

APPENDIX E

Essential Fish Habitat Assessment

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ESSENTIAL FISH HABITAT ASSESSMENT

GUSTAVUS AIRPORT RSA EXPANSION, GUSTAVUS, ALASKA

State of Alaska Department of Transportation and Public Facilities

Project No. 68287

I. PROJECT DESCRIPTION

A. Location

The Gustavus Airport is located, in Gustavus, Alaska (Sections 5, 6, 8 and 9 of T40S, R59E, Copper River Meridian). Gustavus is located approximately 40 miles east of Juneau on a peninsula off the Southeast Alaska mainland.

B. Proposed Action

The Proposed Action would:

- **Enhance Safety** – To enhance safety the Runway Safety Area (RSA) would be lengthened and widened to meet FAA guidelines for the Gustavus Airport’s Airport Reference Code (ARC). The RSA will be lengthened and widened by adding 409 feet at runway end 11 (north) and 799 feet at runway end 29 (south) as well as widening the entire RSA to 500 feet. The expansion at runway end 11 would require approximately 800 feet of the anadromous stream (#114-23-10199) to be rerouted (Figure 1).

DOT&PF is seeking approval of this Environmental Assessment (EA) and approval of funding for the proposed airport improvements through the Airport Improvement Program.

II. ANALYSIS OF EFFECT TO ESSENTIAL FISH HABITAT (EFH)

Essential Fish Habitat (EFH), as established by the 1996 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act and the Department of Commerce EFH Consultation Regulations, includes all anadromous fish streams and other protected species managed by the act in Alaska. EFH is defined in the Magnuson-Stevens Act as “those waters and substrate necessary to fish for

spawning, breeding, feeding, or growth to maturity.” An EFH Assessment is required for any federal action that may adversely affect EFH.

The unnamed anadromous stream #114-23-10199 (Stream) is listed by the Alaska Department of Fish & Game (ADF&G) as providing EFH for the rearing of Coho salmon (*Oncorhynchus kisutch*). Additionally, ADF&G witnessed adult coho salmon and Dolly Varden char (*Salvelinus malma*) upstream of the airport where they presumably spawn therefore the stream is also used for migration. ADF&G also trapped threespine sticklebacks (*Gasterosteus aculeatus*) in the stream. ADF&G stated that the sandy bottom of the stream provides poor spawning habitat.

Construction (Short-Term) Impacts

Potential impacts to salmonids from construction activities include temporary water quality degradation from suspended sediments, burial, and the chance of mortality from toxic substance (fuel) spills.

Effects on organisms are expected to be minor. Work will proceed under an approved Storm Water Pollution Prevention Plan. Any sediment entering the stream would be minor and temporary. The contractor will practice Best Management Practices (BMPs) for erosion and sediment control to minimize the introduction of suspended sediment in the water column.

Burial is being avoided as much as possible by allowing fish passage from the old stream reach downstream before it is filled.

Risk of significant oil spillage during construction is very low. Should such a spill occur it would dissipate rapidly in the downward flow of the stream to the Icy Strait. Petroleum products that impinge on the stream bank during low water level would cause significant mortalities in the local invertebrates that, in the longer term could reduce the prey base available for EFH species. The contractor will be mandated to proceed with work under an approved Hazardous Materials Control Plan to take all reasonable care to prevent such spills.

Operational (Long-Term) Impacts

The stream rerouting for the RSA expansion would eliminate approximately 169 linear feet of EFH habitat. The existing channel was excavated in the 1940's along a

straight alignment with two 90-degree bends along the outside of the airport perimeter fencing. A portion of the proposed RSA expansion lies over land currently used by the stream, therefore requiring it to be relocated. Further, there is concern these bends exacerbate flooding conditions. So the channel will be realigned as shown in Appendix D Figure 1.

Stream relocation design considers flood conveyance as well as geomorphic and sediment transport processes. These stream processes form and sustain fish habitat. The majority of the channel length to be abandoned is a relic of the original excavation as shown in Appendix D Figure 2. Sediment flux and stream process have not left signatures of self formed stream features such as bars or riffles.

The design cross section for the new stream alignment will be a two stage channel. The low flow stage accommodates geomorphic process creating self formed stream features and the habitats sustained by these processes. Ordinary high water is located within this low flow stage. The high flow stage will provide flood conveyance equal or greater than currently exists.

