

Workbook Info

Project: Expert Panel 2015-2016 Primary Data Recorder: Nick Legg, Geomorphologist, Cardno Inc.  
Meeting: Upper Columbia Look Forward Latest Revision: 7/21/2016

Workbook Description

This workbook is the "Calculation Spreadsheet" used to capture planned actions and expected functional uplift during the Upper Columbia Look Forward meeting on June 21-23, 2016. This table was created in support of the biological notes taken in the same meeting, and contained in the spreadsheets (see below). The biological notes document the rationale underlying this spreadsheet.

Biological Notes Filenames:

Chinook UColumbia\_LookBack\_Chinook\_2013-18\_HabFunction\_Bionotes\_LookFWD\_QA\_7-21-2016.xlsx  
Steelhead UColumbia\_LookBack\_Steelhead\_2013-18\_HabFunction\_Bionotes\_LookFWD\_QA\_7-21-2016.xlsx

Sheets: Sheets are produced for individual Assessment Units and named by the Assessment Unit Code. For Assessment Units with no planned actions, a calculation sheet is generally not included. Weighting sheets were produced for Assessment Units where either weighting or low bookends were revised. The Okanogan panel members created a spreadsheet prior to the panel meeting which is included as a sheet for reference.

Highlights: Yellow highlights indicate places where additional data are required from the panel.

<i><b>Steelhead Assessment Units stream mileages - Streamnet Layer</b></i>			
AU Name	AU Code	Watershed Area (mi²)	Steelhead Stream Miles (StreamNet)
<u><b>Lower Entiat</b></u> <u><b>Mad River</b></u> <u><b>Middle Entiat</b></u> <u><b>Upper Middle Entiat</b></u> <u><b>Upper Entiat</b></u> <u><b>Beaver Creek</b></u> <u><b>Black Canyon</b></u> <u><b>Early Winters Creek</b></u> <u><b>Gold Creek</b></u> <u><b>Libby Creek</b></u> <u><b>Lower Chewuch</b></u> <u><b>Lower Methow</b></u> <u><b>Lower Twisp</b></u> <u><b>Middle Methow</b></u> <u><b>Upper-Middle Methow</b></u> <u><b>Upper Chewuch</b></u> <u><b>Upper Methow</b></u> <u><b>Lost River</b></u> <u><b>Upper Twisp</b></u> <u><b>Wolf Creek</b></u> <u><b>Chiwawa</b></u> <u><b>Chumstick</b></u> <u><b>Icicle</b></u>	ERS1	119.4	23
	ERS2	91.2	16.8
	ERS3A	50.3	12.2
	ERS3B	54.9	8.3
	ERS4	102.3	0
	MES1	129.3	9.2
	MES2	24.7	0.7
	MES3	80.4	4.5
	MES5A	89	14.8
	MES5B	44	3.7
	MES6	242.7	23.9
	MES7	135.4	29.2
	MES8	68.4	18.6
	MES9A	131.6	25.2
	MES9B	35.8	11.9
	MES10	280.3	26.1
	MES11A	177	28.5
	MES11B	167.8	7.4
	MES12	177	21.4
	MES13	40.4	3.1
	WES1	188.8	42.9
	WES2	78.1	7.2
	WES3	214.3	2.9

<i><b>Steelhead Assessment Units stream mileages - Streamnet Layer</b></i>			
AU Name	AU Code	Watershed Area (mi²)	Steelhead Stream Miles (StreamNet)
<u>Little Wenatchee</u>	WES4	101.3	9.5
<u>Lower Wenatchee</u>	WES5	110.7	29.5
<u>Mission</u>	WES6	93.3	22.6
<u>Nason</u>	WES7	106.4	27.7
<u>Peshastin</u>	WES8	134.9	23.6
<u>Middle Wenatchee</u>	WES9A	32.9	10.7
<u>Upper Wenatchee</u>	WES9B	95.5	26.8
<u>White</u>	WES10	156.2	19.5
<u>Loup Loup Creek</u>	ORS1	2.9	0.2
<u>Wells Pool (inundated- Confluence to Chilliwist Creek)</u>	ORS2A	130	15
<u>Okanogan River 01 (Chilliwist to Salmon)</u>	ORS2B	68.5	11.7
<u>Okanogan River 02 (Salmon Creek to Omak Creek)</u>	ORS3A	37.9	7.2
<u>Okanogan River 03 (Omak to Riverside)</u>	ORS3B	36.9	9.2
<u>Okanogan River 04 (Riverside to Janis Bridge)</u>	ORS3C	129.6	13.6
<u>Okanogan River 05 (Janis to Siwash Creek)</u>	ORS3D	22.2	7.4
<u>Lower Omak Creek (Mouth to Mission Falls)</u>	ORS4A	125.8	6.2
<u>Upper Omak Creek (Upstream from Mission Falls)</u>	ORS4B	77.5	21.6
<u>Lower Salmon Creek (OID to Mouth)</u>	ORS5A	3.4	4.1
<u>Upper Salmon Creek (OID to Conconully Dam)</u>	ORS5B	29.6	0
<u>Lower Similkameen (Confluence To Cross Channel)</u>	ORS6A	10.3	4.5
<u>Middle Similkameen (Cross Channel to Canyon)</u>	ORS6B	3.6	3
<u>Upper Similkameen (Canyon to Enloe Dam)</u>	ORS6C	13.9	2.4
<u>Chiliwist Creek</u>	ORS7A	0	0.3

<b><u>Steelhead Assessment Units stream mileages - Streamnet Layer</u></b>			
<b>AU Name</b>	<b>AU Code</b>	<b>Watershed Area (mi<sup>2</sup>)</b>	<b>Steelhead Stream Miles (StreamNet)</b>
<b><u>Wanacut Creek</u></b>	ORS7B	1.1	0.4
<b><u>Tunk Creek</u></b>	ORS7C	0.3	0.7
<b><u>Aeneas Creek</u></b>	ORS7D	0.7	0.2
<b><u>Bonaparte Creek</u></b>	ORS7E	0.6	1
<b><u>Siwash Creek</u></b>	ORS7F	0.7	1.8
<b><u>Lower Antoine Creek (Mouth to Rock chute)</u></b>	ORS7G	0.3	0.9
<b><u>Upper Antoine Creek (Rocks to Fancher Dam)</u></b>	ORS7H	0.9	2.1
<b><u>Wild Horse Spring Creek</u></b>	ORS7I	38.9	0
<b><u>Tonasket Creek</u></b>	ORS7J	2.1	1.4
<b><u>Nine Mile Creek</u></b>	ORS7K	12.6	1.1
<b><u>Okanogan River 06 (Siwash to Conf. with Similkameen)</u></b>	ORS8A	105.4	18.2
<b><u>Okanogan River 07 (Conf. with Similkameen to Z. Dam)</u></b>	ORS8B	9.6	3.8

<b><u>Chinook Assessment Units Stream mileages- Streamnet Layer</u></b>			
<b>AU Name</b>	<b>AU Code</b>	<b>Watershed Area (mi<sup>2</sup>)</b>	<b>Chinook Stream Miles (Stream Net)</b>
<b><u>Lower Entiat</u></b>	ERC1	119.4	16.8
<b><u>Mad River</u></b>	ERC2	91.2	9.1
<b><u>Middle Entiat</u></b>	ERC3A	50.3	11.6
<b><u>Upper Middle Entiat</u></b>	ERC3B	54.9	8.3
<b><u>Upper Entiat</u></b>	ERC4	102.3	0
<b><u>Beaver / Bear Creek</u></b>	MEC1	129.3	0
<b><u>Early Winters Creek</u></b>	MEC2	80.4	4.5
<b><u>Gold Creek</u></b>	MEC4A	89	6.6
<b><u>Libby Creek</u></b>	MEC4B	44	0.4
<b><u>Lower Chewuch</u></b>	MEC5	242.7	22.4
<b><u>Lower Methow</u></b>	MEC6A	135.4	28.7
<b><u>Black Canyon</u></b>	MEC6B	24.7	0
<b><u>Lower Twisp</u></b>	MEC7	68.4	13.5
<b><u>Middle Methow</u></b>	MEC8A	131.6	25.2
<b><u>Upper-Middle Methow</u></b>	MEC8B	35.8	10.8
<b><u>Upper Chewuch</u></b>	MEC9	280.3	24.3
<b><u>Upper Methow</u></b>	MEC10A	177	21.4
<b><u>Lost River</u></b>	MEC10B	167.8	7.4
<b><u>Upper Twisp</u></b>	MEC11	177	18.6
<b><u>Wolf Creek</u></b>	MEC12	40.4	3
<b><u>Chiwawa</u></b>	WEC1	188.8	39.1
<b><u>Chumstick</u></b>	WEC2	78.1	0
<b><u>Icicle</u></b>	WEC3	214.3	2.9
<b><u>Little Wenatchee</u></b>	WEC4	101.3	9.5
<b><u>Lower Wenatchee</u></b>	WEC5	110.7	26.4
<b><u>Mission</u></b>	WEC6	93.3	0.8

<i><b>Chinook Assessment Units Stream mileages- Streamnet Layer</b></i>			
AU Name	AU Code	Watershed Area (mi <sup>2</sup> )	Chinook Stream Miles (Stream Net)
<u><b>Nason</b></u> <u><b>Peshastin</b></u> <u><b>Middle Wenatchee</b></u> <u><b>Upper Wenatchee</b></u> <u><b>White</b></u>	WEC7	106.4	15.8
	WEC8	134.9	14.9
	WEC9A	32.9	10.7
	WEC9B	95.5	23.5
	WEC10	156.2	18.5

WEC7 Nason

Stream Miles of Fish Use (used as denominator)

15.8 mi

(used as denominator in uplift calculation)

