Alder Creek Culvert #1

12 E. Fish Passage Program: Barrier Evaluation Form - Single Culvert at Crossing

Location Information

Project Name: **Chelan County Alder Creek Culvert #1**		IAC/SRFB Project #:	Date of Visit: **Summer 2006**
Old FPA #:	New FPA #:		HPA #:
GPS Location: Set the GPS Datum to WGS84 and format to decimal degrees (not degrees, minutes, seconds)		Latitude:	Longitude:
¼ Section: **SE**	Section: **12**	Township: **27N**	Range: **17** ☒ East ☐ West
County: **Chelan County**		Parcel #:	
Stream Name: **Alder Creek**		WRIA #: **45**	
Tributary To: **Chiwawa River**		Stream #:	

Driving Directions: From Leavenworth take the Chumstick Hwy to the town of Plain. At the intersection north of Plain, turn right onto the Chiwawa Loop Road. Proceed approximately 4.5 miles to the intersection with Meadow Creek road. Turn right onto Meadow Creek road and follow it until it intersects with Chiwawa River road and project site is the first signed crossing (Alder Creek) with the Chiwawa River road and Alder Creek.

Landowner Information

Landowner Name: **Chelan County Public Works right-of-way**			Landowner Agent:		
Mailing Address: **316 Washington Street Suite 402**			Mailing Address:		
City: **Wenatchee**	State: **WA**	Zip: **98801**	City:	State:	Zip:
Phone: (**509**) **667-6415**	Fax: ( )		Phone: ( )	Fax: ( )	
Cell: ( )	Email:		Cell: ( )	Email:	

Evaluator Information

Evaluator Name: **Alan Schmidt**		Affiliation: **Chelan County Natural Resources Department**	
Mailing Address: **316 Washington St. Suite 401**			
City: **Wenatchee**		State: **WA**	Zip: **98801**
Phone: **509-667-6567**	Fax: **509-667-6527**	Cell:	Email:

Barrier Information (measurements in meters)

Is the stream fish-bearing? ☒ Yes ☐ No ☐ Unknown			Species, if known: **steelhead, chinook, bull trout, westslope cutthroat**		
Is this culvert a fish passage barrier? ☒ Yes ☐ No ☐ Unknown ☐ Level B needed					
Shape: **pipe arch**	Material: **corrugated metal**	Span/Diam: **1.8 m**	Rise: **3 m**	Water depth in culvert:	Outfall drop:
Length: **19.8 m**	Culvert slope(%): **3.4%** ☐ Laser level ☐ Transit ☒ Other (describe) **Barrier Inventory**				
Streambed material throughout culvert: ☐ Yes ☒ No ☐ Unknown			Apron: ☒ None ☐ Upstream ☐ Downstream ☐ Both		
Road width: **4.3m**	Road fill at DS end: **<2.4m**	Plunge pool: Length to tailout:	OHW width: 3.7m	Max depth:	
Bankfull width (outside of culvert influence): **3.66 m**			Culvert span/bankfull width ratio: **0.49**		
Problem with culvert: ☒ Outfall drop ☐ Slope ☒ Velocity ☐ Depth			Percent passability: ☐ 0% ☒ 33% ☐ 67% ☐ 100%		
Will this culvert be entered into the WDFW-FPDSI (formerly SSHEAR) database? ☐ Yes ☒ No If yes, Site ID **#:**					
Comments:					

Attachments

☒ Photos ☐ Level A Assessment ☒ Site Map ☒ Other ☐ Additional Comments

Fish Passage Program: Expanded Barrier Evaluation Form

Project Information

Project Name: **Alder Creek Culvert #1**	***IAC/SRFB Project #:*** *06-2249*	***Date: 9-18-2006***

Evaluator Information

Evaluator Name: **Alan Schmidt**		Affiliation: **Chelan County Natural Resources Department**	
Mailing Address: **215 Melody Lane**			
City: **Wenatchee**		State: **WA**	Zip: **98801**
Phone: **509-664-9200**	Cell:	FAX:	Email:

Watershed Information

Basin area (square miles above culvert): **7 sq. miles**	Amount of habitat available upstream: **645** (m)

Stream flow: ☒ Perennial ☐ Intermittent ☐ Unknown Source of information: **USGS maps**

Has a barrier inventory been conducted in the watershed? ☒ Yes ☐ No If yes, list source and date completed:

Are there downstream barriers? ☐ Yes ☒ No If yes, describe. List source; use separate sheet if necessary:

Are there upstream barriers? ☒ Yes ☐ No If yes, describe. List source; use separate sheet if necessary: **Alder #2 & 3; Alder #2 is scheduled to be replaced in 2007; see Alder Creek Culvert #1 Project Report for more details**

Has the stream been walked? ☒ Yes ☐ No If yes, information source:

Has a WDFW Priority Index number been calculated for this barrier? ☐ Yes ☒ No If yes, PI#:

Fish Species/Use

Species present at site:

☒ Bull trout/Dolly	☒ Chinook	☐ Chum	☐ Coho	☒ Cutthroat
☒ Resident Trout	☐ Sockeye	☒ Steelhead	☐ Pink	☐ Brook/Brown

Information source: **Harza/BioAnalysts 2000; ISEMP 2005; NPCC 2004; USFS 2006 Cameron Thomas personal communication; WDFW 2005; see Alder Creek Culvert #1 Project Report for more information**

Current fish use downstream from barrier (include source of information): **same as above**

Current fish use upstream from barrier (include source of information): **WDFW (2005) Fishdist GIS layer indicates steelhead are present upstream of barrier #1. However, WDFW local stream surveys have not found any steelhead redds upstream from Alder Creek Culvert #1 (USFS 2006 Cameron Thomas personal communication)**

What species and life history stages might use the habitat made accessible by the project? **Steelhead and resident rainbow trout (adults and juveniles), spring Chinook (juveniles), bull trout (juveniles), westslope cutthroat trout (juveniles)**

Provide a qualitative description (canopy and instream cover, channel stability and complexity, spawning gravel quality and quantity, human alterations) of the habitat that will be made available by barrier correction, if available. Include source of information: **Harza PI**

Fish Passage Program: Correction Analysis Form

Site Information (measurements in meters)

Project Name: **Alder Creek Culvert #1**	***IAC/SRFB Project #:*** *06-2249*	***Date:*** *2006*
Bankfull Width (outside of influence from the culvert): **12 feet**	Utilities Crossing: ☐ Yes ☐ No ☒ Unknown	
Road Fill at Downstream End:	Road Width: **4.3m**	
Road Description/condition (mainline, spur road, driveway/access): **Chiwawa River Road**		

Evaluator Information

Evaluator Name: **Alan Schmidt**		Affiliation: **Chelan County Natural Resources Department**	
Mailing Address: **316 Washington St. Suite 401**			
City: **Wenatchee**		State: **WA**	Zip: **98801**
Phone: **509-667-6567**	Cell:	FAX:	Email:

Upstream Habitat/Channel Description

Channel Slope (outside of culvert influence): %	Regrade Potential (streambed US – streambed DS, in feet):

Dominant Substrate: ☐ sand (<.20") ☐ gravel (.20"–3") ☒ cobble (3"-12") ☐ boulder (>12") ☐ bedrock

Additional upstream information, habitat description, other site conditions or concerns, including potential regrade impacts relative to channel stability and habitat:

Downstream Habitat/Channel Description

Channel Slope: % (outside of culvert influence)

Additional downstream information, habitat description, other site conditions or concerns: **There are no other barriers downstream from Alder Creek Culvert #1.**

Correction Options and Preferred Alternative

Options to consider – Provide up to three site-appropriate correction alternatives.

Option 1: **Replace existing culvert with a modular bridge.**

Option 2: **Replace existing culvert with Super-Cor box culvert.**

Option 3: **Retro-fit existing culvert.**

Preferred alternative - Provide a one or two paragraph recommendation for this site. Include any site-specific concerns that will need to be addressed during design and construction: The preferred alternative is to replace the existing culvert with a modular bridge. However, CCNRD will have Reclamation assess the culvert to determine if the retro-fit alternative will work.

Cost Estimates

Rough cost estimate* - Attach detailed cost breakdown using the appropriate cost estimate template, provided separately.

Option 1: $148,543

Option 2: $131,892

Option 3: $39,874

* This is a rough approximation of project costs; actual costs may vary depending on specifications identified during final project design.