The low flow stage design will use reference stream reach conditions shown in Appendix D Figure 3 comprised of bars, near bank vegetation, meandering and complex form/habitat as a design template. These conditions were surveyed in detail during the May 4-6, 2009 field investigations by Inter-Fluve, Inc. The channel width, depth and stream bed substrates are self formed from flows, sediment transport and geomorphic and hydraulic processes. This provides a design template of conditions which are sustainable along this channel. These conditions will be replicated along the new channel alignment.

The high flow stage will provide flood conveyance area with width and bank slopes sufficiently open for improved flood conveyance conditions (Appendix D, Figure 4). The banks will be vegetated with native plant species and likely will include placement of organic matter salvaged during excavation.

Construction of stable stream bed and banks in this sand dominated system will require special techniques. Details will be determined in the design phase to follow. It is anticipated that banks will be constructed using biodegradable fabrics and/or plant materials salvaged from on site. Mats of existing sod will be harvested from the area of excavation. The mats will be harvested, handled and placed in sections; they can be stacked vertically to form the stream banks and laid flat to protect flat

and gently sloped surfaces. The root structure will provide immediate erosion protection and bank structure to form the new channel. The seed bank, plant material and organic content within the sod mat are expected to quickly establish a viable plant community and provide conditions for continued growth. Salvaging root fans of trees to be removed may be incorporated within the banks to provide overhanging structure for cover habitats. Ballasting may be required of buoyant materials. The majority of the new channel may be constructed in the dry by leaving the upstream and downstream ends for the last phases of construction.

The new stream reach improves fish habitat by providing a more naturally formed stream habitat including:

- bars,
- near bank vegetation,
- meandering and
- complex form habitat.

The new stream design also allows for continuous water flow even during low water episodes allowing for fish passage and decreased fish mortality.

III. **PROPOSED CONSERVATION MEASURES:**

To mitigate potential adverse effects to EFH the project will:

- Utilize Best Management Practices (BMPs) for erosion and sediment control during construction.
- Improving all but approximately 169 linear feet of the affected stream.
- Create fish habitat by forming a more natural stream habitat including:
 - bars,
 - near bank vegetation,
 - meandering and complex form/habitat and
 - allowing continuous water flow even during low water episodes allowing continuous fish passage and decreased fish mortality.
- Improve flood conveyance capacity by constructing a stream with width and bank slopes sufficiently open for improved flood capacity.
- Stack vegetative mats vertically to form the stream banks and lay mats flat to protect flat and gently sloped surfaces. The root structure

provides erosion protection and bank structure. The seed bank, plant material and organic content within the sod mat will quickly establish a viable plant community. Salvaging root fans of trees may be placed in the banks to provide overhanging cover habitats.

- All work would be conducted in accordance with permit stipulations.
- Construction will proceed under the conditions of an approved Hazardous Materials Control Plan.
- In-stream work will be conducted between July 1 and September 1 in accordance with ADF&G's recommendations.
- A professional with expertise in stream hydraulics and fish habitat restoration will be onsite to monitor and record construction activities, and to recommend modifications to protect EFH, if needed.
- If any stream bank stabilization is required (other than the replacement of sidecast organics) Contractor will use only certified 100% weed-free native seed mix or mats. This reduces the chance of invasive non-native plants from quickly destroying any natural riparian vegetation, and reducing the quality of riparian and in-stream habitat.
- The Contractor will be required to rinse equipment tracks, wheels, and undercarriages off-site, removing any soil or plant fragments. This reduces the danger of transporting weed seeds or other propagules to the project site.

IV. AGENCY DETERMINATION

DOT&PF on behalf of FAA determines there will be a temporary adverse effect on EFH during construction. However, the adverse impacts from construction activities would not be substantial because of:

- design of the stream relocation,
- the timing window for construction, and
- proposed mitigation.

Also, DOT&PF on behalf of FAA determines long-term effects on EFH are beneficial. Improved stream habitat offsets the loss of approximately 169 linear feet of EFH. Improvements are:

- creation of new bars, near bank vegetation, meandering and complex form/habitat

- better water flow ensuring fish passage during low water flow events, and
- increased flood capacity.



