy said we are going to assume that the increase in snow removal materials would only really impact the north side of the highway.

Mandy said we are talking about how to control the snow removal materials that may dissipate within the environment. Keeping them away from those high-quality waters is something that we all agree is a good thing to do and that would be the most effective way to ensure that there are not impacts with the design.

Ashley said the fact remains the Corps does not allow for direct disturbance of fens. The question here is indirect impacts which remain to be seen. She would argue that even putting those constituents primarily on the north side and therefore, on the opposite side of the road from the fens, impacts the ecosystem. There is still potential and that does need to be looked at. *Update to read the Regional Conditions to Nationwide Permits for CO please see this link: https://www.spa.usace.army.mil/Portals/16/docs/civilworks/regulatory/Regional%20Conditions/2021%20Regional%20Conditions/Appendix%204%20Colorado%20Regional%20Conditions%20021_Final_2022_02_17.pdf?ver=mRqAwqb7_kDxH5FJZcquHA%3d%3d

The majority of nationwide permits have been revoked for the discharge of dredge or fill material in peatlands (or fens). A project with impacts to fens would likely be looking at an Individual Permit but mitigation would be difficult.

Matt said there are 11 mapped drainages that come from the north side and hit the shoulder that includes Dry Gulch, other named ones, and four other ponds, some of which are inhabited by beavers. All of those continue under the highway in a culvert



at different locations. If you're looking at a map of the fens, the south side along Clear Creek is just one long continuous wetland and the floodplain is in the creek itself. These fens are discrete areas. The question is, are those 11 discharge points going to change where they currently daylight now on the south side? What is their proximity to the known fens in general? This is where the Corps will come in, regardless of what the project team is talking about. These all drain into jurisdictional waters on Clear Creek, so there will be interest in those indirect effects to wetlands, whether there's a fen nearby or not. It is not just because the team is avoiding direct impacts, this is going to be a topic that will be addressed.

Amy said she met with some other folks and there might be opportunities for wetland banking along here somewhere. I don't know if that's going to work or not, but that was something that she discussed with Diane Kielty (UCCWA) and a woman who is involved with a riparian organization, and she thought there might be some opportunities.

Mandy asked whether she meant an opportunity to develop a wetland bank or to just use a wetland bank for wetland impacts.

Amy said this would be to develop some wetland areas or beaver habitat or other things that could have some win-wins and to provide some wetland banking that CDOT could take advantage of for other projects. The County has identified some possible opportunities in that area for passive water storage. There's not real beaver activity that we can tell, but there's some beaver like complexes and some opportunities that could have multiple benefits.

Mandy said she thinks there is a big beaver complex in the Bakerville area.

Matt said there are beavers on both sides of the Bakerville exit. One area is on Clear Creek, just west of the exit on the ramp.

Ashley said she wondered if they were still active.

Matt said they are active.

Matt said the wetlands that have been mapped so far are primarily ditch wetlands on the shoulder. All these drainages that come from the north hit the highway and they've created a continuous swab of wetlands on the north side. Doing some quick math, impacts will be well above any Nationwide permit threshold and the project will be going into Individual Permit territory, for over half an acre of loss. CDOT will have to propose compensatory mitigation and this is the first discussion about it. But typically, those discussions revolve around banking on-site or in-kind off site within the drainage. There will be a need because of the impacts to come up with mitigation. Whether that's banking, or doing some on-site mitigation, it will be required because there will be up to three quarters to an acre size of impacts and the team needs to work on what that translates to once we get to determining mitigation ratios. A lot of these are scrub-shrub wetlands that are typically mitigated at higher ratios. There are not any forested wetlands.



There will be the need for land control with the USFS and the right-of-way if there is the opportunity to do some on-site mitigation, but again, this is the first discussion that has been had so far.

Amy Birtwistle (USFS) said she knows CDOT treats a lot of weeds along the highway. One that is not on the Department of Agriculture listed species that isn't treated is yellow sweet clover. She's seeing it more and more and it is going to dominate along the roadsides and Clear Creek, and throughout Colorado, where it wasn't a few years ago. She said it is 30-40 feet off the roadsides, which could impact wetlands. If we don't start actively treating for it, we might miss the mark on it. Can it be put on the list of active things to treat for if it's not already?

