#### Workbook Info

Project: Expert Panel 2015-2016 Meeting: Wallowa-Imnaha Look Forward Primary Data Recorder: Nick Legg, Geomorphologist, Cardno Inc. Latest Revision: 5/27/2016

#### **Workbook Description**

This workbook is the "Calculation Tables" used to capture planned actions and calculate functional uplift during the Wallowa-Imnaha Look Forward Process on May 3-4, 2016. This table was created in support of the biological notes taken in the same meeting, and contained in the spreadsheets Wallowa\_Chinook\_HabFunctions2013-2018\_LBLF\_BioNotes\_QA\_05272016 and Wallowa\_Steelhead\_HabFunctions2013-2018\_LBLF\_BioNotes\_QA\_05272016. The biological notes spreadsheet also documents the

Filename: Wallowa\_LookForward\_CalcSpreadsheet\_QA\_052716

Sheets: Sheets are produced for individual Assessment Units and named by the Assessment Unit Code. When the panel identified no actions in an assessment unit, a sheet was generally not created. Weighting Sheets were produced to record changes to Limiting Factor weights or Low Bookends.

#### **Highlighting Key:**

Yellow highlights require follow-up and additional data from the panel.

#### BSC2 Upper Big Sheep Creek

Stream Miles Denominator used in Uplift

Calculation (in appropriate Limiting Factors)

18.8 mi

#### BSC2 - LF 1.1 (Anthropogenic Barriers)

	- 	2018 % Improvement (prorating	Realized Change in
Action	Miles treated	factor)	<u>2018 (mi)</u>
No Actions			0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected (Weighted for 2018)	0		
Total Stream Miles (Denominator)	18.8	mi.	
% Uplift (2018)	0.0%		

#### BSC2 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action	2018 % Improvem (prorating Miles treated factor)	
No Actions		<u>2018 (IIII)</u> 0
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 18.8_mi.	
% Uplift (2018)	0.0%	

#### BSC2 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

		<u>2018 %</u> Improvement		
Action	Miles treated	(prorating factor)	<u>Realized Change in</u> 2018 (mi)	
Big Sheep Trail Conversion and Realignment			0	Expert Panel of
Total Project Length		0	0	
Total # Projects		0		

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Total Stream Miles Affected (Weighted for 2018)	0
Total Stream Miles (Denominator)	18.8 mi.
% Uplift (2018)	0.0%

#### BSC2 - LF 8.1 (Water Quality: Temperature)

<u>Action</u> No Actions	2018 % Improvement (prorating Miles treated factor)	<u>Realized Change in</u> 2018 (mi) 0
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 18.8 mi.	
% Uplift (2018)	0.0%	

#### BSC2 - LF 8.2 (Water Quality: Oxygen)

<u>Action</u> No Actions	2018 % Improven (prorating Miles treated factor)	
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for 2018)	0	
Total Stream Miles (Denominator)	18.8 mi.	
% Uplift (2018)	0.0%	

#### BSC2- LF 9.2 (Water Quantity: Decreased Water Quantity)

		<u>Annual</u>	Amounts (cfs)		
	Permanent				
Action	Acquisition		<u>2016</u>	<u>2017</u>	<u>2018</u>
No Actions					
Total		0	0	0	0
			Annual	Average ==>	0.0
Total	(	0.0 cfs			

Total # Projects	1
Denominator	cfs
% Uplift (2018)	#DIV/0!

Example: Base Flow

#### BSC3 Big Sheep Creek Tributaries

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors)

6.8 mi

#### BSC3 - LF 1.1 (Anthropogenic Barriers)

		<u>2018 %</u> Improvement (prorating	-	d Change in	
Action		factor)	2018 (r		
Lick Creek Culvert	0.7	:	<mark>10%</mark>	0.07	Expert Panel d
Total Project Length	0.7			0.07	
Total # Projects	1				
Total Stream Miles Affected (Weighted for 2018)	0.07				
Total Stream Miles (Denominator)	6.8	mi.			
% Uplift (2018)	1.0%				

#### BSC3 - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)

		2018 % Improvement (prorating	Realized Change in
Action	Miles treated	<u>factor)</u>	<u>2018 (mi)</u>
No Actions		_	0
Total Project Length	0		0
Total # Projects	0		
Total Miles Affected (Weighted for 2018)	0		
Total Stream Miles (Denominator)	6.8	mi.	
% Uplift (2018)	0.0%		

#### BSC3 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

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

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Total Project Length	0
Total # Projects	0
	0
Total Stream Miles Affected (Weighted for 2018)	0
Total Stream Miles (Denominator)	<u> </u>
% Uplift (2018)	0.0%

#### BSC3 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

0

Total Project Length Total # Projects		0	0
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)		0 .8 mi.	
% Uplift (2018)	0.0%	6	

