MEETING NOTES

PROJECT:	21685 I-70 West Vail Pass Auxiliary Lanes
PURPOSE:	ALIVE Issue Task Force Meeting #2
DATE HELD:	December 14, 2018
LOCATION:	Miller Ranch Community Center
ATTENDING:	John Kronholm, Project Manager, CDOT Region 3 Karen Berdoulay, Resident Engineer, CDOT Region 3 David Cesark, CDOT Jeff Peterson, CDOT Drew Stewart, CDOT Cinnamon Levi-Flinn, CDOT Environmental Matt Klein, US Forest Service Alison Deans Michael, USFWS Paige Singer, Rocky Mountain Wild Michelle Cowardin, Colorado Parks & Wildlife Taylor Elm, Colorado Parks & Wildlife Pete Wadden, TOV Kristen Bertuglia, Vail Dick Cleveland, Representing Vail Town Council and EcoTrails Jonathan Lowsky, Colorado Wildlife Science Leah Langerman, Public Involvement Coordinator, David Evans and Associates Kara Swanson, Environmental Task Lead, David Evans and Associates Tyler Bowman, Engineer, Wood
COPIES:	Attendees, ALIVE ITF Members

Action items are shown in ***Bold Italics***

SUMMARY OF DISCUSSION:

1. **Introductions & Agenda**
    a. The group did introductions and Kara presented an outline of the agenda.
2. **Brief Overview**
    a. Kara reviewed the Issue Task Force (ALIVE) roles and responsibilities, Purpose and Need, recap of ALIVE meeting #1, and work completed to date on the project (see PowerPoint presentation).
3. **Wildlife Connectivity Comments**
    a. Kara noted that a summary of stakeholder comments from all sources and meetings regarding wildlife connectivity is in the presentation and handout packet.
4. **Wildlife Connectivity Recommendations**
    a. A multidisciplinary report was completed in 2011, as part of the PEIS. This looked at linkage interference zones (LIZs) for I-70 from C-470 to Glenwood Springs. These have been fine-tuned and made more realistic since. Jonathan Lowsky reviewed the

handout detailing the 2011 recommendations and updated 2018 recommendations by location (see Wildlife Connectivity Recommendations handout).

i. Proposing to fence the entire study area to keep animals away from the road surface and direct them to safe crossings.

ii. ***ACTION: Distribute 2011 report to attendees.***

b. MP 181

i. Improving/adding fencing will help guide animals to this underpass.

ii. Consideration: there is a lot of human traffic in this area, and could impact animals trying to cross here.

c. MP 182

i. Includes bridges near US 6 trail; this also spans the creek.

ii. Significant riparian habitat and wetland areas.

iii. A lot of animals use this crossing following the creek.

iv. Domestic dogs are a problem. Users let dogs roam leash-free. Surveys found a lot of dog tracks. Other animal tracks were discovered, but they were likely crepuscular/nocturnal.

v. Recommend working with USFS and CPW to encourage users to keep dogs on leash & away from riparian habitat.

d. MP 183

i. Follow the 2011 recommendations.

ii. Any benefit from removing the stream culvert offset by greater impact to stream due to contamination & sedimentation.

iii. Add vegetation on west side & coarse woody debris under the bridge to provide cover for smaller mammals.

e. MP 185.5

i. Follow the 2011 recommendations.

ii. Animals benefit from having a "wildlife lane" (separate from the recreation lane) with coarse materials under the structure to increase use of crossing structure.

f. MP 186.5

i. 2011 recommendation was for a crossing structure/arch at this location, but now have recommended it is moved to higher on the pass (188.3) instead.

g. MP 187.4

i. An overpass was recommended in 2011, but now is not recommended. Traffic safety issues and wildlife research shows that it is better to build more underpasses throughout the area.

ii. At the upper end of the project area, mule deer and elk are not target species for crossing structures. There is no reason for these animals to move perpendicular to the highway at this section; it's all summer range. Mule deer and elk often follow drainage patterns. The upper area of the project has no major drainages running perpendicular. Deer typically cross lower, crossing below MP 186.

iii. Lynx do exist in the upper portion of the project area. Studies in Banff have shown that lynx readily use underpasses. Lynx shown to prefer crossing where their habitat approaches the roadway.

iv. Michelle Cowardin noted that Craig sent an email last night and has changed position – now believes the underpass structures should be larger.