Francesca said another concern is pollinators seem to love that species, so you must weigh the risk. There are a lot of pollinators and bees that use it. That's something you'd have to weigh because I've seen it typically in our mitigation sites; it will be dominant for a year or two and then my experience is that it gets out-competed after a few years. She asked if there are other thoughts.

Matt said we mapped weeds in the summer and that was not one that was mapped. He's sure they saw some but doesn't remember it being noteworthy. We saw a lot of chamomile and a couple of thistles, but overall, he wouldn't call this section an exceptionally weedy area. It's where you'd expect in the ditches on the roadside that will be disturbed.

Amy B said her experience with it is once it gets in, it is very hard to get out. It does like the runoff of the roads and the disturbance on the roadsides; it's just becoming like a yellow brick road along the highway in the summers.

Nolan inquired if there will be direct stream impacts. EPA will likely be recommending the use of the Colorado Stream Quantification Tool (CSQT) depending on the scale of the proposed impacts and that discussion should start as soon as possible to keep the schedule.

Mandy said the team is holding all direct impacts to the east edge of pavement on the eastbound side of I-70 and then all the drainages that Matt mentioned will continue to convey water. There could be some potential impacts with culvert lengthening and/or replacements, but that is not known yet. It is a good thing to keep in mind as the team starts to think about what the stream impacts would be. The team will use the CSQT process earlier rather than later, if warranted.

Mandy said regarding keeping on schedule, we should have noted at the beginning of the meeting that we don't have construction funds for this project yet, so we don't have an imminent construction schedule. CDOT does have money for design and one of the goals of the design and of the NEPA process is to try and understand a better cost estimate as well as the most efficient delivery method. Those are some of the things that the team is still evaluating, but we're not up against a construction schedule/budget at this point.

Nolan asked when the team expected to submit a jurisdictional determination (JD) request.



Matt said the team probably won't submit a JD request. The team is going to assume that all aquatic features are jurisdictional. CDOT won't apply for a Corps permit until there is identified construction funding.

JoAnn emphasized that the team should look at the wildfire possibilities caused by the dead vegetation along the highway in this segment. She knows that UCCWA has an Upper Clear Creek Watershed Pre-Wildfire planning study that they've published and there is a partnership that developed after that study that was completed called the Clear Creek Watershed and Forest Health Partnership. Both should be included in this discussion because if there is a wildfire disaster, there certainly will be water quality impacts from that.

Ashley said she is helping direct the Clear Creek Integrated Water Management Plan; we're three years in and we work very closely with UCCWA and we call it the Forest Health Partnership. The comment that Amy made before about identifying multi-beneficial opportunities in the upper watershed came out of that fire report that was done by Matrix two years ago, where they identified a number of opportunities in the channel as well as up in the upland area for pre-fire mitigation and lot of those projects fall in this area.

JoAnn said you might want to consult with the Town of Silver Plume. They aren't in the project area, but they're immediately below and they draw water for the town's domestic water supply from wells that are immediately adjacent to Clear Creek. She doesn't know if they have been impacted by the practices associated with deicing, but it would be good to consult with them on that question or any other possible questions they may have.

Mandy thanked JoAnn for bringing that up and said that the team did invite Silver Plume to be on the PLT and TT. The team asked a couple of different individuals and they declined to participate in the project, but that doesn't mean that we shouldn't contact them and talk to them about these specific issues.

Amy said she will contact the mayor, Sam McCloskey.

Mandy asked Joe Walter (CPW) if there is anything specific from that he thinks the team should be considering as part of the SWEEP scope.

Joe said he cannot think of anything specific, but he will touch base with Paul Winkle and Boyd Wright, who is the aquatic biologist that does a lot of the greenback cutthroat work.

Ashley asked if the team has reached out to Val Thompson with the USFS. She is working very closely with Paul on the greenback cutthroat trout release project.

Mandy said the team had a meeting with several of the USFS staff last week and she was one of the people that attended. Just as a note for everybody, USFS is having a lot of staffing issues and are very overloaded, and they have asked that all contacts to the USFS go through their project coordinator, Nicole Malandri. We are glad that Amy B could be with us today, but if anybody in this group has recommendations for information from people at the USFS, all of those recommendations should go through Maria Rocken at CDOT to Nicole and the team should not reach out to individual members. The USFS is making their specialists available as appropriate.