#### BSC3 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

<u>Action</u> No Actions	Miles treated	<u>2018 %</u> Improvement (prorating factor)	<u>Realized Change in</u> <u>2018 (mi)</u> 0
Total Project Length		0	0
Total # Projects		0	
Total Stream Miles Affected (Weighted for 2018)		0	
Total Stream Miles (Denominator)	6	.8 mi.	
% Uplift (2018)	0.0%	6	

#### BSC3 - LF 8.2 (Water Quality: Oxygen)

Action	2018 % Improv (prorat Miles treated factor)	rement Realized Change in
No Actions		0
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 6.8_mi.	
% Uplift (2018)	0.0%	

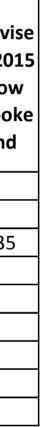
		Revised Weights	100%				
AU Code	Limiting Factor ID #	2012 LF Weight	Revised LF Weight	Change in Weight	2012 Low Bookend	2015 Low Booke nd	Revis d 20: Lov Bool nd
WLC3	1.1	5%	5%	0%	91	95.1	
WLC3	4.1	10%	10%	0%	40.25	40.28	
ADDED	5.1	0%	10%	10%			35
WLC3	6.1	15%	10%	-5%	40	40.8	
WLC3	6.2	25%	25%	0%	40.3	40.8	
WLC3	7.2	20%	20%	0%	50.1	50.8	
WLC3	8.1	10%	10%	0%	85.1	85.1	
WLC3	8.2	0%	0%	0%	70	70	
WLC3	9.2	15%	10%	-5%	80.1	80.6	

Sum of Revised Weights

100%

0%

<u>WLC3</u>



#### <u>WLC3</u> <u>Upper Wallowas River (Dry Cr. To Wallowas Lake)</u>

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors)

36.6 mi

#### WLC3 - LF 1.1 (Anthropogenic Barriers)

	2018 % Improvement (proroting	Realized Change in
Action	<u>(prorating</u> Miles treated factor)	2018 (mi)
No Actions		0
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for		
2018)	0	
Total Stream Miles (Denominator)	<u>36.6</u> mi.	
% Uplift (2018)	0.0%	

#### WLC3 - LF 4.1 (Riparian Vegetation)

	<u>2018 %</u>		
	Improvement_		
	(prorating	<u>g Rea</u>	alized Change in
Action	Miles treated factor)	<u>201</u>	<u>.8 (mi)</u>
Wallowa-Baker (0.6 miles planting on one			
bank, 2017)	0.3	1%	0.003
Wallowa-Baker (fencing, 2017)	0.3	1%	0.003
Tamkaliks Habitat Restoration Project			
(planting)	0.4	1%	0.003787879
Total Project Length	0.978787879		0.009787879
Total # Projects	3		
Total Stream Miles Affected (Weighted for			
2018)	0.009787879		
Total Stream Miles (Denominator)	36.6 mi.		
% Uplift (2018)	0.03%		

#### WLC3 - LF 5.1 (Peripheral and Transitional Habitats: Side and Secondary Channels)

	<u>2</u>	2018 %	
	<u>h</u>	mprovement	
	(	prorating_	Realized Change in
Action	Miles treated factors	actor)	<u>2018 (mi)</u>
Wallowa-Baker (mainstem with side channels			
plus Spring Creek connection, 2017)	0.6	75%	0.45
Tamkaliks Habitat Restoration Project (side			
channel creation)	0.28	70%	0.196
Total Project Length	0.88		0.646
Total # Projects	0		
Total Miles Affected (Weighted for 2018)	0.646		
Total Stream Miles (Denominator)	<u>36.6</u> n	ni.	
% Uplift (2018)	1.8%		

#### WLC3 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

	<u>2018 %</u>		
	Improver	<u>ment</u>	
	<u>(proratin</u>	<u>g</u> <u>Realize</u>	ed Change in
Action	Miles treated factor)	<u>2018 (</u>	<u>mi)</u>
Wallowa-Baker (mainstem , 2017)	0.6	75%	0.45
Tamkaliks Habitat Restoration Project (side			
channel creation)	0.3	70%	0.196
Total Project Length	0.88		0.646
Total # Projects	2		
Total Stream Miles Affected (Weighted for			
2018)	0.646		
Total Stream Miles (Denominator)	36.6 mi.		
% Uplift (2018)	1.8%		

# WLC3 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

	<u>2018 %</u>		
	Improvement		
	(prorating	Rea	alized Change in
Action	Miles treated factor)	<u>20</u> 1	<u>L8 (mi)</u>
Wallowa-Baker (mainstem , 2017)	1.3	75%	1.003977273

Tamkaliks Habitat Restoration Project (side			
channel creation)	0.3	70%	0.196
Total Project Length	1.6		1.199977273
Total # Projects	0		
Total Stream Miles Affected (Weighted for 201	1.199977273		
Total Stream Miles (Denominator)	36.6 mi.		
% Uplift (2018)	3.3%		

