COPPER RIVER WATERSHED HABITAT ENHANCEMENT PROJECT

In Cordova, Alaska

Discussion of H&H (Hydraulic and Hydrologic) Report

Teleconference Meeting

Meeting Minutes

Date: June 25, 2019; 1:30 – 3:30 p.m.

Purpose of meeting: Discuss and review comments on the Draft H&H Reports for Cop 43, 44, & 45 (20100508, 20100510, 20100511)

Location: Teleconference: (877) 620-0608 -- Passcode: 12345654321

Attendees: (attendee names are in **bold**)

Name	Agency/Company	Contact Info
Heather Hanson	**USFWS, PM**	**(907) 271-1630**
Franklin Dekker	USFWS	Franklin_dekker@fws.gov
Gillian O'Doherty	ADF&G	Gillian.odoherty@alaska.gov
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Theresa Tanner	USFS	theresatanner@fs.fed.us
Luca Adelfio	**USFS**	**ladelfio@fs.fed.us**
Dan Adamczak	ADOT&PF	daniel.adamczak@alaska.gov
Jeff Stutzke	**ADOT&PF**	**jeff.stutzke@alaska.gov**
John Bennett	**ADOT&PF**	**Johnd.bennett@alaska.gov**
Steve McGroarty	ADOT&PF	Steve.mcgroarty@alaska.gov
Chantel Adelfio	**CRWP**	**kate@copperriver.org**
Kristin Carpenter	**CRWP**	**kristin@copperriver.org**
Kirsti Jurica	CRWP	juricaka@gmail.com
Kate Morse	**CRWP**	**kate@copperriver.org**
Bill Spencer	**HDR**	**(907) 306-0077cell, 907.644.2087 wk, bill.spencer@hdrinc.com**
Kyle Walker	**HDR**	**(907) 441.7066 cell, 907.644.2014 wk, Kyle.Walker@hdrinc.com**
Tanya Bratslavsky	**BCE**	**(907) 272-5264 / tanya@bce-ak.com**
George Uligan	**BCE**	**(907) 272-5264 / George@bce-ak.com**
Betty Caudle	**BCE**	**(907) 272-5264 / mail@bce-ak.com**

Culvert key:

drainage	25-mile system	18-mile system	Elsner River	Sheridan River	Black Hole
CRWP ID	COP 43, 44, 45	COP 20, 22, 25	Cab 1 & 2	Sher 1 & 2, COP 1 & 9	COP 33
State ID	20100508, 20100510, 20101511	20100485, 20100488, 20100491	20101904*, 20101905	20101903, 20101902*, 20100467, 20100475	20100499

*****Removal only

Agenda:

1. Welcome/Introductions (5 min.)
2. Draft H&H report for Cop 43-45
3. Next Steps for EVOS Project/COP 43-45 Working Timeline
4. Round Robin/Q&A

1. INTRODUCTIONS

After the introductions and roll call, Kate Morse from Copper River Watershed Project (CRWP) opened the meeting.

2. DRAFT HYDRAULIC AND HYDROLOGIC REPORT REVIEW (15%) COMMENTS

Kate Morse with the Copper River Watershed Project (CRWP) stated that she didn't receive comments from the team before the meeting so they could be distributed to everyone. Heather did send in some comments, so Kate asked her to proceed.

Heather Hanson from US Fish and Wildlife Service (FWS) had two comments, per below.

1. Shown under the notes on Page 14, is "variable adjustment potential" and it should be "vertical adjustment potential"?

   She also commented that in general the H&H is great. It is nice to see a two-year comparison with the bank-full of channel. Thank you for doing that exercise.

2. It didn't look like you were showing the proposed thalweg on the profile. It's hard to read. It would be good to know what that is, so we can make sure it gets transferred correctly to the drawings.

   Question earlier in the report to consider backwatering all the culverts. If that's the plan, then the long profile, the thalweg profile, should show that.

Discussion:

For the purpose of the general discussion, the goal is to mitigate the beaver activity in the area while maintaining the pond elevations upstream without creating an attractant for the beavers at the upstream end of the pipe.

Per Bill Spencer with HDR, there are two possible ways to maintain the backwater– one is to have the substrate in the culverts set the elevation, the other is to backwater the culverts from below with some type of grade control below the culverts. COP 44 and 45, are already substantially backwatered from beaver dams downstream. First question: Do we want to maintain the ponding on the upstream side of the road, and two: should we try to do this with a tail crest downstream from the culvert? The alternative is to have the grade control at the upstream end of the pipe but the riffle may attract beavers who will try to dam up the entrance to the pipes and cause the water to flood over the road. This is the current condition.