WEC7 - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	15.8 mi.		
% Uplift	0.0%		

WEC7 - LF 3.1 (Primary Productivity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	15.8 mi.		
% Uplift	0.0%		

WEC7 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Upper White Pine (2018)	0.59	1%	0.0059
Total Project Length	0.59		0.0059
Total # Projects	1		
Total Stream Miles Affected	0.0059		
Total Stream Miles (Denominator)	15.8 mi.		
% Uplift	0.04%		

**WEC7 - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
YN Lower White Pine Groups 2 & 3 (2016)	0.15	100%	0.15
Upper White Pine alcove and side channels (2018)	0.019	100%	0.019
Total Project Length	0.169		0.169
Total # Projects	2		
Total Stream Miles Affected	0.169		
Total Stream Miles (Denominator)	10.7 mi.		Includes connected and disconnected side channels (reach assessment)
% Uplift	1.6%		

**WEC7 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Upper White Pine channel reconnect (2018)	0.45	100%	0.45
Total Project Length	0.45		0.45
Total # Projects	1		
Total Stream Miles Affected	0.45		
Total Stream Miles (Denominator)	15.8 mi.		
% Uplift	2.8%		

**WEC7 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Upper White Pine channel reconnect (2018)	0.53	100%	0.53
LWP Groups 2 and 3 (2016, does not include side channels)	0.25	100%	0.25
Total Project Length	0.78		0.78
Total # Projects	2		
Total Stream Miles Affected	0.78		
Total Stream Miles (Denominator)	15.8 mi.		
% Uplift	4.9%		



**WEC7 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	15.8 mi.		
% Uplift	0.0%		

**WEC7 - LF 8.1 (Water Quality: Temperature)**

Uplift from Flow Increase (LF 9.2)	No Actions
Prorating Factor	
% Uplift	0.0%

WEC9B Upper Wenatchee

Stream Miles of Fish Use (used as denominator)

23.5 mi

(used as denominator in uplift calculation)

WEC9B - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	23.5 mi.		
% Uplift	0.0%		

WEC9B - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	23.5 mi.		
% Uplift	0.0%		

WEC9B - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Meacham Flats (side channel, floodplain enhancement, and LWD additions; 2017)	0.2	100%	0.2
Total Project Length	0.2		0.2
Total # Projects	1		
Total Stream Miles Affected	0.2		
Total Stream Miles (Denominator)	3.55 mi.		Upper Wenatchee Reach Assessment estimate of side channel length in assessment unit
% Uplift	5.6%		

***WEC9B - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)***

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	23.5 mi.		
% Uplift	0.0%		

WES7 Nason

Stream Miles of Fish Use (used as denominator)

20.8 mi

(used as denominator in uplift calculation)

WES7 - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	20.8 mi.		
% Uplift	0.0%		

WES7 - LF 3.1 (Primary Productivity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	20.8 mi.		
% Uplift	0.0%		

WES7 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Upper White Pine (2018)	0.59	1%	0.0059
Total Project Length	0.59		0.0059
Total # Projects	1		
Total Stream Miles Affected	0.0059		
Total Stream Miles (Denominator)	20.8 mi.		
% Uplift	0.03%		

***WES7 - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)***

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
YN Lower White Pine Groups 2&3 (2016)	0.15	100%	0.15
Upper White Pine alcove and side channels (2018)	0.019	100%	0.019
Total Project Length	0.169		0.169
Total # Projects	2		
Total Stream Miles Affected	0.169		
Total Stream Miles (Denominator)	10.7 mi.		Includes connected and disconnected side channels (reach assessment/CMZ study)
% Uplift	1.6%		

***WES7 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)***

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Upper White Pine channel reconnect (2018)	0.45	100%	0.45
Total Project Length	0.45		0.45
Total # Projects	1		
Total Stream Miles Affected	0.45		
Total Stream Miles (Denominator)	20.8 mi.		
% Uplift	2.2%		

***WES7 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)***

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Upper White Pine channel reconnect (2018)	0.53	100%	0.53
LWP Groups 2 and 3 (2016, does not include side channels)	0.25	100%	0.25
Total Project Length	0.78		0.78
Total # Projects	2		
Total Stream Miles Affected	0.78		
Total Stream Miles (Denominator)	20.8 mi.		
% Uplift	3.8%		

**WES7 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	20.8 mi.		
% Uplift	0.0%		

**WES7 - LF 8.1(Water Quality: Temperature)**

Uplift from Flow Increase (LF 9.2)	No Actions
Prorating Factor	
% Uplift	0.0%

WES9B Upper Wenatchee

Stream Miles of Fish Use (used as denominator)

28.8 mi

(used as denominator in uplift calculation)

WES9B - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	28.8 mi.		
% Uplift	0.0%		

WES9B - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	28.8 mi.		
% Uplift	0.0%		

WES9B - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Meacham Flats (side channel, floodplain enhancement, and LWD additions; 2017)	0.2	100%	0.2
Total Project Length	0.2		0.2
Total # Projects	1		
Total Stream Miles Affected	0.2		
Total Stream Miles (Denominator)	3.55 mi.		Upper Wenatchee Reach Assessment estimate of side channel length in assessment unit
% Uplift	5.6%		

***WES9B - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)***

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	28.8 mi.		
% Uplift	0.0%		



ERC1

Lower Entiat

Stream Miles of Fish Use (used as denominator)

16.8 mi

(used as denominator in uplift calculation)

ERC1 - LF 2.3 (Injury and Mortality: Mechanical Injury)

Action	# Screens Removed	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
Roaring Creek screen (2016-17)	1	100%	100%	1	1
Total Project Length	1			1	1
Total # Projects	0				
Total # Screens Addressed (Weighted for 2018)	1				
Total # Screens Addressed (Weighted for 2033)	1				
Total unscreened diversions	1 #				
% Gap (difference between low and high bookend)	20.0%				
% Uplift (2018)	20.0%				
% Uplift (2033)	20.0%				

ERC1 - LF 3.1 (Food: Altered Primary Productivity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				

Total Stream Miles Affected (Weighted for 2033) 0  
Total Stream Miles (Denominator) 16.8 mi.

% Uplift (2018)	0.0%
% Uplift (2033)	0.0%

**ERC1 - LF 4.1 (Riparian Vegetation)**

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	16.8 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

**ERC1 - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)**

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Miles Affected (Weighted for 2018)	0				
Total Miles Affected (Weighted for 2033)	0				
Total Miles (Denominator)	16.8 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

**ERC1 - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Miles Affected (Weighted for 2018)	0				
Total Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	16.8 mi.		(Streamnet)		
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERC1 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	16.8 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERC1 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				

Total Stream Miles Affected (Weighted for 2033) 0  
Total Stream Miles (Denominator) 16.8 mi.

% Uplift (2018)	0.0%
% Uplift (2033)	0.0%

ERC1 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	16.8 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERC1 - LF 9.2 (Water Quantity: Decreased Water Quantity)

<u>Annual Amounts (cfs)</u>				
<u>Action</u>	<u>Permanent Acquisition</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Roaring Creek (2017-2018)		0	1	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
<b>Annual Average</b> ==>				0.7
Total	0.7 cfs			
Total # Projects	1			
Denominator	130 cfs	1996-2016 mean annual low flow		
<b>% Uplift (2018)</b>	<b>0.5%</b>			

ERC2

Mad River

Stream Miles of Fish Use (used as denominator)

9.1 mi

(used as denominator in uplift calculation)

ERC2 - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	9.1 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERC2 - LF 3.1 (Food: Altered Primary Productivity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	9.1 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

**ERC2 - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	9.1 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

**ERC2 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	9.1 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

**ERC2 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
Mad River LWD Meadow Project (2018)	0.3	100%	100%	0.3	0.3
Total Project Length	0.3			0.3	0.3
Total # Projects	1				

Total Stream Miles Affected (Weighted for 2018)0.3

Total Stream Miles Affected (Weighted for 2033)0.3

Total Stream Miles (Denominator)9.1 mi.

% Uplift (2018)	3.3%
% Uplift (2033)	3.3%

***ERC2 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)***

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	9.1 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERC3A

Middle Entiat

Stream Miles of Fish Use (used as denominator)

11.6 mi

(used as denominator in uplift calculation)

ERC3A - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	11.6 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERC3A - LF 3.1 (Food: Altered Primary Productivity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	11.6 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				



**ERC3A - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
Stormy ABC	0.36	1%	16%	0.0036	0.0576
Gray EF - Enlow Gray Reach					
Protection/Acquisition	0.15	1%	16%	0.0015	0.024
Total Project Length	0.36			0.0051	0.0816
Total # Projects	2				
Total Stream Miles Affected (Weighted for 2018)	0.0051				
Total Stream Miles Affected (Weighted for 2033)	0.0816				
Total Stream Miles (Denominator)	11.6 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.7%				

**ERC3A - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
Stormy ABC	1.85	100%	100%	1.85	1.85
Gray EF - Enlow Gray Reach					
Protection/Acquisition	0.84	100%	100%	0.84	0.84
Total Project Length	2.69			2.69	2.69
Total # Projects	2				
Total Miles Affected (Weighted for 2018)	2.69				
Total Miles Affected (Weighted for 2033)	2.69				
Total Stream Miles (Denominator)	11.6 mi.		(Streamnet)		
% Uplift (2018)	23.2%				
% Uplift (2033)	23.2%				

**ERC3A - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
Stormy ABC	1.85	100%	100%	1.85	1.85
Gray EF - Enlow Gray Reach Protection/Acquisition	0.84	100%	100%	0.84	0.84
Total Project Length	2.69			2.69	2.69
Total # Projects	2				

	mi.	
% Uplift (2018)	5.3%	Panel believes project closes AU gap, except for project area D, which equates to 20% of total AU length
% Uplift (2033)	5.3%	Panel believes project closes AU gap, except for project area D, which equates to 20% of total AU length

***ERC3A - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)***

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
Stormy ABC (67 structures)	1.85	100%	100%	1.85	1.85
Gray EF - Enlow Gray Reach Protection/Acquisition (36 structures)	0.84	100%	100%	0.84	0.84
Entiat 3D LWM Revisited (2016)	0.25	20%	20%	0.05	0.05
Total Project Length	2.94			2.74	2.74
Total # Projects	3				

Total Stream Miles Affected (Weighted for 2018)	2.74
Total Stream Miles Affected (Weighted for 2033)	2.74
Total Stream Miles (Denominator)	11.6 mi.