# WLC3 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

		<u>2018 %</u>	
		Improvement	
		(prorating	Realized Change in
Action	Miles treated	<u>factor)</u>	<u>2018 (mi)</u>
Wallowa-Baker (mainstem , 2017)	0.6	75%	0.45
Tamkaliks Habitat Restoration Project (side			
channel creation)	0.3	75%	0.21
Total Project Length	0.9		0.66
Total # Projects	0		
Total Stream Miles Affected (Weighted for 202	L 0.66		
Total Stream Miles (Denominator)	36.6	mi.	
% Uplift (2018)	1.8%		

#### WLC3 - LF 8.1 (Water Quality: Temperature)

% Uplift (2018)	0.04%
LF 9.2 Uplift	0.01%
LF 4.1 Uplift	0.03%

Summed Riparian and Flow Benefits

#### WLC3 - LF 8.2 (Water Quality: Oxygen)

<u>2018 %</u>	
Improve	ment_
(proratir	Realized Change in
Miles treated factor)	<u>2018 (mi)</u>
	0

Action No Actions

Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for		
2018)	0	
Total Stream Miles (Denominator)	36.6 mi.	
% Uplift (2018)	0.0%	

#### WLC3 - LF 9.2 (Water Quantity: Decreased Water Quantity)

<u>Annual Amounts (cfs)</u>						
	Permanent				Weighted	
Action	<b>Acquisition</b>	<u>2016</u>	<u>2017</u>	<u>2018 W</u>	eighting Factor CFS	
Wallowa-Baker (mainstem , 2017)		0	4	4	0.008279516 0.022079	
Total	0	0	4	4		
		Annual	Average ==>	0.022		
Total	0.0 cfs					
Total # Projects	0					
Denominator	207 cfs	95% Flov	w Exceedence per And	erson Perry Rep	ort	
% Uplift (2018)	0.011%					
	0.011/0					

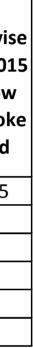
<u>WLC7</u>

Revised Weights 0% 0% 2015 Revise d 2015 Limiting 2012 LF 2012 Low Low AU Code **Revised LF Weight** Change in Weight Bookend Booke Factor ID # Weight Low nd Booke nd WLC7 1.1 15% 85 100 25 WLC7 6.2 30% 57 57.1 7.2 50 WLC7 10% 50 77 WLC7 8.1 10% 78.2 WLC7 8.2 0% 75 75 WLC7 9.2 35% 50 62.5

> Sum of Revised Weights

0%

0%



#### <u>WLC7</u> Lower Lostine River (Mouth to Silver Cr.)

Stream Miles Denominator used in UpliftCalculation (in appropriate Limiting Factors)14

14.1 mi

#### WLC7 - LF 1.1 (Anthropogenic Barriers)

		<u>2018 %</u>	Dealland
		<u>Improvement</u> (prorating	<u>Realized</u> Change in
Action		factor)	2018 (mi)
Action Shoon Bidgo Fish Dossogo Improvement (2016, DMO)	treated 4.5	50%	2.25
Sheep Ridge Fish Passage Improvement (2016, RM9)	_		
Tulley Hill Passage Improvement (RM 2)	1	33%	0.33
2016-2017 3-yr Minimum Flow (RMs 9-5.5)	3.5	72%	2.52
Wolfe Conserve Water (RM5.5, 2 cfs during low flow)	5.5	4%	0.22
Wolfe Split Season Lease (RM5.5, Aug. to Sept. = 9.5 cfs)	5.5	19%	1.045
Total Project Length	20		6.365
Total # Projects	3		
Total Stroom Miles Affected (Meighted for 2019)	6.265		
Total Stream Miles Affected (Weighted for 2018)	6.365		
Total Stream Miles (Denominator)	14.1	mi.	
% Uplift (2018)	45.1%		

#### WLC7 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

		<u>2018 %</u>	
		<u>Improvemen</u>	t Realized
	Miles	(prorating	Change in
Action	treated	factor)	<u>2018 (mi)</u>
No Actions		_	0
Total Project Length	(	)	0
Total # Projects	(	)	
Total Stream Miles Affected (Weighted for 2018)	(	)	
Total Stream Miles (Denominator)	14.1	L_mi.	
% Uplift (2018)	0.0%		

#### WLC7 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

		<u>2018 %</u> Improvemen	t Realized
	<u>Miles</u>	(prorating	Change in
Action	treated	factor)	<u>2018 (mi)</u>
No Actions			0
Total Project Length		0	0
Total # Projects	(	D	
Total Stream Miles Affected (Weighted for 2018)	(	D	
Total Stream Miles (Denominator)	14.3	1 mi.	
% Uplift (2018)	0.0%	6	