8. Evaluation Criteria Mitigation Concerns

Sandy said the team really wants to get the ITF's input on what issues weren't identified, and what may have been overlooked when it comes to the evaluation criteria and mitigation considerations.

Recreation access

Think about whether any access will be precluded to the waters in the area. Also, there are several trailheads and other informal access points that should be considered.

Aquatic Connectivity & In-Stream Barriers

This was a topic that came up at Monday's ALIVE meeting. CDOT is looking for opportunities to increase connectivity for specific species, but there are also select locations where the team wants to preclude connectivity to protect other federally listed species, such as GBCT.

Mandy said she thinks that one of the things that's missing here is habitat. There is a connectivity issue, but there's also a runoff issue that affects waters that affects habitat. She thinks we had some areas where there are some impacts of deicer materials going into boreal toad breeding grounds and some potential that that was affecting their pools and habitat areas.

Francesca said not on the Region 1 side. On the Region 3 side of the EJMT, she knows there has been documented breeding of boreal toads in water quality ponds. She thinks we should reach out to the White River National Forest to see if they did any more detailed surveys or analysis to see if there were any differences between toads breeding in natural ponds versus the unnatural ponds; it would be a good data point for us to look at.

JoAnn said that a while back, the USFS found boreal toads breeding in the muck (water in the tire tracks) left by trucks pulling off the highway where the water would accumulate. She doesn't know if there is any more recent information.

Mandy asked Amy B if she is aware of any studies that the USFS has done on water quality or any of the impacts to forest habitat or drainage areas in the Arapaho National Forest.

Amy said she will look up water quality; she knows they've done a lot of studies.

Snow Storage

This is something we want to consider as the team does the alternatives evaluation. CDOT indicated that we end up storing a lot of snow up there; some of that snow does have winter maintenance constituents in it and if you get a warm day, you get a surge of those constituents. It'd be good to see if there is there a way that CDOT can store the snow and possibly manage the melt and the runoff rates that are associated with it.



Amy asked if there will be an opportunity to study the issues related to snow removal materials, and how elements of those stay in fens and wetlands. The salt obviously moves downstream, dilution happens, and the salt goes away as it gets further down into the watershed. Where is it going? There's going to be more snow removal materials because we're adding pavement, and what is the impact of more snow removal materials in this area. It's an incredibly unique section of interstate. It's the highest elevation section of interstate in the nation and it's got to have the most unique combination of congestion and snow of any place. The point that was raised by Josh about snow removal is that those giant piles of snow are just impregnated with snow removal materials, so what worse place could there be for those giant piles of snow to be melting. This would be the perfect place to decide that it's just not allowed to put those giant piles of snow in an area this fragile and unique. She thinks that would be a great recommendation for us to make to say it is not allowed.

Stephanie Gibson (FHWA) asked where would we put the snow then. Amy said someplace else.

JoAnn said in the spring of 2019, Loveland Ski Area, which draws its potable water from the ponds adjacent to Clear Creek had to truck in potable water because the salt content of the water was so high that it wasn't suitable for drinking. I don't know if it happened in subsequent years, but they should have some data about that.

Mandy said Rob Goodell from Loveland Ski Area is participating on the Technical Team, so that would be a good question to follow up with him on.

Josh said he think one of the major things is that we want to be thoughtful about managing snow melt runoff and looking at the cost benefits of concentrating it. He's just really thinking about drainage. We can work on maintenance training, but for this project, he thinks there could be some physical structure considerations to bring value to the design.

Sandy asked would one of the goals of that be to just be able to control the melt.

Josh said yes, to be thoughtful about where we're discharging the water. It's going to occur and we want to have it dispersed. Is it better for it to be dispersed and run over land? Or is it better to concentrate it and then try to attenuate it? Or are there very specific areas like Loveland's drinking water source that we want to make sure does not receive a lot of runoff from the highway?

Mandy asked if he was saying that he thinks that there could be opportunities for operational improvements and some structural things versus storage?

Josh said yes. The snow must go somewhere. It's been thought of in the past, but it's a good time to revisit it. We should evaluate the locations that are currently being used.

Mandy said the team could balance Amy's comment that we should prohibit it and Stephanie's comment of it has to go somewhere to determine where it goes and what



kind of control measures are around the snow storage areas so chloride releases are reduced.