% Uplift (2018)	23.6%
% Uplift (2033)	23.6%

***ERC3A - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)***

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0

Total # Projects0

Total Stream Miles Affected (Weighted for 2018)0

Total Stream Miles Affected (Weighted for 2033)0

Total Stream Miles (Denominator)11.6 mi.

% Uplift (2018)	0.0%
% Uplift (2033)	0.0%

ERC3B

Upper Middle Entiat

Stream Miles of Fish Use (used as denominator)

8.3 mi

(used as denominator in uplift calculation)

ERC3B - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	8.3 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERC3B - LF 3.1 (Food: Altered Primary Productivity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	8.3 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

**ERC3B - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	8.3 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

**ERC3B - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
Stillwaters Signal Peak Side Channel (2017)	0.3	100%	100%	0.3	0.3
Upper Burns Riprap Enhancement (2017)	0.5	100%	100%	0.5	0.5
Total Project Length	0.8			0.8	0.8
Total # Projects	2				
Total Stream Miles Affected (Weighted for 2018)	0.8				
Total Stream Miles Affected (Weighted for 2033)	0.8				
Total Stream Miles (Denominator)	8.3 mi.				
% Uplift (2018)	9.6%				
% Uplift (2033)	9.6%				

**ERC3B - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				

Total Stream Miles Affected (Weighted for 2018)0

Total Stream Miles Affected (Weighted for 2033)0

Total Stream Miles (Denominator)8.3 mi.

% Uplift (2018)	0.0%
% Uplift (2033)	0.0%

Stream Miles of Fish Use (used as denominator)

23 mi

(used as denominator in uplift calculation)

ERS1 - LF 2.3 (Injury and Mortality: Mechanical Injury)

Action	# Screens Removed	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
Roaring Creek screen (2016-17)	1	100%	100%	1	1
Total Project Length				1	1
Total # Projects	0				
Total # Screens Addressed (Weighted for 2018)	1				
Total # Screens Addressed (Weighted for 2033)	1				
Total unscreened diversions	1 #				
% Gap (difference between low and high bookend)	20.0%				
% Uplift (2018)	20.0%				
% Uplift (2033)	20.0%				

ERS1 - LF 3.1 (Food: Altered Primary Productivity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	23 mi.				

% Uplift (2018)	0.0%
% Uplift (2033)	0.0%

ERS1 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	23 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERS1 - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Miles Affected (Weighted for 2018)	0				
Total Miles Affected (Weighted for 2033)	0				
Total Miles (Denominator)	23 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERS1 - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)



<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Miles Affected (Weighted for 2018)	0				
Total Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	23 mi.		(Streamnet)		
<b>% Uplift (2018)</b>	<b>0.0%</b>				
<b>% Uplift (2033)</b>	<b>0.0%</b>				

ERS1 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	23 mi.				
<b>% Uplift (2018)</b>	<b>0.0%</b>				
<b>% Uplift (2033)</b>	<b>0.0%</b>				

ERS1 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				

Total Stream Miles Affected (Weighted for 2033) 0  
Total Stream Miles (Denominator) 23 mi.

% Uplift (2018)	0.0%
% Uplift (2033)	0.0%

ERS1 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	23 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERS1 LF 9.2 (Water Quantity: Decreased Water Quantity)

Annual Amounts (cfs)				
Action	Permanent Acquisition	2016	2017	2018
Roaring Creek (2017-2018)		0	1	1
Total	0	0	1	1
Annual Average ==>				0.7
Total	0.7 cfs			
Total # Projects	1			
Denominator	130 cfs	1996-2016 mean annual low flow		
% Uplift (2018)	0.5%			

Stream Miles of Fish Use (used as denominator)

16.8 mi

(used as denominator in uplift calculation)

ERS2 - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	16.8 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERS2 - LF 3.1 (Food: Altered Primary Productivity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	16.8 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERS2 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	16.8 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERS2 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Action				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	16.8 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERS2 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
Mad River LWD Meadow Project (2018)	0.3	100%	100%	0.3	0.3
Total Project Length	0.3			0.3	0.3
Total # Projects	1				

Total Stream Miles Affected (Weighted for 2018)0.3

Total Stream Miles Affected (Weighted for 2033)0.3

Total Stream Miles (Denominator)16.8 mi.

% Uplift (2018)	1.8%
% Uplift (2033)	1.8%

ERS2 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	16.8 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERS3A Middle Entiat

Stream Miles of Fish Use (used as denominator)	12.2 mi	(used as denominator in uplift calculation)
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ERS3A - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Action Agency Projects				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	12.2 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERS3A - LF 3.1 (Food: Altered Primary Productivity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	12.2 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

**ERS3A - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
Stormy ABC	0.36	1%	16%	0.0036	0.0576
Gray EF - Enlow Gray Reach					
Protection/Acquisition	0.15	1%	16%	0.0015	0.024
Total Project Length	0.36			0.0051	0.0816
Total # Projects	1				
Total Stream Miles Affected (Weighted for 2018)	0.0051				
Total Stream Miles Affected (Weighted for 2033)	0.0816				
Total Stream Miles (Denominator)	12.2 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.7%				

**ERS3A - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 % Improvement (prorating factor)</u>	<u>2033 % Improvement (prorating factor)</u>	<u>Realized Change in 2018 (mi)</u>	<u>Realized Change in 2033 (mi)</u>
Stormy ABC	1.85	100%	100%	1.85	1.85
Gray EF - Enlow Gray Reach					
Protection/Acquisition	0.84	100%	100%	0.84	0.84
Total Project Length	2.69			2.69	2.69
Total # Projects	1				
Total Miles Affected (Weighted for 2018)	2.69				
Total Miles Affected (Weighted for 2033)	2.69				
Total Stream Miles (Denominator)	12.2 mi.		(Streamnet)		
% Uplift (2018)	22.0%				
% Uplift (2033)	22.0%				

**ERS3A - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 %</u>	<u>2033 %</u>	<u>Realized Change</u> <u>in 2018 (mi)</u>	<u>Realized Change</u> <u>in 2033 (mi)</u>
		<u>Improvement</u> <u>(prorating factor)</u>	<u>Improvement</u> <u>(prorating factor)</u>		
Stormy ABC	1.85	100%	100%	1.85	1.85
Gray EF - Enlow Gray Reach					
Protection/Acquisition	0.84	100%	100%	0.84	0.84
Total Project Length	2.69			2.69	2.69
Total # Projects	2				

<b>% Uplift (2018)</b>	<b>5.3%</b>
<b>% Uplift (2033)</b>	<b>5.3%</b>

Panel believes project closes AU gap, except for project area D, which equates to 20% of total AU length

Panel believes project closes AU gap, except for project area D, which equates to 20% of total AU length

***ERS3A - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)***

<u>Action</u>	<u>Miles treated</u>	<u>2018 %</u>	<u>2033 %</u>	<u>Realized Change</u> <u>in 2018 (mi)</u>	<u>Realized Change</u> <u>in 2033 (mi)</u>
		<u>Improvement</u> <u>(prorating factor)</u>	<u>Improvement</u> <u>(prorating factor)</u>		
Stormy ABC (67 structures)	1.85	100%	100%	1.85	1.85
Gray EF - Enlow Gray Reach					
Protection/Acquisition (36 structures)	0.84	100%	100%	0.84	0.84
Entiat 3D LWM Revisited (2016)	0.25	20%	20%	0.05	0.05
Total Project Length	2.94			2.74	2.74
Total # Projects	3				

Total Stream Miles Affected (Weighted for 2018)	2.74
Total Stream Miles Affected (Weighted for 2033)	2.74
Total Stream Miles (Denominator)	12.2 mi.