#### WLC7 - LF 8.1 (Water Quality: Temperature)

		<u>2018 %</u>	
		<b>Improvement</b>	Realized
	<u>Miles</u>	(prorating	Change in
Action	treated	<u>factor)</u>	<u>2018 (mi)</u>
Carlsen Acquisition	8.5	5%	0.425
2016-2018 Lostine Minimum Flow Agreement (RMs 9-5.5)	9	5%	0.45
Wolfe Permanent Diversion (permanent donation beginning 2012	) 5	5%	0.25
Wolfe Conserve Water (RM5.5, 2 cfs Aug-Sept)	5.5	5%	0.275
Wolfe Conserve Water (RM5.5, May-July)	5.5	2%	0.11
Wolfe Split Season Lease (RM5.5, Aug. to Sept. = 9.5 cfs)	5.5	5%	0.275
Total Project Length	39		1.785
Total # Projects	6		
Total Stream Miles Affected (Weighted for 2018)	1.785		
Total Stream Miles (Denominator)	14.1	mi.	
% Uplift (2018)	12.7%		

# WLC7 - LF 8.2 (Water Quality: Oxygen)

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

% Uplift (2018)	0.0%	
Total Stream Miles (Denominator)	14.1 m	i.
Total Stream Miles Affected (Weighted for 2018)	0	

#### WLC7 - LF 9.2 (Water Quantity: Decreased Water Quantity)

<u>Annual Amounts (cfs)</u>								
							<u>Temporal</u>	
							Weighting	
					Stream	Mileage	(percent of	
	Permanent				Miles	<u>Weightin</u>	irrigation	Weighted
Action	Acquisition	<u>2016</u>	<u>2017</u>	<u>2018</u>	Affected	g Factor	<u>season)</u>	<u>Flow</u>
Carlsen Acquisition	0.96	0.96	0.96	0.96	8.5	60%	40	% 0.2
2016-2018 Lostine Minimum Flow Agreement (RMs 9-5.5)		18	20	20	9	64%	40	% 4.9
Wolfe Permanent Diversion (permanent donation beginning 2012)	0.39	0.39	0.39	0.39	5	35%	40	% 0.1
Wolfe Conserve Water (RM5.5, 2 cfs Aug-Sept)		2	2	2	5.5	39%	40	% 0.3
Wolfe Conserve Water (RM5.5, May-July)		12.5	12.5	12.5	5.5	39%	5'	% 0.2
Wolfe Split Season Lease (RM5.5, Aug. to Sept. = 9.5 cfs)		9.5	0	9.5	5.5	39%	40	% 1.0
Total	1.35	43.35	35.85	45.35				6.8
			Weighted					
			Sum	6.8				
Total	6.8	cfs						
Total # Projects	6							
Denominator	35	cfs P	anel estimate	e of base	flow prior	to irrigatior	ı	
% Uplift (2018)	19.3%							

#### IRS8 Upper Big Sheep & Little Sheep Mainstems

Stream Miles Denominator used in UpliftCalculation (in appropriate Limiting Factors)11.9 mi

#### IRS8 - LF 1.1 (Anthropogenic Barriers)

		<u>2018 %</u> Improvem (prorating		ange in
Action	Miles treated	factor)	<u>2018 (mi)</u>	
Little Sheep Creek AOP Culvert (USFS)		3	25%	0.75 Expert Panel did not submit edits to the
Total Project Length		3		0.75
Total # Projects		1		
Total Stream Miles Affected (Weighted for 2018)	(	0.75		
Total Stream Miles (Denominator)		11.9 mi.		
% Uplift (2018)	6.3	<mark>3%</mark>		

#### IRS8 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

Action Big Sheep Trail Conversion and Realignment (USFS)	Miles treated	<u>2018 %</u> Improvement (prorating factor)	<u>Realized Change i</u> 2018 (mi)	n 0 Expert Panel did not submit edits to the v
Total Project Length		0		0
Total # Projects		0		
Total Stream Miles Affected (Weighted for 2018)		0		
Total Stream Miles (Denominator)	1	1.9 mi.		
% Uplift (2018)	0.0	1%		

#### IRS8 - LF 8.1 (Water Quality: Temperature)

	<u>2018 %</u>	
	<b>Improvement</b>	
	(prorating	Realized Change in
Miles treated	<u>factor)</u>	<u>2018 (mi)</u>



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No Actions		0
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 11.9 mi.	
% Uplift (2018)	0.0%	

# IRS8- LF 9.2 (Water Quantity: Decreased Water Quantity)

	Annual Amounts (cfs)				
<u>Action</u> No Actions	Permanent Acquisition	<u>2</u>	016	<u>2017</u>	<u>2018</u>
Total	0		0	0	0
			Annual Averag	ge ==>	0.0
Total	0.0	cfs			
Total # Projects	0				
Denominator		cfs	Example: Base	Flow	
% Uplift (2018)	#DIV/0!				