Josh said yes, because we're in the headwaters there would be a very low flow and you get concentrated impacts that should be minimized.

Mandy noted that Ashley typed into the chat that the fens would be the most likely impacted due to the greater organic material and that they're protective ecosystems.

Ashley said she was just thinking about Amy's comment about those constituents being absorbed into some of those sensitive areas because of the increased organic matter that is what defines a fen. They act like a sponge and would likely hold on to those constituents longer. She'd imagine that there would be greater impacts to those fens as part of the protected ecosystem. She likes the conversation about working some other alternatives into design, so thank you for that.

9. Next Steps, Schedule, and Action Items

Mandy said the team is trying to get the NEPA process started in earnest once we have some design options, which will likely be early next year. The team will look at some of the major options of some of those elements that we talked about, such as the auxiliary lane, the chain stations, and wildlife crossings, but they're all progressing at different stages.

CDOT will start to discuss the different elements at upcoming TT meetings. Then we'll be weighing issues that were raised, including some raised by this SWEEP ITF, the ALIVE ITF, and the TT on how to value and balance all constraints that we have in this area. One thing that is exciting about this project, is that the environment is important and this work matters a lot. A lot of projects that we work on don't have these kinds of unique resources. The team and the design will be thoughtful about what options are available and think about next steps for SWEEP, based on the input that you've provided today. We have some work to do on looking at snow storage, some design options for water quality treatment, and looking at water management in general. Mapping of the existing wetlands in the area is complete. Some threatened and endangered species surveys are also complete, but some of them were seasonal and were not able to be finished. Those will be done next spring and will be documented in the NEPA document toward the end of next year or early 2024.

Sandy thanked everyone for being a part of this discussion. These topics will inform the evaluation criteria and considerations as the team begins developing a suite of alternatives to find the best solution.

Sandy said the immediate next steps are:

- Develop evaluation criteria
- Start to lay out alternatives



Amy said she doesn't have a solution but would urge us to think about how the SWEEP recommendations can be adopted and given full consideration to do what is needed and take advantage of the opportunity to be broad-minded and not be limited in scope. This is the top of the watershed and there are a lot of environmental concerns here and that means there are also a lot of opportunities to answer some environmental questions through this project. An opportunity like this does not come along every day, so hopefully we can take advantage of that and think as broadly as the project allows in our approach.

Mandy said she would love to solve the deicing problem, so she's all in favor of figuring that out. It would be great for CDOT and it is a lofty and important goal. It's certainly one that we would like to have more productive conversations around.

Mandy said we probably won't have another meeting until spring, and we might even try to do a site visit depending on how things go because those are always even more fun.

Action Items:

- Look at the specific studies that we had not considered yet that were brought up by SWEEP (Sandy Beazley/HDR)
- Reach out to some of the additional stakeholders that were identified; Silver Plume and Clear Creek Watershed and Forest Health (Amy Saxton/CCC and Mandy Whorton/Peak)
- Touch base with Loveland Ski Area about any of the issues they had with potable water (Mandy Whorton/Peak)
- Mandy asked Amy B to see if she can find any information about USFS water quality or any of the impacts to forest habitat or drainage areas in the Arapaho and Roosevelt National Forests (Amy Birtwistle/USFS)
- Obtain the Upper Clear Creek Watershed Pre-Wildfire planning study (Sandy Beazley/HDR)