NO.	BY	DATE	REVISION DESCRIPTION

REP	DM	DM
DRAWN	DESIGNED	CHECKED
DM	08/03/09	
APPROVED	DATE	PROJECT

Stream Relocation
 Gustavus Airport
 Gustavus, Alaska



inter-fluve, inc.
 1020 Wasco Street, Suite 1
 Hood River, OR 97031
 541.386.9003
 www.interfluve.com

Figure 1:
 Site Plan

SHEET
 1 OF 1

Figure 2 - Gustavus Airport Stream Realignment Concepts

Inter-Fluve 8/14/2009

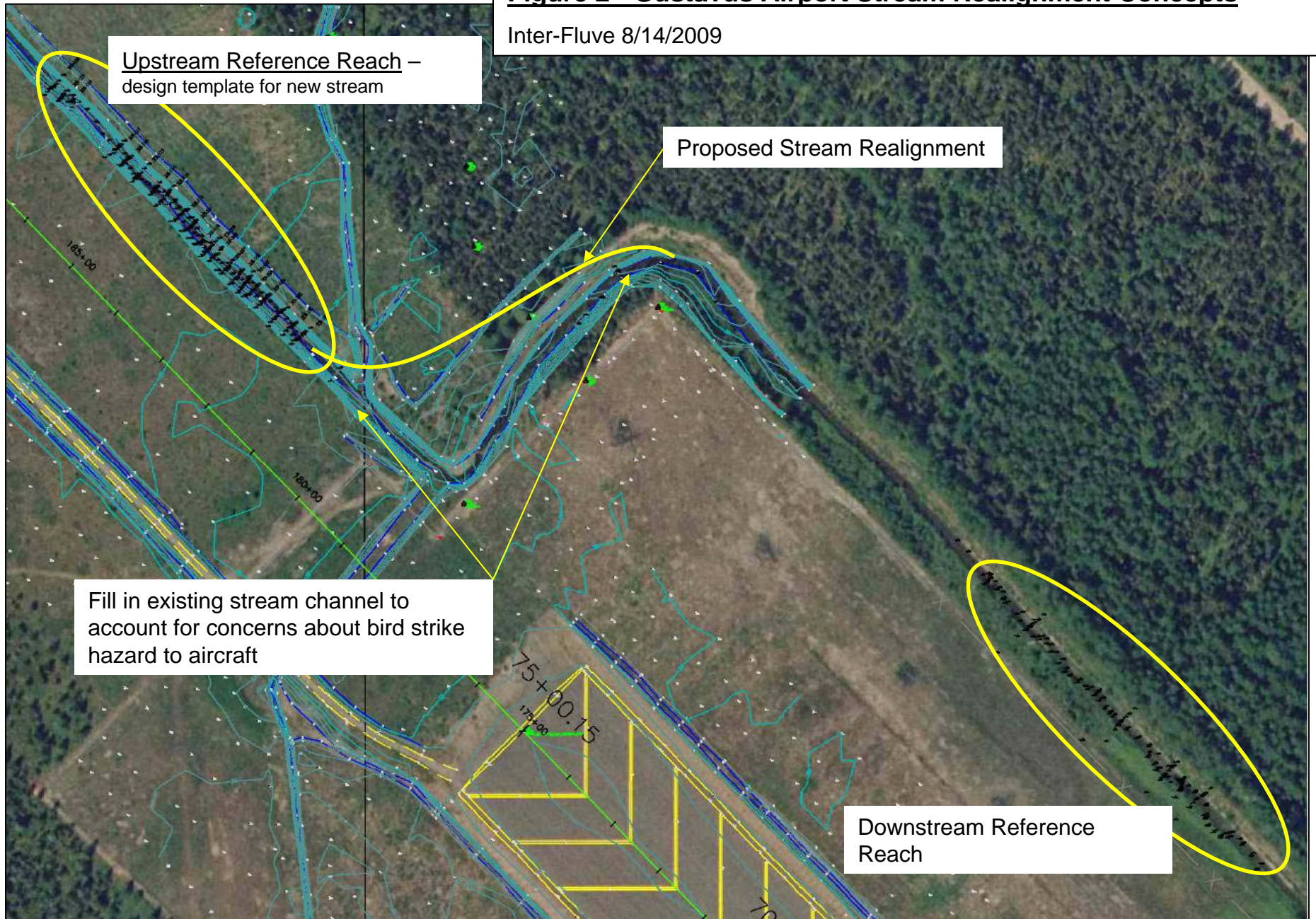
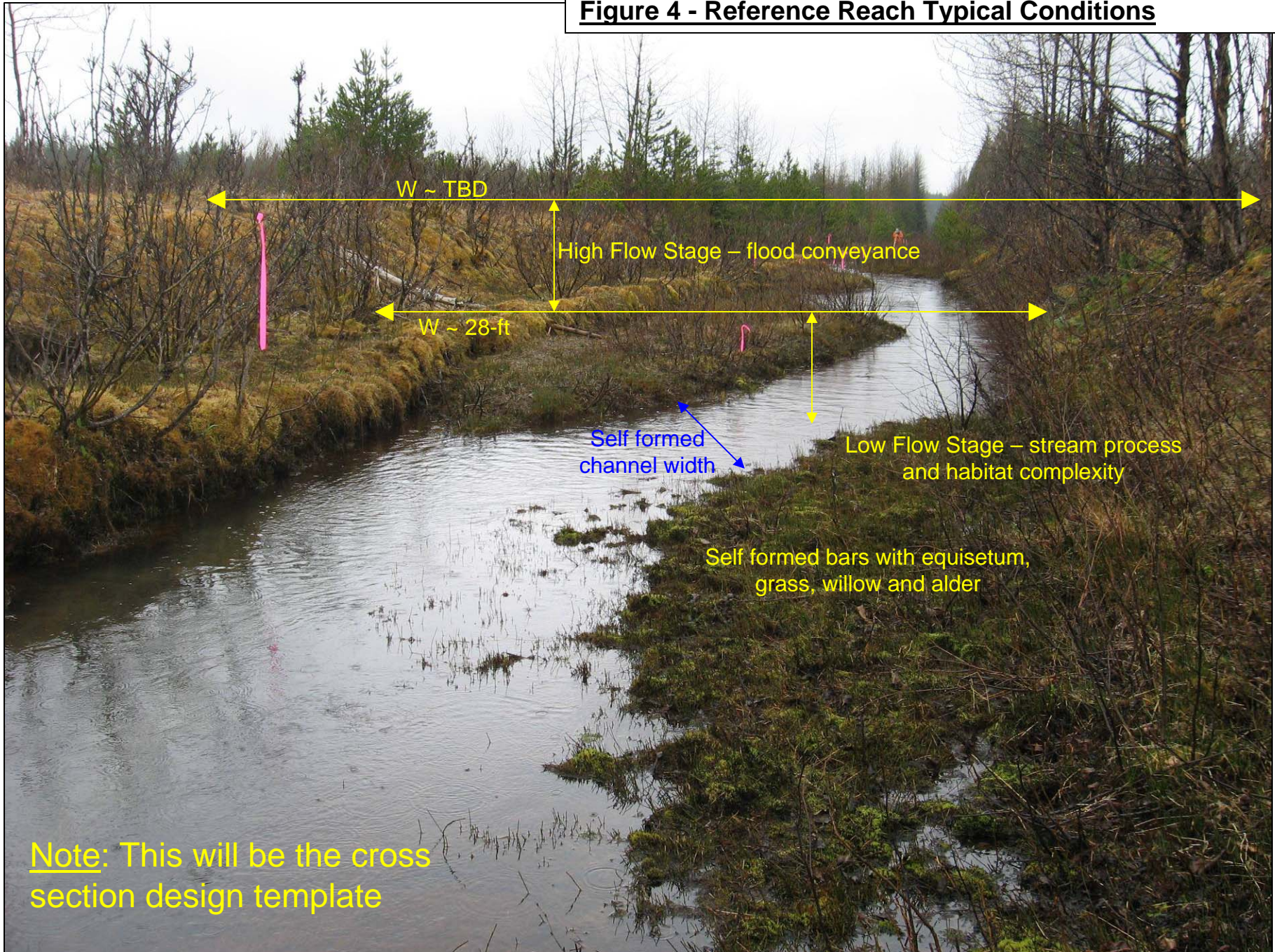