<b>% Uplift (2018)</b>	<b>22.5%</b>
<b>% Uplift (2033)</b>	<b>22.5%</b>

***ERS3A - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)***

<u>Action</u>	<u>Miles treated</u>	<u>2018 %</u>	<u>2033 %</u>	<u>Realized Change</u> <u>in 2018 (mi)</u>	<u>Realized Change</u> <u>in 2033 (mi)</u>
		<u>Improvement</u> <u>(prorating factor)</u>	<u>Improvement</u> <u>(prorating factor)</u>		
No Actions				0	0



Total Project Length	<div><div></div><div>0</div></div>	<div><div></div><div>0</div></div>
Total # Projects	<div><div></div><div>0</div></div>	<div><div></div><div>0</div></div>
Total Stream Miles Affected (Weighted for 2018)	<div><div></div><div>0</div></div>	
Total Stream Miles Affected (Weighted for 2033)	<div><div></div><div>0</div></div>	
Total Stream Miles (Denominator)	<div><div></div><div>12.2 mi.</div></div>	
% Uplift (2018)	<div><div></div><div>0.0%</div></div>	
% Uplift (2033)	<div><div></div><div>0.0%</div></div>	

ERS3B

Upper Middle Entiat

Stream Miles of Fish Use (used as denominator)

8.3 mi

(used as denominator in uplift calculation)

ERS3B - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	8.3 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

ERS3B - LF 3.1 (Food: Altered Primary Productivity)

Action	Miles treated	2018 % Improvement (prorating factor)	2033 % Improvement (prorating factor)	Realized Change in 2018 (mi)	Realized Change in 2033 (mi)
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	8.3 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

**ERS3B - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 %</u>	<u>2033 %</u>	<u>Realized Change</u> <u>in 2018 (mi)</u>	<u>Realized Change</u> <u>in 2033 (mi)</u>
		<u>Improvement</u> <u>(prorating factor)</u>	<u>Improvement</u> <u>(prorating factor)</u>		
No Actions				0	0
Total Project Length	0			0	0
Total # Projects	0				
Total Stream Miles Affected (Weighted for 2018)	0				
Total Stream Miles Affected (Weighted for 2033)	0				
Total Stream Miles (Denominator)	8.3 mi.				
% Uplift (2018)	0.0%				
% Uplift (2033)	0.0%				

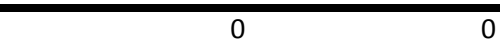
**ERS3B - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 %</u>	<u>2033 %</u>	<u>Realized Change</u> <u>in 2018 (mi)</u>	<u>Realized Change</u> <u>in 2033 (mi)</u>
		<u>Improvement</u> <u>(prorating factor)</u>	<u>Improvement</u> <u>(prorating factor)</u>		
Stillwaters Signal Peak Side Channel (2017)	0.3	100%	100%	0.3	0.3
Upper Burns Riprap Enhancement (2017)	0.5	100%	100%	0.5	0.5
Total Project Length	0.8			0.8	0.8
Total # Projects	2				
Total Stream Miles Affected (Weighted for 2018)	0.8				
Total Stream Miles Affected (Weighted for 2033)	0.8				
Total Stream Miles (Denominator)	8.3 mi.				
% Uplift (2018)	9.6%				
% Uplift (2033)	9.6%				

**ERS3B - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)**

<u>Action</u>	<u>Miles treated</u>	<u>2018 %</u>	<u>2033 %</u>	<u>Realized Change</u> <u>in 2018 (mi)</u>	<u>Realized Change</u> <u>in 2033 (mi)</u>
		<u>Improvement</u> <u>(prorating factor)</u>	<u>Improvement</u> <u>(prorating factor)</u>		
No Actions				0	0

Total Project Length		0
Total # Projects		0
Total Stream Miles Affected (Weighted for 2018)		0
Total Stream Miles Affected (Weighted for 2033)		0
Total Stream Miles (Denominator)		8.3 mi.
% Uplift (2018)		0.0%
% Uplift (2033)		0.0%



**Okanogan AU Weight Revisions (see table to right for Johnson Creek Limiting Factor Weights)**

AU Code	AU Name	AU Weight	Revised AU Weight
ORS1	Loup Loup Creek	2.61%	
ORS2A	Wells Pool (inundated- Confluence to Chilliwist Creek)	0.45%	
ORS2B	Okanogan River 01 (Chilliwist to Salmon)	0.45%	
ORS3A	Okanogan River 02 (Salmon Creek to Omak Creek)	0.45%	
ORS3B	Okanogan River 03 (Omak to Riverside)	0.45%	
ORS3C	Okanogan River 04 (Riverside to Janis Bridge)	0.45%	
ORS3D	Okanogan River 05 (Janis to Siwash Creek)	0.45%	
ORS4A	Lower Omak Creek (Mouth to Mission Falls)	11.95%	
ORS4B	Upper Omak Creek (Upstream from Mission Falls)	26.39%	22.39%
ORS5A	Lower Salmon Creek (OID to Mouth)	7.54%	
ORS5B	Upper Salmon Creek (OID to Conconully Dam)	20.31%	
ORS6A	Lower Similkameen (Confluence To Cross Channel)	8.03%	
ORS6B	Middle Similkameen (Cross Channel to Canyon)	6.04%	
ORS6C	Upper Similkameen (Canyon to Enloe Dam)	0.45%	
ORS7A	Chiliwist Creek	0.45%	
ORS7B	Wanacut Creek	1.09%	
ORS7C	Tunk Creek	0.75%	
ORS7D	Aeneas Creek	0.45%	
ORS7E	Bonaparte Creek	2.18%	
ORS7F	Siwash Creek	1.71%	
ORS7G	Lower Antoine Creek (Mouth to Rock chute)	1.24%	
ORS7H	Upper Antoine Creek (Rocks to Fancher Dam)	0.45%	
ORS7I	Wild Horse Spring Creek	0.62%	
ORS7J	Tonasket Creek	2.05%	
ORS7K	Nine Mile Creek	2.09%	
ORS8A	Okanogan River 06 (Siwash to Confluence with Similkameen)	0.45%	
ORS8B	Okanogan River 07 (Confluence with Similkameen to Z. Dam)	0.45%	
NEW ORS9A	Johnson Creek		4.00%

Johnson Creek Limiting Factors	Weights	Low Bookends
1.1	50.0%	20
6.2	20.0%	67
7.2	20.0%	67
9.2	10.0%	39

This calculation sheet for the Okanogan was created by the panel prior to the Look Back meeting. The main calculation tables generally take precedence over the calculations in this sheet, except when specific calculations indicate "See Panel's Worksheet," which include calculations for ORS1 (LF 9.2), ORS4B (LF 7.2), ORS5A (LF 9.2), ORS5B (LFs 4.1, 7.2), and ORS9A (9.2). The remainder of calculations below are provided for the administrative record, but do not necessarily reflect the final uplift calculation by the panel.

AUCode	Assessment Unit	2012StandardizedLF	Project 1	Project 1 Completed CY	Metric Value	Estimating method	Denominator	% improvement	Questions	Reccomendation
ORS1	Loup Loup Creek	9.2: Water Quantity: Decreased Water Quantity	irrigation canal lining	2018	1-10 cfs, depending on time of year	Average stream flows ranged from 1-200 CFS, Therefore adding 1-10 CFS could improve stream flow between 5 and 50%, EDT shows survival impact of 16% from flow conditions.			Should this be rated on 20% min or max benefits.	Uplift to high bookend (70%)
ORS3C	Okanogan River 04 (Riverside to Janis Bridge)	4.1: Riparian Condition: Riparian Vegetation	Planting of side channel/floodplain habitat		3200	EP set low bookend at 55%, treating 0.6 miles of one bank in a 12.11 mile long DU. Improving habitat by 2.5% benefits would not occur until vegetation matures in 2033.		0		0% in near term and 2.5% in long term
ORS3C	Okanogan River 04 (Riverside to Janis Bridge)	6.1: Channel Structure and Form: Bed and Channel Form		2015	1400	Not an action agency project		0		
ORS3D	Okanogan River 05 (Janis to Siwash Creek)	2.3: Injury and Mortality: Mechanical Injury	irrigation diversion screening	2018	2	Screening improvements evaluated based upon 130 screens, Improvement % of the % between current and bookend(not yet calculated)		1.54%		1.54% of degraded amount
ORS8A	Okanogan River 06 (Siwash to Confluence with Similkameen)	4.1: Riparian Condition: Riparian Vegetation	riparian planting	2017	0.75	Lesamiz Project: EP set low bookend at 25%, treating 0.75 miles of one bank in a 16.48 mile long DU would treat 2.25% of the DU but benefits would not occur until vegetation matures in 2033.		0		0% in near term and 2.25% in long term
ORS8A	Okanogan River 06 (Siwash to Confluence with Similkameen)	7.2: Sediment Conditions: Increased Sediment Quantity	Bio engineering/bank stabilization	2017	1.5	Lesamiz Project: According to EDT analysis sediment impacts to survival are 12% in this DU. This project would treat 1.5 mile on one bank out of 16.48 miles in this reach or 3% of the DU.		3%		See Calculation Spreadsheet

ORS4B	Upper Omak Creek (Upstream from Mission Falls)	7.2: Sediment Conditions: Increased Sediment Quantity	Road decommissioning	2016	5	Very high road density in this watershed. To evaluate benefits you need to know what the road density is in terms of miles and divid the project length by this impact. Miles treated/over total miles of roads in this drainage. Benefits from sediment projects would only occur in out-years EP spreadsheet sets low bookend at 80% with an expected benefit of 5% by 2018.	Specifc location information needed to determine if benefits would occur with the current anadromous fish 0.014% distribution.	Road density (4.5 mi per sq. mi., PFC is 2 mi/sq. mi equates to 352 miles of road that need addressing. Divided addressed roads by predicted total.
ORS5B	Upper Salmon Creek (OID to Conconully Dam)	4.1: Riparian Condition: Riparian Vegetation	riparian planting	2015	1	EP spreadsheet sets the low bookend at 80% with no anticipated benefits before 2018. Typically these benefits are based upon the length of stream bank treated divided by the 2x the stream length of the treated DU. (0.03 mi/26.75 mi)	How long is the treated 0 stream bank?	No Measureable Benefit
ORS5B	Upper Salmon Creek (OID to Conconully Dam)	7.2: Sediment Conditions: Increased Sediment Quantity	Bio engineering/bank stabilization	2017	1000	Sediment conditions in 2013 were funtioning at 74% of template condition. EP spreadsheet shows sediment condition funtioning at 80%. Should consider sinking up these values by adjusting the bookends. 0.19 miles treated/26.52 miles of banks	Should this length be used for the riparian 0.72% planting as well?	0.72%
ORS5B	Upper Salmon Creek (OID to Conconully Dam)	9.2: Water Quantity: Decreased Water Quantity	Upgrade water diversion to upper salmon creek reservoir	2018		This project would replace water lease program and is a substitution for this onging work not additive	Ask Keith is this is 0 Correct?	0%
ORS6A	Lower Similkameen (Conflunce to Cross Channel)	6.2: Channel Structure and Form: Instream Structural Complexity	In-stream structure/log jam	2018	1	EP panel shows low bookend of 70% function and a change of 5% occuring by 2018 from this project	5%	5%
ORS6A	Lower Similkameen (Conflunce to Cross Channel)	7.2: Sediment Conditions: Increased Sediment Quantity	Bio engineering/bank stabilization	2018	1000	Low Bookend set at 70% function this project would treat 0.19 miles of stream bank out of at 4.12 mile long DU.	2.31%	3%
ORS7K	Nine Mile Creek	6.1: Channel Structure and Form: Bed and Channel Form	regrading of the lower portion of the creek to abate gravel aggradation	2016	0.32	Not sure how this would improve summer steelhead habitat seems like more of an infrastructure support project?	0	No benefit due to maintenance of existing condition.