If we install a tail crest weir downstream, the culverts would be back watered and the beaver attracting riffle flow would be on the downstream end so that the beavers wouldn't bother the culverts. COP 43 has a little bit of a steeper channel downstream, and it may be more difficult to backwater that site than the other two sites.

Does anyone have any opinion or preference on which way to go with this?

Heather liked the idea of the downstream end control, trying to outwit the beavers so they're not a problem. If that strategy works hydraulically and for capacity. Anyone else have an opinion?

Per Bill, if you do it on the downstream end, the whole notion of a low flow channel inside the pipe may not be necessary because the water never gets down to that level. The substrate should be in there in case the downstream control gets washed out. Heather commented that this method would make the passage better.

Per Bill, he would lower the substrate in the pipe a little bit and then put in the downstream control. We just need to determine what that's going to look like and how big that rock needs to be. We have a little bit of unknown there because we don't know what kind of substrate is underneath the point where the tail crest will be. He would advocate for excavating some of it to see what exists there.

If it's backwatered, will it freeze solid?

Per Luka Adelfo with US Forest Service (USFS), Franklin Dekker (USFWS) sent him the gage data and surface temperatures that he collected. As expected, these are mostly groundwater fed systems in the area. Cop 44 surface water froze very briefly in March, 2019, and Cop 42 did not freeze at all this last winter. So, if ice forms on the surface, it wouldn't be very thick.

Will the substrate be lower than the existing channel?

Per Bill, the way the culverts are set in there now, per the survey data, the size of the pipes are somewhat random because removal of the beaver dams and other issues have damaged the ends and the inverts and sizes are difficult to determine. Per the survey, there are plugs

maintaining the water level of the upstream pond. There is an area downstream where we can put in grade control and backwater, which might work.

What has been the observations of the beaver activity at Goose Meadows and the culverts there?

Per Luka, the beavers at Goose Meadows have built dams downstream and are creating backwater, as has been described in this discussion. This should fit nicely with the way that beavers in nature like to treat these pipes. Bill added that if we give them some substrates to key in on, they'll build their dam there.

Will this be an energy dissipating basin, and will it be the tail water control?

Per Bill, there will be a basin there, but not really energy dissipating. The culverts are wide enough and not that high, with rocks in place for substrate stability at the 100-year event. It will look a lot like a scour hole and tail water, but it's not going to be, really. Hopefully, the culverts are large enough that we won't get any scour downstream.

Will there be enough cover over the pipe when it's graded?

John Bennet with Alaska Department of Transportation and Public Facilities (ADOT&PF) stated that he and Luke drove down there to look at the pipes. He is concerned about using a box where the cover criteria is so limited--2' to 4'. An inexperienced blade man could take off a foot of cover rather than inches in one pass.

He'll look at DOT's internal policy about putting in a concrete slab on top to transition, so you don't catch the top of the culverts with a blade and get back to the design team on that.

Per Heather, we have had the discussion before about the cover and box culverts. Bill added that it was basically decided that we provide for potential loss due to grading. Another way to mitigate the grading issue is to make sure that the transitions are far enough away from the pipes that they are not bridging those vertical curves near the pipes, which will help protect them. By having everything stabilized on top of this elevated area, they are grading on a flat surface over the pipe. They're not trying to cut into a vertical curve.

This is always an issue on these gravel roads. Every year, a half-inch or so gets shaved off, then 15 years later, it's exposed. There could be some type of yearly inspection and when the cover gets thin, add material back on top of the culvert.

What is the speed design in this section for the profile of the road?

Jeff Stutzke from ADOT&PF did not have this information immediately available. He will the provide design speed for George Uligan with BCE.

Will this be a fishing access point? If so, consider flattening the slope on both sides so people can walk down it. If there's rip-rap protection on the fore-slopes, cover it in so that you don't twist your ankles in trying to access it to fish.

Per Kristin, she doesn't think this will be a fishing spot. However, will DOT need their heavy equipment to have access to this area to move dirt as part of their maintenance? That might be something for DOT to think about, but not so much for fishing access.

Since there were no more questions or comments, and everyone seems to be on board with putting in the controls from the downstream side, Bill will finalize the H&H report with the input and direction from the team.

NEXT STEPS

The goal is to have 65% design to discuss at the September 24th meeting. So, that will need to be distributed in early September for review.

For the July meeting, Bill Spencer will make corrections to the report and will revise the drawings to provide elevations at both ends to provide tail water control to DOT and will coordinate with DOT to incorporate their comments on the drawings and the report.

The next meeting will be a check-in for the team. If there is anything that needs to be discussed by the partners, just let Kate know a week before the meeting.

The next meeting will be **July 23rd at 1:30 p.m.**

Thank you everyone.

Meeting adjourned