Figure 3 - Typical conditions for reach to be abandoned and filled



Figure 4 - Reference Reach Typical Conditions





MEETING NOTES

Date/Time:	January 6, 2010 at 9:00 a.m.
Project:	Gustavus RSA Improvement Project
Subject:	EFH Assessment
Job Number:	D60159
Attendees:	Jim Scholl, Bob Tousil, Janet Hall Schempt, Chuck Tripp, ADOT&PF; Kate Kanouse, ADF&G; Chiska Derr, NOAA Fisheries; Steve Brockmann, USFWS; Dan Miller, Inter Fluve (via telephone); Ananda Jenkins, DOWL HKM (via telephone)

Attendees were given the draft EFH prior to the meeting; associated EFH figures were distributed at the meeting. Mr. Scholl provided an overview of the Proposed Action. Mr. Scholl and Mr. Miller provided detailed descriptions and goals of the stream relocation and current conditions as known. Upstream and downstream conditions, including the DNR ponds north of the project area, were discussed. The Rink Creek Road Culvert Replacement project was also discussed as how it might relate to the project. The bulleted list below provides the highlights.

- Existing Stream provides marginal habitat. It is used for rearing. Spawning occurs somewhere upstream (confirmed by ADF&G - specific location(s) are unknown).
- Salmon River spills over its banks from time to time during which time water excess water enters the Stream.
- Proposed Action would improve fish passage and decrease stream length by 169 feet which would effectively increase the gradient.
- Stream relocation will help mitigate bird hazards cause by fish stranding and death. This was requested by the FAA. However don't want to provide spawning habitat by adding gravel.
- Stream has two stages (low and high) to accommodate flood waters.
- Contractor will be given the option for method of relocation (i.e. coffer dam, or pumping and fish removal/relocation and exclusion during construction (i.e. fencing and trap and release downstream).

Ms. Kanouse had the following questions/comments. Mr. Scholl's/Mr. Miller's answers are in red.

- The bottom of the stream is below the water table. Stream does not provide spawning habitat. Stream goes dry in the winter and summer. Coho and one Dolly Varden have been found in the DNR pits upstream.
- To avoid pumping could the new stream be built before the old stream is breached?

This would require a temporary bridge over the stream, large stockpile of vegetative material and dirt (5,000-6,000 cubic yards). This would also lengthen the construction time by a few months. With the pumping option construction could be completed in approximately one month.

- Will you need a conditional fish permit before it goes out to bid since the contractor will have the option on methods? The condition would be to provide specification prior to beginning work for approval – essentially functions as a permit modification.
DOT&PF anticipated having both options in the Title 16 permit. Perhaps this option should be used.
- Had previously provided the date of September 15 as an end date for in-stream construction, change to September 1 to provide time for sediment to settle out before fish passage begins. Also, there had been some discussion that perhaps June could be used, keep July 1 as the start date for in-stream construction.

Noted.

Mr. Scholl is planning to provide the EFH Assessment with figures via email in the next day or so for review and comment by agency attendees. Hope to have their comments back by the end of the month. DOT&PF is willing to provide stream plans if requested.

Jenkins, Ananda

From: Scholl, James W (DOT) [jim.scholl@alaska.gov]
Sent: Friday, January 08, 2010 9:26 AM
To: Steve_Brockmann@fws.gov
Cc: Jenkins, Ananda; Chiska Derr; Schempf, Janet E (DOT); Kanouse, Kate M (DFG); Tripp, Charles M (DOT); Schrader, Carl (DOT)
Subject: RE: 68287 Gustavus: Runway Safety Area / Request for comments on the Essential Fish Habitat (EFH) Assessment
Attachments: image001.gif; image003.png; image004.png

Thanks Steve. We will commit to a onsite construction monitor overseeing the stream relocation.

From: Steve_Brockmann@fws.gov [mailto:Steve_Brockmann@fws.gov]
Sent: Thursday, January 07, 2010 4:44 PM
To: Scholl, James W (DOT)
Cc: Ananda M. Jenkins; Chiska Derr; Schempf, Janet E (DOT); Kanouse, Kate M (DFG)
Subject: Re: 68287 Gustavus: Runway Safety Area / Request for comments on the Essential Fish Habitat (EFH) Assessment

Jim,
I like the concept and the thought you've put into this.