COLORADO

Department of Transportation

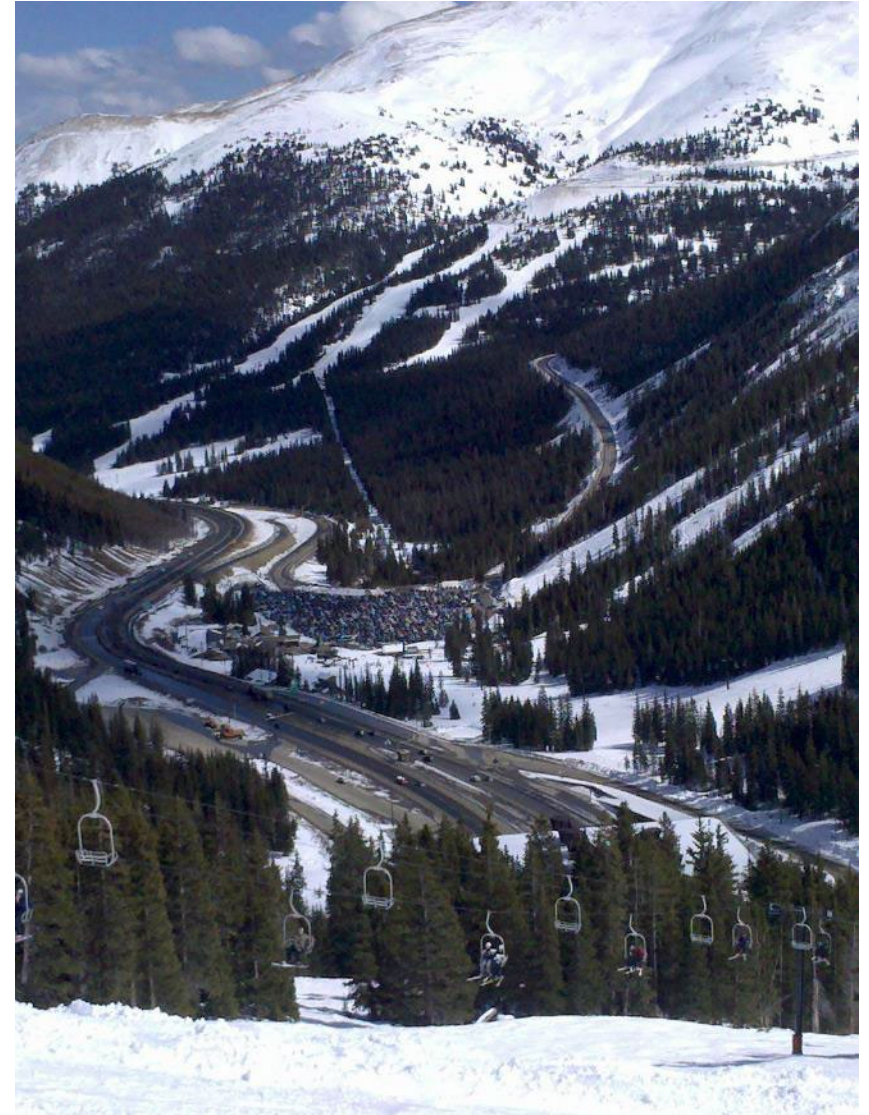
Westbound Bakerville to EJMT Auxiliary Lane

SWEEP Meeting #1

November 10, 2022



- Welcome, introductions, and meeting purpose
- Project overview & purpose and need
- SWEEP overview
 - MOU
 - ITF and roles and responsibilities
- Previous studies
- SWEEP specific issues
- Next steps, schedule and action items





Introductions

- Name
- Role
- Have you ever been involved in the SWEEP process?

Meeting Purpose

- Provide SWEEP ITF members with an understanding of the project to date
- Receive feedback on critical issues, data sources, concerns and opportunities
- Receive input on evaluation criteria





Tier 1 Auxiliary Lanes, Specific Highway Improvement

- Improve safety
- Improve mobility
- Decrease congestion



Tier 2 Project-Specific Purpose and Need

- Safety Concerns
 - Crash reduction
- Operational Issues
 - Speed differentials
 - Travel time
 - Unreliability
 - Freight operations, including chain stations
 - High number of incident closures



“Specific highway improvement”
approved in I-70 Mountain Corridor
PEIS ROD

- Westbound auxiliary (climbing lane)
from Bakerville to EJMT
 - Would become third lane in Maximum
Program
- Loveland interchange
- Chain up stations
- Wildlife crossing mitigation



Westbound auxiliary lane from Bakerville to the Eisenhower-Johnson Memorial Tunnels identified as a high priority component of the PEIS Preferred Alternative because it “improves mobility, enhances safety, and has public support.”