#### **Upper Big Sheep & Little Sheep tributaries** <u>IRS9</u>

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors) 21.8 mi

#### IRS9 - LF 1.1 (Anthropogenic Barriers)

		2018 % Improvem (proroting		hange in
Action	Miles treated	<u>(prorating</u> factor)	<u>Realized C</u> 2018 (mi)	
Lick Creek Culvert	<u>3</u> .		10%	0.37 Expert Panel did not submit edits to the
Total Project Length	3.	7		0.37
Total # Projects		1		
Total Stream Miles Affected (Weighted for 2018)	0.3	7		
Total Stream Miles (Denominator)	21.	8 mi.		
% Uplift (2018)	1.7%	6		

#### IRS9 - LF 4.1 (Riparian Vegetation)

		<u>2018 %</u> Improvement (prorating	Realized Change in
Action	Miles treated	<u>factor)</u>	<u>2018 (mi)</u>
No Actions			0
Total Project Length		0	0
Total # Projects		0	
Total Stream Miles Affected (Weighted for 2018)		0	
Total Stream Miles (Denominator)	2	1.8 mi.	
% Uplift (2018)	0.0	%	

#### IRS9 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

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



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Total Project Length	0
Total # Projects	0
	_
Total Stream Miles Affected (Weighted for 2018)	0
Total Stream Miles (Denominator)	21.8 mi.
% Uplift (2018)	0.0%

#### IRS9 - LF 8.1 (Water Quality: Temperature)

Action	2018 %Improvement(proratingMiles treatedfactor)	<u>Realized Change in</u> 2018 (mi)
No Actions		0
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 0 	
% Uplift (2018)	0.0%	

0

#### IRS9 - LF 8.2 (Water Quality: Oxygen)

Action	2018 Impro (pror Miles treated factor	ovement ating <u>Realized Change in</u>
No Actions		0
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 0 21.8 mi.	
% Uplift (2018)	0.0%	

# IRS9 - LF 9.1 (Water Quantity: Increased Water Quantity)

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

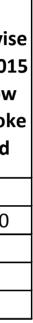
#### IRS9 - LF 9.2 (Water Quantity: Decreased Water Quantity)

			Annual An	nounts (cfs)		
	Ē	Permanent				
Action	<u> </u>	Acquisition		<u>2016</u>	<u>2017</u>	<u>2018</u>
No Actions						
Total		0		0	0	0
				Annual	Average ==>	0.0
Total		0.0	cfs			
Total # Projects		1				
Denominator	_		cfs	Example	e: Base Flow	
% Uplift (2018)		#DIV/0!				

<u>WRS6</u>

#### Revised Weights 100% 0% 2015 Revise d 2015 Limiting 2012 LF 2012 Low Low AU Code **Revised LF Weight** Change in Weight Bookend Booke Factor ID # Weight Low nd Booke nd WRS6 4.1 25% 25% 0% 40 40 Added 5.1 20% 20% 40 WRS6 6.1 30% 50% -20% 40 40 WRS6 6.2 15% 15% 0% 40 40 8.1 10% 10% 0% WRS6 75 75

Sum of		
Revised		
Weights	100%	0%



#### WRS6 Mid-Wallowa River - Dry Creek to Lostine River

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors)

7.4 mi

#### WRS6 - LF 4.1 (Riparian Vegetation)

	<u>2018 %</u>		
	Improve	ement_	
	(prorati	ng <u>Rea</u>	lized Change in
Action	Miles treated factor)	<u>201</u>	<u>8 (mi)</u>
Wallowa-Baker (0.6 miles planting on one			
bank, 2017)	0.3	1%	0.003
Wallowa-Baker (fencing, 2017)	0.3	1%	0.003
Tamkaliks Habitat Restoration Project			
(planting)	0.4	1%	0.003787879
Total Project Length	0.98		0.01
Total # Projects	3		
Total Stream Miles Affected (Weighted for 201	0.009787879		
Total Stream Miles (Denominator)	7.4 mi.		
% Uplift (2018)	0.13%		

#### WRS6 - LF 5.1 (Peripheral and Transitional Habitats: Side and Secondary Channels)

	<u>2018 %</u> Improver	nent	
	(prorating		ed Change in
Action	Miles treated factor)	<u>2018 (</u>	<u>mi)</u>
Wallowa-Baker (mainstem with side channels			
plus Spring Creek connection, 2017)	0.6	75%	0.45
Tamkaliks Habitat Restoration Project (side channel creation)	0.28	70%	0.196
Total Project Length	0.88		0.646
Total # Projects	0		
Total Miles Affected (Weighted for 2018)	0.646		
Total Stream Miles (Denominator)	7.4 mi.		
% Uplift (2018)	8.7%		

#### WRS6 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

		<u>2018 %</u>	
		Improvement	
		(prorating	Realized Change in
Action	Miles treated	<u>factor)</u>	<u>2018 (mi)</u>
Wallowa-Baker (mainstem , 2017)	0.6	75%	0.45
Tamkaliks Habitat Restoration Project (side			
channel creation)	0.3	70%	0.196
Total Project Length	0.88		0.646
Total # Projects	2		
Total Stream Miles Affected (Weighted for			
2018)	0.646		
Total Stream Miles (Denominator)	7.4	mi.	
% Uplift (2018)	8.7%		