ORS9A (NEW AU)	Johnson Creek	9.2: Water Quantity: Decreased Water Quantity	Irrigation canal lining	2018	2
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Average winter stream flows are around 1 CFS so adding 1-2 CFS would vastly improve overwinter conditions. During 25% of the year would improve survival benefits by up to 50%. Existing EDT analysis indicates flow conditions are functioning at 79%.

The Johnson Creek DU needs to be added to the 11% EP spreadsheets.



ORS1 Loup Loup Creek

Stream Miles of Fish Use (used as denominator)

0.2 mi

(used as denominator in uplift calculation)

ORS1 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	0.2 mi.		
% Uplift	0.0%		

ORS1 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	0.2 mi.		
% Uplift	0.0%		

ORS1 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	0.2 mi.		
% Uplift	0.0%		

ORS1 - LF 9.2 (Water Quantity: Decreased Water Quantity)

<u>Action</u>	<u>Permanent Acquisition</u>	<u>Annual Amounts (cfs)</u>							
		<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	
See Panel's worksheet									
<b>Total</b>	0	0	0	0	0	0	0	0	
		<b>Annual Average ==&gt;</b>			0.0				
Total	0.0 cfs								
Total # Projects	0								
Denominator	cfs	Example: Base Flow							
<b>% Uplift (2018)</b>	<b>20.0%</b>								

**ORS4B**    **Upper Omak Creek (Upstream from Mission Falls)**

Stream Miles of Fish Use (used as denominator)

26.1 mi

(used as denominator in uplift calculation)

**ORS4B - LF 1.1 (Anthropogenic Barriers)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	26.1 mi.		
% Uplift	0.0%		

**ORS4B - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	26.1 mi.		
% Uplift	0.0%		

**ORS4B - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	26.1 mi.		
% Uplift	0.0%		

**ORS4B - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	26.1 mi.		
% Uplift	0.0%		

**ORS4B - LF 7.1 (Sediment Conditions: Decreased Sediment Quantity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	26.1 mi.		
% Uplift	0.0%		

**ORS4B - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)**

See Panel's spreadsheet	
% Uplift	1.40%

**ORS4B - LF 8.1 (Water Quality: Temperature)**

Uplift from Flow Increase (LF 9.2)	No Actions
Prorating Factor	
% Uplift	0.0%

**ORS4B - LF 9.2 (Water Quantity: Decreased Water Quantity)**

	<u>Permanent Acquisition</u>	<u>Annual Amounts (cfs)</u>		
<u>Action</u>		<u>2016</u>	<u>2017</u>	<u>2018</u>
No Actions				

Total



Annual Average ==>

0.0

Total

0.0 cfs

Total # Projects

0

Denominator

cfs

Example: Base Flow

% Uplift (2018)



**ORS5A**    **Lower Salmon Creek (OID to Mouth)**

Stream Miles of Fish Use (used as denominator)	93 mi	(used as denominator in uplift calculation)
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**ORS5A - LF 1.1 (Anthropogenic Barriers)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	93 mi.		
% Uplift	0.0%		

**ORS5A - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	93 mi.		
% Uplift	0.0%		

**ORS5A - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

Action	Miles treated	<div>% Improvement (proration factor)</div>	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	93 mi.		
% Uplift	0.0%		

**ORS5A - LF 8.1 (Water Quality: Temperature)**

Uplift from Flow Increase (LF 9.2)      No Actions  
Prorating Factor

% Uplift	0.0%
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**ORS5A - LF 9.2 (Water Quantity: Decreased Water Quantity)**

Okanogan Irrigation District (50-year lease)

1,800 ac-ft

% Uplift (2018)	18.75%
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0.1875

**ORS5B**    **Upper Salmon Creek (OID to Conconully Dam)**

Stream Miles of Fish Use (used as denominator)

13.26 mi

(used as denominator in uplift calculation)

**ORS5B - LF 1.1 (Anthropogenic Barriers)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	13.26 mi.		
% Uplift	0.0%		

**ORS5B - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
See panel worksheet, no measurable benefit			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	13.26 mi.		
% Uplift	0.0%		

**ORS5B - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	13.26 mi.		
% Uplift	0.0%		



**ORS5B - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	13.26 mi.		
% Uplift	0.0%		

**ORS5B - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
See Panel's Worksheet			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	13.26 mi.		
% Uplift	0.7%		

**ORS5B - LF 9.2 (Water Quantity: Decreased Water Quantity)**

Okanogan Irrigation District (50-year lease)	1,800 ac-ft
% Uplift (2018)	20.25%

ORS6A

Lower Similkameen (Confluence To Cross Channel)

Stream Miles of Fish Use (used as denominator)

4.5 mi

(used as denominator in uplift calculation)

ORS6A - LF 2.1: Injury and Mortality: Predation

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No actions			0
			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	0.0%		

ORS6A - LF 2.3 (Injury and Mortality: Mechanical Injury)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No actions			0
			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	0.0%		

ORS6A - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No actions			0
			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		

Total Stream Miles (Denominator) 4.5 mi.

% Uplift 0.0%

ORS6A - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No actions			0
			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		

% Uplift 0.0%

ORS6A - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No actions			0
			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		

% Uplift 0.0%

ORS6A - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
See panel's worksheet			0
			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		

**% Uplift**

**2.3%**

**ORS6A - LF 8.1(Water Quality: Temperature)**

Uplift from Flow Increase (LF 9.2)

No Actions

Prorating Factor

## % Uplift

0.0%

**ORS8A Okanogan River 06 (Siwash to Confluence with Similkameen)**

Stream Miles of Fish Use (used as denominator)

16.48 mi

(used as denominator in uplift calculation)

ORS8A - LF 1.1 (Anthropogenic Barriers)			
Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	16.48 mi.		
% Uplift	0.0%		

ORS8A - LF 2.3 (Injury and Mortality: Mechanical Injury)			
Action	# Screens Treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total # Screens Addressed	0		
Total Unscreened Diversions in AU (Denominator)	mi.		
% Uplift	#VALUE!		

ORS8A - LF 4.1 (Riparian Vegetation)			
Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	16.48 mi.		
% Uplift	0.0%		

**ORS8A - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	16.48 mi.		
<b>% Uplift</b>	<b>0.0%</b>		

**ORS8A - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	16.48 mi.		
<b>% Uplift</b>	<b>0.0%</b>		

**ORS8A - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	16.48 mi.		
<b>% Uplift</b>	<b>0.0%</b>		

**ORS8A - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0

Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected	0	
Total Stream Miles (Denominator)	16.48 mi.	
<b>% Uplift</b>	<b>0.0%</b>	

**ORS8A - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Lesamiz Project Bioengineering and Livestock Exclusion (2017)	1.5	30%	0.45
Total Project Length	1.5		0.45
Total # Projects	0		
Total Stream Miles Affected	0.45		
Total Stream Miles (Denominator)	16.48 mi.		
<b>% Uplift</b>	<b>2.7%</b>		

**ORS8A - LF 8.1 (Water Quality: Temperature)**

Uplift from Flow Increase (LF 9.2)	No Actions
Prorating Factor	
<b>% Uplift</b>	<b>0.0%</b>

**ORS8A - LF 9.2 (Water Quantity: Decreased Water Quantity)**

<u>Action</u>	<u>Permanent Acquisition</u>	<u>Annual Amounts (cfs)</u>			
		<u>2016</u>	<u>2017</u>	<u>2018</u>	
No Actions					
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>Annual Average ==&gt;</b>					<b>0.0</b>
Total	0.0 cfs				
Total # Projects	0				
Denominator	cfs				Example: Base Flow
<b>% Uplift (2018)</b>	<b>0.0%</b>				

ORS9A

Johnson Creek

(NEW ASSESSMENT UNIT)

Stream Miles of Fish Use (used as denominator)

9.9 mi

(used as denominator in uplift calculation)

ORS9A - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Edwards Street Culvert and Gabion Removal (2016)	3.7	25%	0.925
Duck Lake Diversion (2016)	6.2	25%	1.55
Total Project Length	9.9		2.475
Total # Projects	2		
Total Stream Miles Affected	2.475		
Total Stream Miles (Denominator)	9.9 mi.		
% Uplift	25.0%		

ORS9A - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.9 mi.		
% Uplift	0.0%		

ORS9A - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.9 mi.		
% Uplift	0.0%		

ORS9A - LF 9.2 (Water Quantity: Decreased Water Quantity)

Action	Permanent Acquisition	Annual Amounts (cfs)						
		2012	2013	2014	2015	2016	2017	2018



See Panel's worksheet

Total



Total

0.0 cfs

Total # Projects

#REF!