Project Location





- Purpose
 - Assist with compliance with federal, state, and local laws
 - Streamline interagency coordination
 - When possible, enhance aquatic resource conditions
 - Improve wetland and stream conditions
- Intent
 - Establish a framework for cooperation to develop mitigations, identify avoidance and minimization measures, identify people and data sources, identify issues, address cumulative impacts, prioritize aquatic resources, maintain collaboration and more

FS Agreement No. _____

Stream and Wetland Ecological Enhancement Program (SWEEP)
Memorandum of Understanding

I. Background

This Memorandum of Understanding (MOU) is made and entered into this 4th day of January, 2011, among the Colorado Department of Transportation (CDOT); the Federal Highway Administration (FHWA); the US Fish and Wildlife Service (USFWS); the USDA Forest Service (USFS), Rocky Mountain Region, Arapaho and Roosevelt National Forests and White River National Forest; the USDOJ Bureau of Land Management (BLM); Colorado Division of Wildlife (CDOW); Clear Creek County, Clear Creek Watershed Foundation; Upper Clear Creek Watershed Association (UCCWA); and Colorado Trout Unlimited, hereinafter referred to as "Parties."

The Parties to this MOU recognize that the existing I-70 Mountain Corridor and the proposed future improvements pass through several watersheds that support numerous aquatic resources. While all Parties recognize that the I-70 transportation system provides important benefits to Colorado citizens, the local communities, and economic interests on a statewide level, they also acknowledge that the I-70 Mountain Corridor impacts the water quality and viability of watershed ecology in these watersheds. Therefore, the benefits derived from a transportation system may come at a cost to other resources, including water quality and aquatic resources, unless appropriate actions are taken to consider these resources during each step of CDOT's I-70 Mountain Corridor Context Sensitive Solutions (CSS) Decision Making Process.

The Parties desire to improve stream and wetland conditions in the I-70 Mountain Corridor. To meet that need, CDOT convened the Stream and Wetland Ecological Enhancement Program (SWEEP) Committee, an advisory committee consisting of fisheries biologists, hydrologists, and other watershed and water quality-related technical experts, community representatives, and other potentially-affected parties. The SWEEP Committee will identify and recommend appropriate mitigation strategies, including design, implementation and monitoring, for anticipated environmental impacts likely to occur as a result of redevelopment of the I-70 Mountain Corridor. The SWEEP Committee will coordinate with the A Landscape Level Inventory of Valued Ecosystem Components Committee (ALIVE), whose goal is to increase the permeability of the I-70 Corridor to terrestrial and aquatic species to provide and maintain long-term protection and restoration of wildlife linkage areas, improve habitat connectivity, and preserve essential ecosystem components.

The I-70 Mountain Corridor extends through three major hydrologic drainage basins: Clear Creek, the Blue River and the Eagle/Colorado Rivers. Historic human practices, not solely related to I-70, have significantly degraded the quality of these streams. This MOU establishes agreement around SWEEP and forms the foundation of mitigation for aquatic resource impacts during Parties' projects along the I-70 Mountain Corridor and its communities.



Issues Task Force

- Multi-Disciplinary Team of experts formed to address single issue
- Works through elements of issue to reach recommendations for the PLT, TT, and/or Project Staff
- Goal of ITF meetings: discuss existing conditions and concerns; present and receive feedback on existing conditions; discuss the timing of specific control measure implementation