#### WRS6 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

	<u>20</u>	18 %	
	Im	nprovement	
	<u>(pi</u>	<u>rorating</u>	Realized Change in
Action	Miles treated fac	<u>ctor)</u>	<u>2018 (mi)</u>
Wallowa-Baker (mainstem , 2017)	1.3	75%	1.003977273
Tamkaliks Habitat Restoration Project (side			
channel creation)	0.3	70%	0.196
Total Project Length	1.6		1.20
Total # Projects	2		
Total Stream Miles Affected (Weighted for			
2018)	1.20		
Total Stream Miles (Denominator)	7.4 mi	i.	
% Uplift (2018)	16.2%		

0.13%

#### WRS6 - LF 8.1 (Water Quality: Temperature)

#### LF 4.1 Uplift (from Steelhead)

# LF 9.2 Uplift from Chinookbecause no LF 9.2 inSteelhead AU.0.01%% Uplift (2018)0.14%

Summed Riparian and Flow Benefits

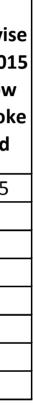
<u>WRS10</u>

Revised Weights 0% 0% 2015 Revise d 2015 Limiting 2012 LF 2012 Low Low AU Code **Revised LF Weight** Change in Weight Bookend Factor ID # Weight Booke Low Booke nd nd WRS10 1.1 15% 85 95.6 35 WRS10 3.1 5% 70 70 5.2 10% 65 WRS10 65 65 WRS10 6.2 20% 65.04 7.2 60 WRS10 10% 60 8.1 75 WRS10 10% 75.7 75 WRS10 8.2 0% 75 9.2 30% 50 WRS10 81.3

> Sum of Revised Weights

0%

0%



#### WRS10 Lostine River

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors)

26.3 mi

#### WRS10 - LF 1.1 (Anthropogenic Barriers)

	<u>20</u>	<u>18 %</u>
	<u>Im</u>	provement Realized
	Miles (pr	rorating Change in
Action	treated fac	<u>ctor) 2018 (mi)</u>
Sheep Ridge Fish Passage Improvement (2016, RM9)	17.3	33% 5.709
Tulley Hill Passage Improvement (RM 2)	1	25% 0.25
2016-2017 3-yr Minimum Flow (RMs 9-5.5)	3.5	8% 0.2916667
Wolfe Conserve Water (RM5.5, 2 cfs during low flow)	5.5	8% 0.4583333
Wolfe Split Season Lease (RM5.5, Aug. to Sept. = 9.5 cfs)	5.5	8% 0.4583333
Total Project Length	32.8	7.1673333
Total # Projects	3	
Total Stream Miles Affected (Weighted for 2018)	7.167333333	
Total Stream Miles (Denominator)	26.3_mi	
% Uplift (2018)	27.3%	

#### WRS10 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

		<u>2018 %</u>	
		Improvemen	t Realized
	Miles	(prorating	Change in
Action	treated	<u>factor)</u>	<u>2018 (mi)</u>
No Actions		_	0
Total Project Length	0	,	0
Total # Projects	0	)	
Total Stream Miles Affected (Weighted for 2018)	0		
Total Stream Miles (Denominator)	26.3	mi.	
% Uplift (2018)	0.0%		

#### WRS10 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

		<u>2018 %</u> Improvemen	t Realized
	Miles	(prorating	Change in
Action	<u>treated</u>	<u>factor)</u>	<u>2018 (mi)</u>
No Actions			0
Total Project Length		0	0
Total # Projects		0	
Total Stream Miles Affected (Weighted for 2018)		0	
Total Stream Miles (Denominator)	26.	3 mi.	
% Uplift (2018)	0.0%	6	

#### WRS10 - LF 8.1 (Water Quality: Temperature)

		<u>2018 %</u>	
		Improvement	<b>Realized</b>
	Miles	(prorating	Change in
Action	treated	<u>factor)</u>	<u>2018 (mi)</u>
Carlsen Acquisition	8.5	5 5%	0.425
2016-2018 Lostine Minimum Flow Agreement (RMs 9-5.5)	g	5%	0.45
Wolfe Permanent Diversion (permanent donation beginning 2012	) 5	5 5%	0.25
Wolfe Conserve Water (RM5.5, 2 cfs Aug-Sept)	5.5	5 5%	0.275
Wolfe Conserve Water (RM5.5, May-July)	5.5	5 2%	0.11
Wolfe Split Season Lease (RM5.5, Aug. to Sept. = 9.5 cfs)	5.5	5%	0.275
Total Project Length	39	)	1.785
Total # Projects	e	5	
Total Stream Miles Affected (Weighted for 2018)	1.785	5	
Total Stream Miles (Denominator)	26.3	8 mi.	
Overall Weighting Factor (reduction for 1 life stage as opposed to	2 50%	,	
% Uplift (2018)	3.4%	)	