Denominator

cfs

Example: Base Flow

% Uplift (2018)

11.0%

Annual Average ==> 0.0

MEC1 Beaver Creek

Stream Miles of Fish Use (used as denominator)

9.45 mi

(used as denominator in uplift calculation)

MEC1 - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Frazer Creek Barriers (2016, ten barriers)	2.5	0%	0
WDFW/Maltais Diversion	2	0%	0
Stokes Bridge Culvert to Bridge	6.7	5%	0.335
Total Project Length	11.2		0.335
Total # Projects	3		
Total Stream Miles Affected	0.335		
Total Stream Miles (Denominator)	9.45 mi.		
% Uplift	3.5%		

Outside Chinook use  
Outside Chinook use

MEC1 - LF 2.3 (Injury and Mortality: Mechanical Injury)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.45 mi.		
% Uplift	0.0%		

MEC1 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.45 mi.		

% Uplift

0.0%

***MEC1 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)***

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.45 mi.		

% Uplift

0.0%

***MEC1 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)***

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.45 mi.		

% Uplift

0.0%

***MEC1 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)***

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.45 mi.		

% Uplift

0.0%

**MEC1 - LF 8.1 (Water Quality: Temperature)**

Uplift from Flow Increase (LF 9.2)  
Prorating Factor

No Actions

**% Uplift**

**0.0%**

**MEC1 - LF 9.2 (Water Quantity: Decreased Water Quantity)**

<u>Annual Amounts (cfs)</u>				
<u>Action</u>	<u>Permanent Acquisition</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
No Actions				
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Annual Average ==&gt;</b>				<b>0.0</b>
Total	0.0 cfs			
Total # Projects	0			
Denominator	cfs	Example: Base Flow		
<b>% Uplift (2018)</b>	<b>#DIV/0!</b>			

MEC2 Early Winters Creek

Stream Miles of Fish Use (used as denominator)

4.5 mi

(used as denominator in uplift calculation)

MEC2 - LF 3.1 (Primary Productivity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	0.0%		

MEC2 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	0.0%		

MEC2 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Early Winters 20 below Large Wood (2017)	0.1	50%	0.05
Total Project Length	0.1		0.05
Total # Projects	1		
Total Stream Miles Affected	0.05		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	1.1%		

MEC2 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	0.0%		

MEC2 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Early Winters 20 below Large Wood (2017)	0.1	50%	0.05
Total Project Length	0.1		0.05
Total # Projects	1		
Total Stream Miles Affected	0.05		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	1.1%		

MEC2 - LF 9.2 (Water Quantity: Decreased Water Quantity)

Action	Permanent Acquisition	Annual Amounts (cfs)		
		2016	2017	2018
No Actions				
Total	0	0	0	0
Annual Average ==>				0.0
Total	0.0 cfs			
Total # Projects	0			
Denominator	cfs			
% Uplift (2018)	0.0%			

Example: Base Flow

MEC5 Lower Chewuch

Stream Miles of Fish Use (used as denominator)

22.4 mi

(used as denominator in uplift calculation)

MEC5 - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	22.4 mi.		
% Uplift	0.0%		

MEC5 - LF 3.1 (Primary Productivity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	22.4 mi.		
% Uplift	0.0%		

MEC5 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	22.4 mi.		
% Uplift	0.0%		

**MEC5 - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)**

<u>Action</u>	<u>Side Channel Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Chewuch RM 15.5-17	0.5	100%	0.5
Chewuch RM 17-20	0.2	50%	0.1
Total Project Length	0.7		0.6
Total # Projects	2		
Total Miles Affected	0.6		
Total Side Channel Miles (Denominator)	9.8 mi.		Bureau of Reclamation Tributary Assessment Geodatabase
% Uplift	6.1%		

**MEC5 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Chewuch RM 15.5-17 (2017)	1.5	30%	0.45
Chewuch RM 17-20 (2017)	3	30%	0.9
Total Project Length	4.5		1.35
Total # Projects	2		
Total Stream Miles Affected	1.35		
Total Stream Miles (Denominator)	22.4 mi.		
% Uplift	6.0%		

**MEC5 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Chewuch RM 15.5-17 (2017)	1.5	20%	0.3
Chewuch RM 17-20 (2017)	3	15%	0.45
Total Project Length	4.5		0.75
Total # Projects	2		
Total Stream Miles Affected	0.75		
Total Stream Miles (Denominator)	22.4 mi.		
% Uplift	3.3%		

**MEC5 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)**



<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	22.4 mi.		
<b>% Uplift</b>	<b>0.0%</b>		

**MEC5 - LF 8.1 (Water Quality: Temperature)**

Uplift from Flow Increase (LF 9.2)	No Actions
Prorating Factor	
<b>% Uplift</b>	<b>0.0%</b>

**MEC5 - LF 9.2 (Water Quantity: Decreased Water Quantity)**

<u>Action</u>	<u>Permanent Acquisition</u>	<u>Annual Amounts (cfs)</u>		
		<u>2016</u>	<u>2017</u>	<u>2018</u>
No Actions				
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Annual Average ==&gt;</b>				<b>0.0</b>
Total	0.0 cfs			
Total # Projects	0			
Denominator	cfs	Example: Base Flow		
<b>% Uplift (2018)</b>	<b>#DIV/0!</b>			

MEC7 Lower Twisp

Stream Miles of Fish Use (used as denominator)

13.5 mi

(used as denominator in uplift calculation)

MEC7 - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
MVID-West Push Up Dam	9.1	25%	2.275
Total Project Length	9.1		2.275
Total # Projects	1		
Total Stream Miles Affected	2.275		
Total Stream Miles (Denominator)	13.5 mi.		
% Uplift	16.9%		

MEC7 - LF 2.3 (Injury and Mortality: Mechanical Injury)

Action	# Screens	% Improvement (proration factor)	Realized Change in 2018 (#)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total # Screens Addressed	0		
Total Unscreened Diversions	#		
Gap % (High - Low Bookend)			
% Uplift	0.0%		

MEC7 - LF 3.1 (Primary Productivity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	13.5 mi.		
% Uplift	0.0%		

**MEC7 - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Twisp River Floodplain Phase I (2016)	0.75	3%	0.0225
Twisp Ponds Left Bank Side Channel (2016)	0.26	3%	0.0078
Twisp River Horseshoe Side Channel (2017)	0.1	2%	0.002
Devaney (Colville Tribe) Riparian Exclusion (2016)	1	3%	0.03
Total Project Length	2.11		0.0623
Total # Projects	4		
Total Stream Miles Affected	0.0623		
Total Stream Miles (Denominator)	13.5 mi.		
% Uplift	0.5%		

**MEC7 - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Twisp River Floodplain Phase I (2016)	0.75	100%	0.75
Twisp Ponds Left Bank Side Channel (2016)	0.26	100%	0.26
Twisp River Horseshoe Side Channel (2017)	0.1	100%	0.1
Newby Narrows Side Channel (2016)	0.2	100%	0.2
Total Project Length	1.31		1.31
Total # Projects	4		
Total Stream Miles Affected	1.31		
Total Side Channel Miles (Denominator)	15.5 mi.		2008 Tributary Assessment
% Uplift	8.5%		

**MEC7 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Twisp River Floodplain Phase I (2016)	0.4	63%	0.25
Twisp Ponds Left Bank Side Channel (2016)	0.26	40%	0.104
Twisp River Horseshoe Side Channel (2017)	0.2	30%	0.06
Lower Twisp Large Wood (2017)	1	10%	0.1
Newby Narrows Side Channel (2016)	0.8	70%	0.56
Total Project Length	2.66		1.074
Total # Projects	5		

Total Stream Miles Affected 1.074  
Total Stream Miles (Denominator) 13.5 mi.

% Uplift 8.0%

MEC7 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Twisp River Floodplain Phase I (2016)	0.65	65%	0.4225
Twisp Ponds Left Bank Side Channel (2016)	0.26	5%	0.013
Lower Twisp Large Wood (2017)	1	30%	0.3
Newby Narrows Side Channel (2016)	0.8	70%	0.56
Total Project Length	2.71		1.2955
Total # Projects	4		

Total Stream Miles Affected 1.2955  
Total Stream Miles (Denominator) 13.5 mi.

% Uplift 9.6%

MEC7 - LF 8.1 (Water Quality: Temperature)

Uplift from Flow Increase (LF 9.2) 10.5%  
Prorating Factor 5%

% Uplift 0.5%

MEC7- LF 9.2 (Water Quantity: Decreased Water Quantity)

Action	Permanent Acquisition	Annual Amounts (cfs)		
		2016	2017	2018
MVID West	11	11	11	11
Aspen Meadows	2	0	2	2
Poorman Creek	1.5	1.5	1.5	1.5
Total	13	12.5	14.5	14.5

Total 13.8 cfs  
Total # Projects 3  
Denominator 43 cfs  
Prorating Factor Based on Affected Stream Miles 33%

Annual Average ==> 13.8

See Look Back

% Uplift (2018)	10.5%
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MEC8A Middle Methow

Stream Miles of Fish Use (used as denominator)	25.2 mi	(used as denominator in uplift calculation)
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MEC8A - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Barkley Bear (2016)	0.19	100%	0.19
Total Project Length	0.19		0.19
Total # Projects	1		
Total Stream Miles Affected	0.19		
Total Stream Miles (Denominator)	25.2 mi.		
% Uplift	0.8%		

MEC8A - LF 2.3 (Injury and Mortality: Mechanical Injury)

Action	# Screens	% Improvement (proration factor)	Realized Change in 2018 (#)
Barkley Irrigation (2016)	1	100%	1
Total Project Length	1		1
Total # Projects	0		
Total # Screens Addressed	1		
Total Unscreened Diversions	1 #		
Gap % (High - Low Bookend)	14%		
% Uplift	13.5%		

MEC8A - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Barkley Bear Habitat Enhancement (2016)	0.75	3%	0.0225
Lawson Fencing Project (2016)	0.25	3%	0.0075

Silver Side Channel (2016)	0.38	3%	0.0114
Total Project Length	1.38		0.0414
Total # Projects	3		

Total Stream Miles Affected	0.0414
Total Stream Miles (Denominator)	25.2 mi.