Roles and Responsibilities

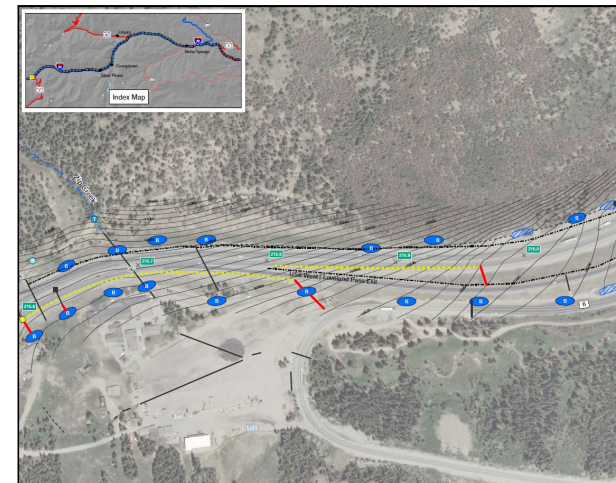
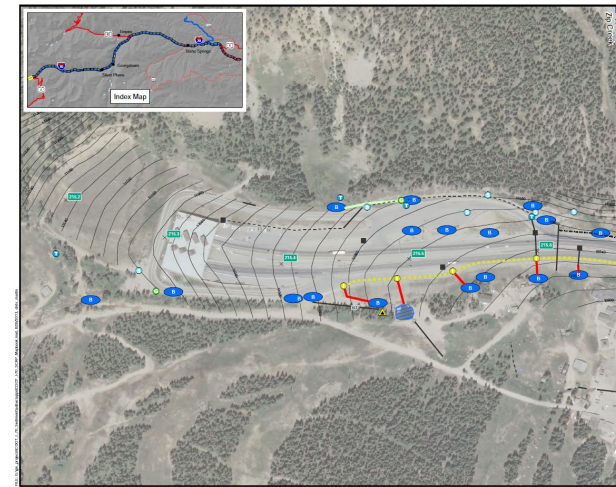
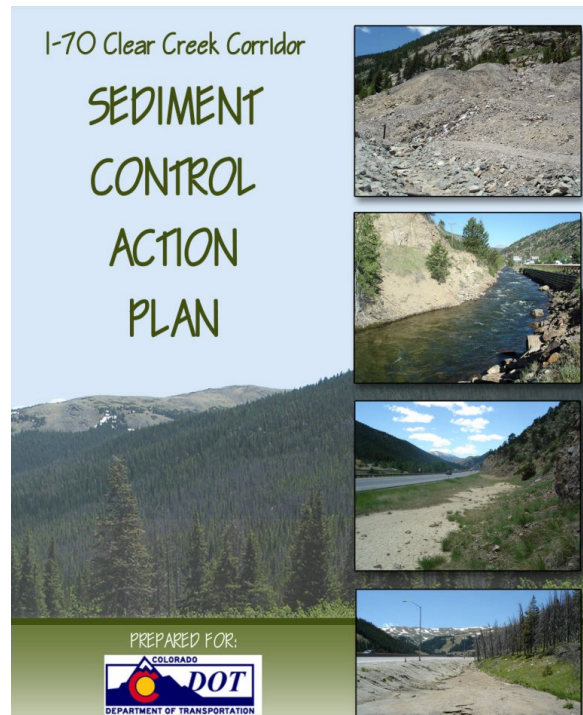
- Identify critical issues, concerns, and opportunities regarding streams, wetlands, and water quality
- Recommend evaluation criteria regarding streams, wetlands, and water quality
- Help identify mitigations and control measures





Previous Studies/Planning Elements

- Clear Creek Sediment Control Action Plan
 - Covers the stretch of Clear Creek from EJMT to Beaver Brook
 - Recommends sediment specific water quality control measures throughout
 - Identified areas with highly mineralized rock cuts
- Guidelines for Improving Connectivity for Terrestrial and Aquatic Wildlife in the I-70 Mountain Corridor
- A Regional Ecosystem Framework for Terrestrial and Aquatic Wildlife along the I-70 Mountain Corridor





Previous Projects in the Corridor

- Veterans Memorial Tunnel
- Eastbound I-70 Peak Period Shoulder Lane
- Fall River Road Bridge
- US 6 Acceleration Lane and Chain Station
- Westbound I-70 Peak Period Shoulder Lane
- Floyd Hill to Veterans Memorial Tunnels
- EJMT Improvements



I-70 Westbound Peak Period Shoulder Lane (PPSL) Project





Previously Identified Concerns

- High value fishery and fishing access
- High recreational use
- Impacts from prior highway construction
- Sediment and deicer impacts
- Wetland and riparian impacts
- Aquatic organism passage
- Mining waste and mineralized