12b. Alder Creek Culvert #1 Alternative In-Stream Passage Cost Estimates					
IN-STREAM PASSAGE includes those items that affect or provide fish migration up and downstream to include road crossings (bridges and culverts), barriers (dams, log jams), fishways (ladders, chutes, pools), and log and rock weirs.					
Alternative 1 Replace existing culvert with Modular Bridge					
Item	**Unit**	**Qty.**	**Total Cost**	**Description Needed**	**Description (60 characters max.)**
Bridge	Each	1	72,000	Length/width	60x26
Carcass placement	Linear ft			Describe	
Culvert improvements	Each			Describe	
Dam removal	Each			Describe	
Debris removal	Each			Optional	
Diversion dam	Each			Size/material	
Fishway	Each	1	3,400	Length/width	120ft./24ft.
Log control (weir)	Each			Optional	
Mobilization	Lump sum		2,000	Optional	
Permits	Lump sum		7,000	Optional	
Rock control (weir)	Each	4	6,000	Optional	Grade control structures
Roughened channel	Linear ft	120	3,000	Describe	New streambed
Signage	Each		1,200	Describe	Construction signing
Site maintenance	Lump sum		1,000	Describe	Dust abatement
Traffic control	Lump sum		2,200	Describe	Flaggers as necessary
Utility crossing	Lump sum		1,000	Describe	Future utility extension
Water management	Lump sum		5,000	Describe	Stream diversion
Work site restoration	Acres	1	2,000	Describe	Re-vegetation
Sales Tax			**8,464**		
Sub-Total			**114,264**		
Architecture, Engineering, & Admin. (30% of Sub-Total)			**34,279**		
SRFB Request			**148,543**		
Match			**31,000**		
TOTAL COST			**179,143**		

Purchase of equipment is not an allowable cost.

Alternative 2 Replace existing culvert with Super-Cor box culvert					
Item	**Unit**	**Qty.**	**Total Cost**	**Description Needed**	**Description (60 characters max.)**
Super-Cor Bottomless Arch	Each	1	61,140	Length/width	50x24
Carcass placement	Linear ft			Describe	
Culvert improvements	Each			Describe	
Dam removal	Each			Describe	
Debris removal	Each			Optional	
Diversion dam	Each			Size/material	
Fishway	Each	1	3,400	Length/width	120ft./24ft.
Log control (weir)	Each			Optional	
Mobilization	Lump sum		2,000	Optional	Transport equipment
Permits	Lump sum		7,000	Optional	Design coordination
Rock control (weir)	Each	4	6,000	Optional	Grade control structures
Roughened channel	Linear ft	120	3,000	Describe	New streambed
Signage	Each		1,200	Describe	Construction signing
Site maintenance	Lump sum		1,000	Describe	Dust abatement
Traffic control	Lump sum		1,200	Describe	Flaggers as necessary
Utility crossing	Lump sum		1,000	Describe	Future utility extension
Water management	Lump sum		5,000	Describe	Stream diversion
Work site restoration	Acres	1	2,000	Describe	Re-vegetation
Sales Tax			**7515**		
Sub-Total			**101,455**		
Architecture, Engineering, & Admin. (30% of Sub-Total)			**30,436**		
SRFB Request			**131,892**		
Match			**31,000**		
TOTAL COST			**162,892**		

Purchase of equipment is not an allowable cost.

Alternative 3 Retrofit existing culvert					
Item	**Unit**	**Qty.**	**Total Cost**	**Description Needed**	**Description (60 characters max.)**
Retro-fit existing culverts	Each	1		Length/width	
Carcass placement	Linear ft			Describe	
Culvert improvements	Each			Describe	
Dam removal	Each			Describe	
Debris removal	Each			Optional	
Diversion dam	Each			Size/material	
Fishway	Each	1	3,400	Length/width	120ft./24ft.
Log control (weir)	Each			Optional	
Mobilization	Lump sum		2,000	Optional	Transport equipment
Permits	Lump sum		7,000	Optional	Design coordination
Rock control (weir)	Each	4	6,000	Optional	Grade control structures
Roughened channel	Linear ft	120	3,000	Describe	New streambed
Signage	Each		1,200	Describe	Construction signing
Site maintenance	Lump sum		2,200	Describe	Dust abatement
Utility crossing	Lump sum		1,000	Describe	Future utility extension
Water management	Lump sum		5,000	Describe	Stream diversion
Work site restoration	Acres	1	2,000	Describe	Re-vegetation
Sales Tax			**272**		
Sub-Total			**30,672**		
Architecture, Engineering, & Admin. (30% of Sub-Total)			**9,202**		
SRFB Request			**39,874**		
Match			**31,000**		
TOTAL COST			**70,874**		

This alternative would require a hydraulic analysis for review by the Chelan County Engineer before this option could be considered.