% Uplift	0.2%
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**MEC8A - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)**

<u>Action</u>	<u>SC Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Barkley Bear Habitat Enhancement (2016)	0.75	60%	0.45
Silver Side Channel (2016)	0.38	90%	0.342
Total Project Length	1.13		0.792
Total # Projects	2		

Total Miles Affected	0.792		
Total Side Channel Miles (Denominator)	20 mi.		See Look Back

% Uplift	4.0%
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**MEC8A - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Barkley Bear Habitat Enhancement (2016)	0.85	40%	0.34
Total Project Length	0.85		0.34
Total # Projects	1		

Total Stream Miles Affected	0.34
Total Stream Miles (Denominator)	25.2 mi.

% Uplift	1.3%
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**MEC8A - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Barkley Bear Habitat Enhancement (2016)	0.85	40%	0.34
Total Project Length	0.85		0.34

Total # Projects1

Total Stream Miles Affected0.34

Total Stream Miles (Denominator)25.2 mi.

% Uplift

1.3%

MEC8A - LF 8.1 (Water Quality: Temperature)

Uplift from Flow Increase (LF 9.2)2%

Prorating Factor5%

% Uplift

0.1%

MEC8A - LF 9.2 (Water Quantity: Decreased Water Quantity)

Action	Permanent Acquisition	Annual Amounts (cfs)			Miles Affected	Prorating Factor	Weighted Flow increase (cfs)
		2016	2017	2018			
Barkley Irrigation (2016, TU)	7	7	7	7	8	32%	2.2
Barkley Irrigation (2016, TU)	19	19	19	19	2.5	10%	1.9
TU MVID-East Pipe	No Data						
Total	26	26	26	26			

Effective  
Increase

4.1

Total4.1 cfs

Total # Projects3

Denominator250 cfs

% Uplift (2018)

1.6%

USGS Winthrop Gauge Mean Daily Lowest Baseflow (1911-2016)



**MEC8B**    **Upper-Middle Methow**

Stream Miles of Fish Use (used as denominator)

10.8 mi

(used as denominator in uplift calculation)

**MEC8B - LF 1.1 (Anthropogenic Barriers)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	10.8 mi.		
% Uplift	0.0%		

**MEC8B - LF 3.1 (Primary Productivity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	10.8 mi.		
% Uplift	0.0%		

**MEC8B - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	10.8 mi.		
% Uplift	0.0%		

**MEC8B - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Big Valley South (2017)	0.2	50%	0.1
Total Project Length	0.2		0.1
Total # Projects	1		
Total Miles Affected	0.1		
Total Stream Total Side Channel Miles	15.1 mi.		See Look Back

**% Uplift** **0.7%**

**MEC8B - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Big Valley South (2017)	0.9	100%	0.9
Total Project Length	0.9		0.9
Total # Projects	1		
Total Stream Miles Affected	0.9		
Total Stream Miles (Denominator)	10.8 mi.		

**% Uplift** **8.3%**

**MEC8B - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Big Valley South (2017)	0.9	100%	0.9
Total Project Length	0.9		0.9
Total # Projects	1		
Total Stream Miles Affected	0.9		
Total Stream Miles (Denominator)	10.8 mi.		

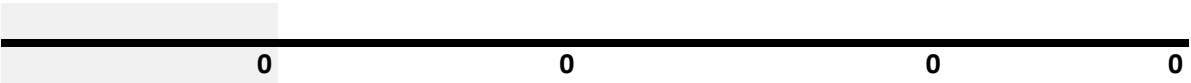
**% Uplift** **8.3%**

**MEC8B - LF 9.2 (Water Quantity: Decreased Water Quantity)**

<u>Action</u>	<u>Annual Amounts (cfs)</u>			
	<u>Permanent Acquisition</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>

No Actions

*Total*



*Annual Average ==>*

0.0

Total

0.0 cfs

Total # Projects

#REF!

Denominator

cfs

Example: Base Flow

**% Uplift (2018)**

**0.0%**

MES1 Beaver Creek

Stream Miles of Fish Use (used as denominator)

9.2 mi

(used as denominator in uplift calculation)

MES1 - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)	
Frazer Creek Barriers (2016, ten barriers)	2.5	0%	0	Outside steelhead use
WDFW/Maltais Diversion	2	0%	0	Outside steelhead use
Stokes Bridge Culvert to Bridge	6.7	5%	0.335	
Total Project Length	11.2		0.335	
Total # Projects	3			
Total Stream Miles Affected	0.335			
Total Stream Miles (Denominator)	9.2 mi.			
% Uplift	3.6%			

MES1 - LF 2.3 (Injury and Mortality: Mechanical Injury)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.2 mi.		
% Uplift	0.0%		

MES1 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		

Total Stream Miles Affected	0
Total Stream Miles (Denominator)	9.2 mi.
% Uplift	0.0%

**MES1 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.2 mi.		
% Uplift	0.0%		

**MES1 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.2 mi.		
% Uplift	0.0%		

**MES1 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)**

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	9.2 mi.		
% Uplift	0.0%		

MES1 - LF 8.1 (Water Quality: Temperature)

Uplift from Flow Increase (LF 9.2) No Actions  
Prorating Factor

% Uplift 0.0%

MES1 - LF 9.2 (Water Quantity: Decreased Water Quantity)

Annual Amounts (cfs)				
Action	Permanent Acquisition	2016	2017	2018
No Actions				
Total	0	0	0	0
Annual Average ==>				0.0
Total	0.0 cfs			
Total # Projects	0			
Denominator	cfs	Example: Base Flow		
% Uplift (2018)	#DIV/0!			

MES3 Early Winters Creek

Stream Miles of Fish Use (used as denominator)

4.5 mi

(used as denominator in uplift calculation)

MES3 - LF 3.1 (Primary Productivity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	0.0%		

MES3 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	0.0%		

MES3 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Early Winters 20 below Large Wood (2017)	0.1	50%	0.05
Total Project Length	0.1		0.05
Total # Projects	1		
Total Stream Miles Affected	0.05		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	1.1%		

MES3 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	0.0%		

MES3 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Early Winters 20 below Large Wood (2017)	0.1	50%	0.05
Total Project Length	0.1		0.05
Total # Projects	1		
Total Stream Miles Affected	0.05		
Total Stream Miles (Denominator)	4.5 mi.		
% Uplift	1.1%		

MES3 - LF 9.2 (Water Quantity: Decreased Water Quantity)

Action	Permanent Acquisition	Annual Amounts (cfs)		
		2016	2017	2018
No Actions				
Total	0	0	0	0
Annual Average ==>				0.0
Total	0.0 cfs			
Total # Projects	0			
Denominator	cfs	Example: Base Flow		
% Uplift (2018)	0.0%			



MES6 Lower Chewuch

Stream Miles of Fish Use (used as denominator)	23.9 mi	(used as denominator in uplift calculation)
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MES6 - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	23.9 mi.		
% Uplift	0.0%		

MES6 - LF 3.1 (Primary Productivity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	23.9 mi.		
% Uplift	0.0%		

MES6 - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		

Total Stream Miles Affected 0  
Total Stream Miles (Denominator) 23.9 mi.

% Uplift 0.0%

MES6 - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)

Action	Side Channel Miles treated	% Improvement (proration factor)	Realized
			Change in 2018 (mi)
Chewuch RM 15.5-17	0.5	100%	0.5
Chewuch RM 17-20	0.2	50%	0.1
Total Project Length	0.7		0.6
Total # Projects	2		
Total Miles Affected	0.6		
Total Side Channel Miles (Denominator)	9.8 mi.	Bureau of Reclamation Tributary Assessment Geodatabase	
% Uplift	6.1%		

MES6 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

Action	Miles treated	% Improvement (proration factor)	Realized
			Change in 2018 (mi)
Chewuch RM 15.5-17 (2017)	1.5	30%	0.45
Chewuch RM 17-20 (2017)	3	30%	0.9
Total Project Length	4.5		1.35
Total # Projects	2		
Total Stream Miles Affected	1.35		
Total Stream Miles (Denominator)	23.9 mi.		
% Uplift	5.6%		

MES6 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	Miles treated	% Improvement (proration factor)	Realized
			Change in 2018 (mi)
Chewuch RM 15.5-17 (2017)	1.5	20%	0.3
Chewuch RM 17-20 (2017)	3	15%	0.45
Total Project Length	4.5		0.75
Total # Projects	2		

Total Stream Miles Affected	0.75
Total Stream Miles (Denominator)	23.9 mi.
% Uplift	3.1%

**MES6 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)**

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	23.9 mi.		
% Uplift	0.0%		

**MES6 - LF 8.1 (Water Quality: Temperature)**

Uplift from Flow Increase (LF 9.2)	No Actions
Prorating Factor	
% Uplift	0.0%

**MES6 - LF 9.2 (Water Quantity: Decreased Water Quantity)**

Action	Annual Amounts (cfs)			
	Permanent Acquisition	2016	2017	2018
No Actions				
Total	0	0	0	0
Annual Average ==>				0.0
Total	0.0 cfs			
Total # Projects	0			
Denominator	cfs			
% Uplift (2018)	#DIV/0!			

Example: Base Flow

MES8 Lower Twisp

Stream Miles of Fish Use (used as denominator)

18.6 mi

(used as denominator in uplift calculation)

MES8 - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
MVID-West Push Up Dam	9.1	25%	2.275
Total Project Length	9.1		2.275
Total # Projects	1		
Total Stream Miles Affected	2.275		
Total Stream Miles (Denominator)	18.6 mi.		
% Uplift	12.2%		

MES8 - LF 2.3 (Injury and Mortality: Mechanical Injury)

Action	# Screens	% Improvement (proration factor)	Realized Change in 2018 (#)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total # Screens Addressed	0		
Total Unscreened Diversions	#		
Gap % (High - Low Bookend)			
% Uplift	#DIV/0!		