#### WRS10 - LF 8.2 (Water Quality: Oxygen)

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

% Uplift (2018)	0.0%
Total Stream Miles (Denominator)	26.3 mi.
Total Stream Miles Affected (Weighted for 2018)	0
Total # Projects	0

# WRS10 - LF 9.2 (Water Quantity: Decreased Water Quantity)

		<u>Annual Amoun</u>	<u>ts (cfs)</u>						
							<u>Temporal</u>		
							Weighting		
					<u>Stream</u>	Mileage	(percent of		
	Permanent				Miles	<u>Weightin</u>	irrigation	Weig	hted
Action	Acquisition	<u>2016</u>	2017	<u>2018</u>	<u>Affected</u>	g Factor	<u>season)</u>	Flow	
Carlsen Acquisition	0.96	0.96	0.96	0.96	8.5	5 60%	40	)%	0.2
2016-2018 Lostine Minimum Flow Agreement (RMs 9-5.5)		18	20	20	0	9 64%	40	0%	4.9
Wolfe Permanent Diversion (permanent donation beginning 2012)	0.39	0.39	0.39	0.39	ľ,	5 35%	40	0%	0.1
Wolfe Conserve Water (RM5.5, 2 cfs Aug-Sept)		2	2	2	5.5	5 39%	40	0%	0.3
Wolfe Conserve Water (RM5.5, May-July)		12.5	12.5	12.5	5.5	5 39%	, i	5%	0.2
Wolfe Split Season Lease (RM5.5, Aug. to Sept. = 9.5 cfs)		9.5	0	9.5	5.5	5 39%	40	0%	1.0
Total	1.35	43.35	35.85	45.35					6.8
			Weighted						
			Sum	6.8					
Total	6.8	cfc	Sum	0.0					
		013							
Total # Projects	6								
Denominator Overall Weighting Factor (reduction for 1 life stage as opposed to	35	cfs	Panel estima	ite of base	flow prior	to irrigation	n		
2 for Chinook)	50%								
% Uplift (2018)	9.7%								

# Sum of Revised

Weights

# 100%

0%

AU Code	Limiting Factor ID #	2012 LF Weight	Revised LF Weight	Change in Weight	2012 Low Booke nd	2015 Low Booke nd	Revised 2015 Low Bookend
JCS1	6.1	15%	15%	0%	80	80	
JCS1	7.2	35%	35%	0%	70	70	
JCS1	8.1	45%	45%	0%	66	66.1	
JCS1	8.2	5%	0%	-5%	75	75	
ADDED	9.2	0%	5%	5%			75

Sum of Revised

Weights

100% 0%

<u>JCS1</u>



#### JCS1 Joseph Creek Mainstem

Stream Miles Denominator used in UpliftCalculation (in appropriate Limiting Factors)48.4 mi

JCS1 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)					
Action No Actions	<u>Miles</u> treated	2018 % Improvem ent (prorating factor)	<u>Realized</u> Change in 2018 (mi) 0		
Total Project Length Total # Projects	0		0		
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 48.4				
% Uplift (2018)	0.0%				

JCS1 - LF 7.2 (Sediment Conditions: In	creased Se	diment Q	uantity)
		2018 % Improvem	Port of
	Miles	ent (prorating	Realized Change in
Action	treated	factor)	2018 (mi)
No Actions		_	0
Total Project Length		0	0
Total # Projects		0	
Total Stream Miles Affected (Weighted for 2018)		0	
Total Stream Miles (Denominator)	48	3.4 mi.	
% Uplift (2018)	0.0	%	

#### JCS1 - LF 8.1 (Water Quality: Temperature)

<mark>Action</mark> Fill according LF 9.2 uplift.	<u>Miles</u> treated	2018 % Improvem ent (prorating factor)	Realized Change in 2018 (mi) 0
Total Project Length	0	<del>,</del>	0
Total # Projects	C	)	
Total Stream Miles Affected (Weighted for 2018)	c	,	
Total Stream Miles (Denominator)	48.4	mi.	
% Uplift (2018)	0.0%		

Expert Panel did not submit edits to the work project RM 8/8/2016

0

#### JCS1 - LF 8.2 (Water Quality: Oxygen)

Action No Actions	<u>Miles</u> treated	factor)	<u>Realized</u> <u>Change in</u> <u>2018 (mi)</u> 0
Total Project Length Total # Projects	(		0
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator) % Uplift (2018)	48.4 0.0%	4 mi.	