v. John stated that State Patrol records two animal collisions per year in the upper portion of the pass. A recommended 150' overpass would cause more than the two accidents per year due to icing and shading. This is one of the areas with the highest crashes (peak at 187.5) already.

vi. Karen noted that CDOT doesn't want to impact safety on the roadway and go against the project Purpose and Need. This is why more underpasses would be a better balance for connectivity and safety.

h. MP 186.9

i. Michelle suggested that bigger is better for crossing structures.

ii. Julia Kintsch sent an email and recommends six-foot instead of four-foot diameter underpasses for medium to small species and substantially larger structures for large animal crossings at 187.4 & 188.3 sites. The project team is looking into making these changes and plans to follow this recommendation where possible (constructability will be considered).

iii. A small PVC pipe within the culvert has been shown to help encourage smaller animals such as martens to go through the larger culverts.

iv. John noted that the locations shown on the map and matrix are approximate, and will be adjusted slightly during final design as needed, and refined throughout the process.

i. MP 187.4

i. This is one of the largest crossings proposed. Julia and Michelle have suggested an even larger size.

ii. Elk is a species that is reluctant to use new crossing structures. Some have been shown that it takes elk three to five years to adopt underpasses. This is one of the reasons to consider even larger structures to help the elk and deer be more willing to use them.

iii. Michelle noted there is an underpass that is 42' wide and 14' high on SH 9 across two lanes of traffic. Four years later elk are still hesitant to use it, and deer are also slightly hesitant. The 211 is 14' tall and 16' wide and under six

lanes (this is a different purpose, by Eisenhower, but team members could go look at the size).

iv. Jonathan pointed out that moose have been seen in CDOT video using crossing structures. So there may be another species to consider.

v. Michelle brought up preference for a 14'x80' arch underpass (not a box culvert).

1. Deer prefer larger structures according to Michelle.
2. Typically takes animals 5 years to adopt smaller box structures.
3. Jonathan noted that the team is continuing to study to ensure that what gets constructed get used by animals.

vi. Michelle noted she is glad to see the team taking into consideration Julia's comments.

j. MP 187.8

i. A small underpass is proposed here. There is a lot of small animal activity here. Research shows lynx like to cross in this area where suitable habitat (indicated by presence of prey such as snowshoe hares and pine squirrels) is located on both sides of the highway. They also prefer natural crossings where streams intersect roads.

k. MP 188.3

i. This is the largest structure proposed.

ii. This should be large to accommodate elk if they choose to use it. There is no elk collision evidence to suggest that a problem exists. Although no current evidence of elk crossing activity in this area, they may once suitable crossing structure is placed. May not be crossing in area because of I-70 as barrier.

iii. Julia recommended a 16' x 80' arch with vegetation because there is research showing elk prefer to use arches for underpasses.

l. MP 188.7

i. A 4-6' structure is recommended for small to medium animals. Julia recommended 6-foot.

ii. Adding structure to the substrate will improve the use.

iii. Studies show that a smaller adjacent pipe would improve use.

iv. Adding vegetation on either side will also improve use.

m. Entire Project Area

i. Research has been shown that shelves installed within any existing drainage structures crossing the highway would be used by small mammals such as mice, voles, etc.

ii. Will be examining improving bat habitat under existing bridges, as recommended in the 2011 study.

iii. Vail Pass accumulates more snow than Banff. The Banff study has been used a lot as reference, so this needs to be kept in mind. Snow may block some structure openings if using Banff guidance. The team is considering designing the structures long enough so the openings extend away from the road and they don't get blocked by plow casting.

iv. Michelle recommended a lynx crossing between the interchange at 190 and the sand shed. John noted that the project team looked at this. In general, the topography isn't friendly for this, but there is a potential for one spot south of the truck parking. It could be two separate culverts with an opening in the median.

v. Michelle obtained lynx data from John Squires from 2010-2011. There are two females and two males that had a lot of movement on the west side. Successful female cross at 189.7. This is what spurred Michelle's recommendation for the lynx crossing at the top of the pass.

vi. Michelle questioned if culvert at 188.6-188.7 was part of the original discussion? Yes. Michelle noted this should also be enlarged because this will likely fill with snow in winter. The 4x4' should be made 6x6' or 8x8'.

vii. Michelle noted that Julia suggested for larger structures (especially 188.4) will need barriers to prohibit snowmobiles from using the structures (a barrier such as concrete bollards, which allows animals but not snowmobiles). John suggested additional signage could be paired with this. Michelle suggested the signage will be ignored. Jeff noted that snowmobilers use muddy pass crossing and signs have not deterred them. John suggested this should be taken into account in the detailed final design phase.