MES8 - LF 3.1 (Primary Productivity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	18.6 mi.		
% Uplift	0.0%		

**MES8 - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Twisp River Floodplain Phase I (2016)	0.75	3%	0.0225
Twisp Ponds Left Bank Side Channel (2016)	0.26	3%	0.0078
Twisp River Horseshoe Side Channel (2017)	0.1	2%	0.002
Devaney (Colville Tribe) Riparian Exclusion (2016)	1	3%	0.03
Total Project Length	2.11		0.0623
Total # Projects	4		
Total Stream Miles Affected	0.0623		
Total Stream Miles (Denominator)	18.6 mi.		
<b>% Uplift</b>	<b>0.3%</b>		

**MES8 - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Twisp River Floodplain Phase I (2016)	0.75	100%	0.75
Twisp Ponds Left Bank Side Channel (2016)	0.26	100%	0.26
Twisp River Horseshoe Side Channel (2017)	0.1	100%	0.1
Newby Narrows Side Channel (2016)	0.2	100%	0.2
Total Project Length	1.31		1.31
Total # Projects	4		
Total Stream Miles Affected	1.31		
Total Side Channel Miles (Denominator)	15.5 mi.		2008 Tributary Assessment
<b>% Uplift</b>	<b>8.5%</b>		

**MES8 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proration factor)</u>	<u>Realized Change in 2018 (mi)</u>
Twisp River Floodplain Phase I (2016)	0.4	63%	0.25
Twisp Ponds Left Bank Side Channel (2016)	0.26	40%	0.104
Twisp River Horseshoe Side Channel (2017)	0.2	30%	0.06
Lower Twisp Large Wood (2017)	1	10%	0.1
Newby Narrows Side Channel (2016)	0.8	70%	0.56
Total Project Length	2.66		1.074
Total # Projects	5		

Total Stream Miles Affected 1.074  
Total Stream Miles (Denominator) 18.6 mi.

% Uplift 5.8%

MES8 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Twisp River Floodplain Phase I (2016)	0.65	65%	0.4225
Twisp Ponds Left Bank Side Channel (2016)	0.26	5%	0.013
Lower Twisp Large Wood (2017)	1	30%	0.3
Newby Narrows Side Channel (2016)	0.8	70%	0.56
Total Project Length	2.71		1.2955
Total # Projects	4		

Total Stream Miles Affected 1.2955  
Total Stream Miles (Denominator) 18.6 mi.

% Uplift 7.0%

MES8 - LF 8.1 (Water Quality: Temperature)

Uplift from Flow Increase (LF 9.2) 8%  
Prorating Factor 5%

% Uplift 0.4%

MES8 - LF 9.2 (Water Quantity: Decreased Water Quantity)

Action	Permanent Acquisition	Annual Amounts (cfs)		
		2016	2017	2018
MVID West	11	11	11	11
Aspen Meadows	2	0	2	2
Poorman Creek	1.5	1.5	1.5	1.5
Total	13	12.5	14.5	14.5

Total 13.8 cfs  
Total # Projects 3  
Denominator 43 cfs  
Prorating Factor Based on Affected Stream Miles 24%

Annual Average ==> 13.8

See Look Back

% Uplift (2018)

7.6%

MES9A Middle Methow

Stream Miles of Fish Use (used as denominator)	25.2 mi	(used as denominator in uplift calculation)
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MES9A - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Barkley Bear (2016)	0.19	100%	0.19
Total Project Length	0.19		0.19
Total # Projects	1		
Total Stream Miles Affected	0.19		
Total Stream Miles (Denominator)	25.2 mi.		
% Uplift	0.8%		

MES9A - LF 2.3 (Injury and Mortality: Mechanical Injury)

Action	# Screens	% Improvement (proration factor)	Realized Change in 2018 (#)
Barkley Irrigation (2016)	1	100%	1
Total Project Length	1		1
Total # Projects	0		
Total # Screens Addressed	1		
Total Unscreened Diversions	1 #		
Gap % (High - Low Bookend)	13.5%		
% Uplift	13.5%		



**MES9A - LF 4.1 (Riparian Vegetation)**

<u>Action</u>	<u>Miles treated</u>	<u>%</u>	<u>Realized</u>
		<u>Improvement</u> <u>(proration factor)</u>	<u>Change in</u> <u>2018 (mi)</u>
Barkley Bear Habitat Enhancement (2016)	0.75	3%	0.0225
Lawson Fencing Project (2016)	0.25	3%	0.0075
Silver Side Channel (2016)	0.38	3%	0.0114
Total Project Length	1.38		0.0414
Total # Projects	3		
Total Stream Miles Affected	0.0414		
Total Stream Miles (Denominator)	25.2 mi.		
<b>% Uplift</b>	<b>0.2%</b>		

**MES9A - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)**

<u>Action</u>	<u>SC Miles treated</u>	<u>%</u>	<u>Realized</u>
		<u>Improvement</u> <u>(proration factor)</u>	<u>Change in</u> <u>2018 (mi)</u>
Barkley Bear Habitat Enhancement (2016)	0.75	60%	0.45
Silver Side Channel (2016)	0.38	90%	0.342
Total Project Length	1.13		0.792
Total # Projects	2		
Total Miles Affected	0.792		
Total Side Channel Miles (Denominator)	20 mi.	See Look Back	
<b>% Uplift</b>	<b>4.0%</b>		

**MES9A - LF 6.1 (Channel Structure and Form: Bed and Channel Form)**

<u>Action</u>	<u>Miles treated</u>	<u>%</u>	<u>Realized</u>
		<u>Improvement</u> <u>(proration factor)</u>	<u>Change in</u> <u>2018 (mi)</u>
Barkley Bear Habitat Enhancement (2016)	0.85	40%	0.34
Total Project Length	0.85		0.34
Total # Projects	1		

Total Stream Miles Affected	0.34
Total Stream Miles (Denominator)	25.2 mi.

% Uplift	1.3%
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**MES9A - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)**

<u>Action</u>	<u>Miles treated</u>	<u>% Improvement (proportion factor)</u>	<u>Realized Change in 2018 (mi)</u>
Barkley Bear Habitat Enhancement (2016)	0.85	40%	0.34
Total Project Length	0.85		0.34
Total # Projects	1		

Total Stream Miles Affected	0.34
Total Stream Miles (Denominator)	25.2 mi.

% Uplift	1.3%
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**MES9A - LF 8.1 (Water Quality: Temperature)**

Uplift from Flow Increase (LF 9.2)	1.6%
Prorating Factor	5%

% Uplift	0.1%
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**MES9A - LF 9.2 (Water Quantity: Decreased Water Quantity)**

Action	Permanent Acquisition	Annual Amounts (cfs)			Miles Affected	Prorating		Weighted Flow increase (cfs)
		2016	2017	2018		Factor		
Barkley Irrigation (2016, TU)	7	7	7	7	8	32%	2.2	
Barkley Irrigation (2016, TU)	19	19	19	19	2.5	10%	1.9	
TU MVID-East Pipe	No Data							
<b>Total</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>				

			<b><i>Effective Increase</i></b>	4.1
Total	4.1 cfs			
Total # Projects	3			
Denominator	250 cfs		USGS Winthrop Gauge Mean Daily Lowest Baseflow (1911-2016)	

% Uplift (2018)	1.6%
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MES9B

Upper-Middle Methow

Stream Miles of Fish Use (used as denominator)

10.8 mi

(used as denominator in uplift calculation)  
As with Look Back, Chinook Streamnet miles were used.

MES9B - LF 1.1 (Anthropogenic Barriers)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	10.8 mi.		
% Uplift	0.0%		

MES9B - LF 3.1 (Primary Productivity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Action			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	10.8 mi.		
% Uplift	0.0%		

MES9B - LF 4.1 (Riparian Vegetation)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
No Action			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected	0		
Total Stream Miles (Denominator)	10.8 mi.		
% Uplift	0.0%		

MES9B - LF 5.1 (Peripheral and Transitional Habitats: Side Channel and Wetland Conditions)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Big Valley South (2017)	0.2	50%	0.1
Total Project Length	0.2		0.1
Total # Projects	1		
Total Miles Affected	0.1		
Total Stream Total Side Channel Miles	15.1 mi.		See Look Back

% Uplift0.7%

MES9B - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Big Valley South (2017)	0.9	100%	0.9
Total Project Length	0.9		0.9
Total # Projects	1		
Total Stream Miles Affected	0.9		
Total Stream Miles (Denominator)	10.8 mi.		

% Uplift8.3%

MES9B - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	Miles treated	% Improvement (proration factor)	Realized Change in 2018 (mi)
Big Valley South (2017)	0.9	100%	0.9
Total Project Length	0.9		0.9
Total # Projects	1		
Total Stream Miles Affected	0.9		
Total Stream Miles (Denominator)	10.8 mi.		

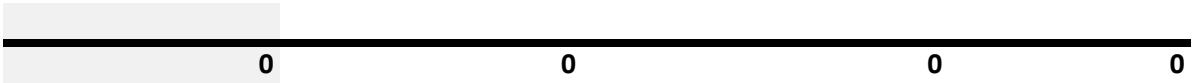
% Uplift8.3%

MES9B - LF 9.2 (Water Quantity: Decreased Water Quantity)

Annual Amounts (cfs)				
Action	Permanent Acquisition	2016	2017	2018

No Actions

*Total*



*Annual Average ==>*

0.0

Total

0.0 cfs

Total # Projects

0

Denominator

cfs

Example: Base Flow

**% Uplift (2018)**