I think it's important to include an onsite construction monitor with expertise in stream hydraulics and fish habitat restoration as a conservation measure. I did not see it in the attachment.

Thanks for coordinating with us.

Steve Brockmann
Deputy Field Supervisor
Juneau Fish and Wildlife Field Office
3000 Vintage Blvd, Suite 201
Juneau, AK 99801

Phone (907) 780-1181
Cell (907) 723-7839
Fax (907) 586-7099

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"Scholl, James W
(DOT)"
<jim.scholl@alaska.gov>

01/06/2010 02:36 PM

To Chiska Derr <Chiska.Derr@noaa.gov>, "Kanouse, Kate M
(DFG)" <kate.kanouse@alaska.gov>,
Steve_Brockmann@fws.gov

cc "Ananda M. Jenkins" <ajenkins@dowlhkm.com>,
"Schempf, Janet E (DOT)" <janet.schempf@alaska.gov>

Subject 68287 Gustavus: Runway Safety Area / Request for
comments on the Essential Fish Habitat (EFH) Assessment

Chiska, Kate, and Steve, Thank you for looking over the project today. We've changed the timing window in

the EFH Assessment based on our meeting.

Please look over the attached EFH assessment and provide us with comments by January 29, 2010. If you could get us comments sooner it would help us begin construction this summer. [attachment "EFH Assessment with Figures 010610.pdf" deleted by Steve Brockmann/R7/FWS/DOI]

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cc "Ananda M. Jenkins" <ajenkins@dowlhkm.com>,
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Jenkins, Ananda

From: Kanouse, Kate M (DFG) [kate.kanouse@alaska.gov]
Sent: Monday, January 11, 2010 2:43 PM
To: Scholl, James W (DOT)
Cc: Chiska Derr; Steve_Brockmann@fws.gov; Jenkins, Ananda; Kanouse, Kate M (DFG)
Subject: RE: 68287 Gustavus: Runway Safety Area / Request for comments on the Essential Fish Habitat (EFH) Assessment
Attachments: image001.gif; image004.gif; image005.gif

Hi Jim,

Habitat biologists reviewed the DRAFT EFH Assessment for the Gustavus Airport RSA Expansion. We agree with the following changes discussed during our recent meeting:

1. Reduce the in-water timing window to July 1 – September 1 to avoid interrupting the adult coho return; and
2. Retain an Environmental Compliance Monitor onsite during construction (though we didn't see this in your most recent DRAFT).

In addition, we support using certified weed-free native seed mix or mats during revegetation.

Thank you for the opportunity to comment.

Kate Kanouse
Habitat Biologist
ADF&G Division of Habitat
(907)465-4290

From: Chiska Derr [mailto:Chiska.Derr@noaa.gov]
Sent: Monday, January 11, 2010 2:24 PM
To: Steve_Brockmann@fws.gov
Cc: Scholl, James W (DOT); Ananda M. Jenkins; Schempf, Janet E (DOT); Kanouse, Kate M (DFG)
Subject: Re: 68287 Gustavus: Runway Safety Area / Request for comments on the Essential Fish Habitat (EFH) Assessment

Jim,

I agree with Steve's recommendation to have a professional with expertise in stream hydraulics and fish habitat restoration onsite to monitor and record stream conditions during construction, and to recommend construction modifications to protect essential fish habitat (EFH).

By reducing the timing window from 15 to 1 September, which will allow construction-generated stream sediment to settle before opening the new channel for fish passage, you are further protecting EFH.

If any stream bank stabilization is required (other than replacement of sidecast organics) use only certified 100% weed-free seed mix or mats. Invasive non-native plants can quickly destroy any natural riparian vegetation, and reduce the quality of riparian and instream habitat.

To avoid introduction of invasive plants, please require the contractor to carefully rinse equipment tracks, wheels, and undercarriages off-site, removing any soil or plant fragments. This reduces the danger of transporting weed seeds or other propagules to the project site.

Thank you for the recent meeting and opportunity to comment.

Jim,
I like the concept and the thought you've put into this.

I think it's important to include an onsite construction monitor with expertise in stream hydraulics and fish habitat restoration as a conservation measure. I did not see it in the attachment.

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