viii. John asked if there is a reason snowmobiles aren't allowed to go past Black Lakes. Dick Cleveland noted that it is part of travel management plan to prohibit them. Michelle suggested it was because of wildlife.

ix. Jonathan noted that skiers coming down East Vail chutes at MP 183 diminish the benefits of the wildlife crossing there.

x. Kristen asked if there is a big difference in effectiveness between underpasses and overpasses. Jonathan noted that there is evidence that overpasses are great for larger animals since they are more willing to use them. However, underpasses are also used by all of those species. The target species in this area aren't really the ungulates. In this area it seems more beneficial for more underpasses than one or two large overpasses.

xi. Kristen asked how to mitigate for snow plow casting. John said Julia recommended 80' wide underpasses. John noted this would mean a bridge in those locations. At 187.4, for instance, this is one of the highest accident locations already. Building a bridge here would add another ice hazard on the roadway. There are some variables to consider before recommendations

are finalized. There are some locations where the roadway dips down, where there could be an opportunity to build a bridge and flatten the roadway.

xii. Michelle noted that the CO 9 overpasses were never planned to accommodate big horn sheep, but they do use it. So, even though big horn sheep are not expected to cross I-70 on Vail Pass, they may use a crossing if it is provided. CPW released big horn in Gore range that are moving east.

xiii. Michelle commented that 22,000 mule deer crossings were documented using the CO 9 five underpasses and two overpasses in a three-year period. Not migratory, but building a larger structure to encourage more crossing would improve the situation. She agreed with recommendation for more underpass structures.

xiv. Jonathan showed tables from the Banff study to show that WVP target species used both overpass and underpasses. Banff study of five - 23' wide by 12' tall structures at 190' in length had a 76% success rate of deer using structure. No studies have yet to report a structure as 100% effective, as either an overpass or underpass

5. Aquatic Recommendations

a. CPW strongly believes fish barriers at Pitkin, Miller, and Polk Creek need to be maintained and/or improved to protect upstream cutthroat trout conservation population.

b. The 2011 recommendation was to use culverts to restore streams flowing below bridges.

c. Jonathan and Kendall agreed that the threat of the contamination from mag chloride, petro chemicals, sand, etc. supersedes the recommendation to pull culverts to improve aquatic habitat.

d. Michelle noted that pipes are not CPW's preferred improvement. They create a barrier for animals to cross the stream. In areas where there is an open stream, there isn't a need to cover it because the pollution and plow casting can enter anywhere else along the stream. This could also cause maintenance problems. She suggested maybe sediment traps could be more useful.

e. The biggest thing will be to maintain and repair fish barriers.

6. Trail Realignment Options

a. John reviewed comments received regarding trail alignments (see PowerPoint). Highlights include:

i. Need to fix sight distance and radius of curve near 185.2.

ii. Kevin Sharkey with Eco Trails has provided a lot of feedback, including a recommendation to widen trail to 14-feet where possible.

iii. Shared sentiment has been to keep the trail away from the creek.

iv. Add etiquette signs to encourage good interactions (passing lane mentality).

v. Need to keep trail open during construction.

vi. Karen noted that all of the ITF and public feedback is being considered and incorporated and will be shared at Technical Team (TT) meeting #8.

b. Karen emphasized that the trail challenges are balancing the recreational needs with environmental, and the team is looking at it from many avenues.

c. Michelle asked how sediment is considered in the trail design. John noted that there has been discussion to strategically locate the trail between the creek and the highway, add a concrete pan to collect the sediment. However, this is not yet decided and could create a safety issue on the trail. More investigation is needed and this will be discussed with the SWEEP ITF.

d. Trail alignments were reviewed by Tyler Bowman (see PowerPoint slide).

i. All three options have pros and cons, and more investigation is needed before a decision can be made. All involve moving the portion of the trail that is currently adjacent to the highway, and all tie into the same places at either end.

ii. Mid slope – closest to existing.

1. Constructability challenges of building a trail near the existing

2. Less environmental impact

iii. Intermediate – hybrid of the existing and across the creek.

iv. Creek – crossing to the after side of the creek.

1. More environmental impacts

e. Jonathan reviewed the trail alignment option matrix. He noted that his comments are from a wildlife perspective only, which is a viewpoint that can typically be in conflict with user experience perspective.

i. From wildlife perspective, it is best to keep trail where it currently exists.

ii. Largest wildlife concerns are where the trail relocation will cut through wildlife habitat and threaten integrity of Black Gore Creek aquatic habitat. Also, walls are a concern.

iii. A 3,675 long wall is proposed with a maximum height of 23', around MP 186.