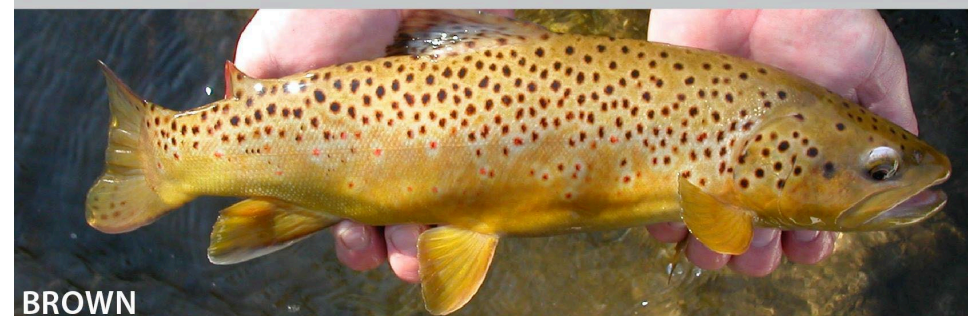
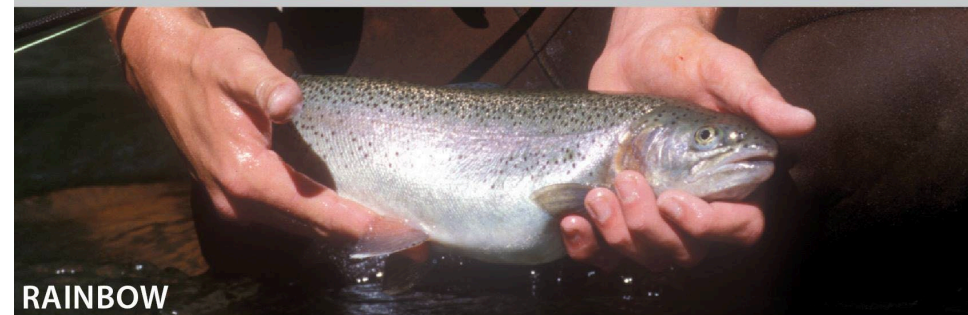


Source: mindat.org



Issues: Fisheries and Aquatic Species

- Highly valued fishery, with year-round opportunities
- Common species
 - Brook trout
 - Rainbow trout
 - Cutthroat trout
 - Brown trout
- Greenback cutthroat trout in Dry Gulch and Herman Gulch
- Past impacts
 - Increased stormwater runoff
 - Spills
 - Sedimentation



Source: <https://www.facebook.com/iowadnr/photos/which-one-of-these-trout>



Issues: Wetlands and Riparian Areas

- Wetlands, including fens, are present
- Extensive willow cars along Clear Creek
- Riparian area along all surface waters
- Ecological benefits
 - Water quality
 - Water storage
 - Wildlife habitat
 - Erosion control





- Surface waters include:
 - Clear Creek (headwaters)
 - Quayle Creek
 - Tributaries at Herman Gulch, Watrous Gulch, Kearney Gulch, Dry Gulch, and other unnamed gulches
- Past sediment impacts
- Ongoing impacts from deicers
- There are 303(d) listed waters
- Ongoing monitoring at EJMT





Issues: Mine Water and Mineralization

- Common concern throughout the watershed, however, limited mining activity took place in the project area
- A majority of the mine waste and mineralization concerns are located downstream





Evaluation Criteria and Mitigation Considerations

- Recreation access
- Aquatic species and connectivity
 - Fish
 - Amphibians
- Snow storage
- Winter maintenance
 - Material
 - Application rates
- Impacts to Waters of the U.S.





EVALUATION CRITERIA AND DESIGN OPTION DEVELOPMENT			PROJECT INITIATION AND GOALS			ENVIRONMENTAL IMPACT ANALYSIS			NEPA DOCUMENTATION			AGENCY / PUBLIC REVIEW			PROJECT APPROVAL			FINALIZE PROJECT		
<ul style="list-style-type: none"> Context and Core Values Project Charter Project Work Plan Environmental Field Surveys 			<ul style="list-style-type: none"> Development of Purpose and Need Existing Conditions Critical Issues Initiation of Issue Task Forces Initial Development of Alignment Options Alternatives Screening Matrix 			<ul style="list-style-type: none"> Identification of Environmental Impacts Identification of Mitigation Strategies Public Open House Final Technical Reports 			<ul style="list-style-type: none"> Draft NEPA Document 			<ul style="list-style-type: none"> Public Open House / Public Review Final NEPA Document 			<ul style="list-style-type: none"> Draft Decision Document 			<ul style="list-style-type: none"> Final Decision Document 		
Q3 2022			Q4 2022			Q1 2023			Q2 2023			Q3 2023			Q4 2023			Q1 2024		
JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Define Desired Outcomes		Endorse Process			Establish Criteria	Develop Alternatives or Options						Evaluate, Select, and Refine Alternatives or Options			Finalize Documentation and Progress					



Action Items

1. ...
2. ...
3. ...
4. ...
5. ...
6. ...
7. ...
8. ...
9. ...
10. ...