1. Michelle noted that even 4-6' tall wall is a barrier.

2. John noted the wall would get even taller if the trail is widened beyond the 10' that is assumed on the plans currently.

iv. Jonathan noted Option 2 may cause more problems because it goes through the forested habitat and crosses Black Gore Creek.

v. Michelle noted that there is a possibility to limit walls and limit crossings of the creek by using a hybrid alignment.

vi. Jonathan noted that between MP 186 and 187 there isn't as large of a wildlife presence.

vii. Jonathan summarized that overall from a wildlife perspective, the best course of action would be to avoid forest fragmentation, avoid disturbance of wildlife habitat, stay close to highway as possible, and avoid introducing another area of influence to wildlife habitat.

viii. Michelle said where MP 187 begins, would want to have the trail converge sooner to avoid more wall.

ix. Dick Cleveland can't support the trail as proposed due to potential impacts to water quality and animals. He suggested that this trail should be elevated similar to Glenwood Canyon, built on a very narrow footprint, put on whatever route works best for everyone else. It would reduce cutting forest, increase ability for all animals to cross area, cross avalanche chutes with minimal impact, span creeks without touching creek banks or riparian areas. It could be built all in advance and not disrupt trail use. Moving trail from ROW gives additional 50' of area for sediment control. If the trail was elevated there would no human impact. From a maintenance standpoint, it would require little to no maintenance (no roots pushing, no sedimentation). This would be a continuous bridge viaduct.

1. Michelle will think about how this will affect wildlife.
2. Would need a rail and would need to be aesthetically pleasing.
3. Jonathan noted that building the trail over the habitat may not have much benefit, because it is the presence of humans at all that has impact on many species.
4. Michelle and Jonathan thought it would reduce impact to water quality, but may not benefit wildlife as much.
5. Jeff noted that if the viaduct is cheaper than the huge walls, and there isn't a difference in a certain location wildlife-wise, maybe go with the viaduct.
6. Michelle noted the visual impacts from I-70 will also need to be considered.
7. Jonathan noted walls are barriers to all non-avian species.
8. John noted the raised viaduct could be used as another tool to dovetail with the other options in a combined solution.

x. Michelle noted Option 3 is very hard for Parks and Wildlife to support.

xi. John noted most of Vail Pass is not built on bedrock, it is on moving alluvial soil.

xii. Michelle noted on page 21 -22 wall will have minimal impacts to wildlife, as long as pink line is brought up to blue line before it gets to the crossing structure.

xiii. Michelle also suggested stream crossings should be limited. This will help limit human contamination of streams.

xiv. John noted people sometimes swim, fish and picnic at Basin of Last Resort (page 10).

xv. Jonathan noted that all wildlife species use riparian areas, and riparian habitat is the most important habitat. Plant and wildlife diversity along Black Gore Creek is thriving and we should avoid disturbing it.

xvi. Kara noted also need to consider this as a contributing feature in the historic district.

7. Next Steps for Trail Alignment

a. SWEEP meeting moved to end of January.

b. Additional USFS coordination.

c. Final recommendation will be presented at TT #8 in late February.

8. Upcoming Schedule

a. Design will be refined over the next month based on TT and ITF feedback.

b. CDOT and FHWA will make design decisions.

c. Next TT meeting in Feb/March 2019.

d. Decision document is expected in early 2020.

e. No final design or construction funding yet.

f. ***ACTION: ITF members should send any additional comments on today's information by January 4th.***

9. Wildlife Fencing Along Highway

a. Michelle questioned if with snow loads, should a higher fence be used (from 8 – 10 feet).

b. Jonathan noted that powder snow is different than sun-hardened snow or snow plow spray.

c. Paige Singer asked if there will be issues with maintenance to the fence in this area with so much snow.

d. ***ACTION: Alison Deans Michael will send information on CDOT Region 1 and Region 5 mesh/grates to Jonathan.***

e. Michelle noted that CPW would like to keep disturbance through entire project as small and narrow as possible, and not impacting any areas that could be avoided.

10. Additional Comments Received After Meeting

a. Jen Prusse feels strongly that Options 2 & 3 retaining walls will be an impediment to wildlife. Especially Option 3, since it could impede wildlife from accessing water source.