#### JCS1 - LF 9.2 (Water Quantity: Decreased Water Quantity)

	inuui Amoui	115 (15)			
Permanent				Prorating	Weighted
Acquisition	2016	2017	2018	Factor	Flow
	0.81	0.81	0.81	40%	0.324 Expert Panel did not submit edits to the work project RM 8/8/2016
0	0.81	0.81	0.81		
0.3 cf	s				
0					
5 cf	s B	aseflow near site	2		Expert Panel did not submit edits to the work project RM 8/8/2016
6.5%					
	Permanent Acquisition 0 0.3 cf 0 5 cf	Permanent Acquisition 2016 0.81   0 0.81   0.3 cfs 0   0 5 cfs B	Permanent Acquisition 2016 0.81 2017 0.81   0 0.81 0.81   0 0.81 0.81   0.3 cfs 0   0 5 cfs	Permanent Acquisition 2016 2017 2018   0 0.81 0.81 0.81   0 0.81 0.81 0.81   0.3 cfs 0 5 cfs Baseflow near site	Acquisition 2016 2017 2018 Factor   0.81 0.81 0.81 0.81 40%   0 0.81 0.81 0.81 0.81   0.3 cfs 0 5 cfs Baseflow near site



# Sum of Revised

Weights

# 100%

6

0%

16.66667

AU Code	Limiting Factor ID #	2012 LF Weight	Revised LF Weight	Change in Weight	2012 Low Booke nd	2015 Low Booke nd	Revised 2015 Low Bookend
JCS5	4.1	14.3%	15%	1%			50
JCS5	5.2	14.3%	15%	1%			50
JCS5	6.2	14.3%	15%	1%			50
JCS5	7.2	14.3%	20%	6%			50
JCS5	8.1	14.3%	20%	6%			50
JCS5	8.2	14.3%	0%	-14%			
JCS5	9.2	14.3%	15%	1%			50

Sum of Revised

Weights

100% 0%

<u>JCS5</u>



#### JCS5 Elk & Crow Creeks

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors)

26.2 mi

#### JCS5 - LF 1.1 (Anthropogenic Barriers)

		<u>2018 %</u> Improvement	
Action	Miles treated	(prorating	Realized Change in
<u>Action</u> No Actions	<u>Ivmes treated</u>	<u>factor)</u>	<b>2018 (mi)</b> 0
Total Project Length	(	)	0
Total # Projects	(	)	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	( 26.2	) 2 mi.	
% Uplift (2018)	0.0%	•	

#### JCS5 - LF 2.1 (Injury and Mortality: Predation)

<u>Action</u> No Actions	<u>Design Flow of</u> Screen (cfs)	2018 % Improvement (prorating factor)	Realized Change in 2018 (flow) 0
Total Project Length	0		0
Total # Projects	0		
Total Stream Miles Affected (Weighted for 2018) Total Flow (Denominator)	0	cfs	
% Uplift (2018)	#DIV/0!		

#### JCS5 - LF 3.1 (Food: Altered Primary Productivity)

<u>Action</u> No Actions	<u>Design Flow of</u> <u>Screen (cfs)</u>	<u>2018 %</u> Improvement (prorating factor)	Realized Change in 2018 (flow) 0
Total Project Length	0	)	0
Total # Projects	0	)	
Total Stream Miles Affected (Weighted for 2018) Total Flow (Denominator)	0	_cfs	
% Uplift (2018)	#DIV/0!	]	

#### JCS5 - LF 4.1 (Riparian Vegetation)

	<u>2018 %</u> Improver	ment_	
	(proratin	Realized	<u>Change in</u>
Action	Miles treated factor)	<u>2018 (mi</u>	<u>)</u>
Crow Creek - Krebs Fencing (2017)	0.94	1%	0.0094
Total Project Length	0.94		0.0094
Total # Projects	1		
Total Stream Miles Affected (Weighted for 2018)	0.0094		
Total Stream Miles (Denominator)	26.2_mi.		
% Uplift (2018)	0.04%		

# JCS5 - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)

		<u>2018 %</u> Improvement		
		(prorating	Realized Chan	<u>ge in</u>
Action	Miles treated	<u>factor)</u>	<u>2018 (mi)</u>	
Crow Creek - Krebs Fencing (2017)	0.94	0%	6	0
Total Project Length	0.94	<b>-</b>		0
Total # Projects	C	)		
Total Miles Affected (Weighted for 2018)	C	)		
Total Stream Miles (Denominator)	26.2	mi.		
% Uplift (2018)	0.0%			

#### JCS5 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

	<u>2018 %</u> Improvement	
	(prorating	Realized Change in
Miles treated	<u>factor)</u>	<u>2018 (mi)</u>
		0
	0	0
	0	
	0	
26	5.2 mi.	
0.0	%	
	26	Miles treated 0

#### JCS5 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

		<u>2018 %</u> Improvement	
Action	Miles treated	(prorating factor)	<u>Realized Change in</u> 2018 (mi)
No Actions	ivilles treated		0
Total Project Length	(	)	0
Total # Projects	(	)	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)		) 2 mi.	
% Uplift (2018)	0.0%	, )	

#### JCS5 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

		<u>2018 %</u>		
		Improvement		
		(prorating	Realized Chan	ge in
Action	Miles treated	<u>factor)</u>	<u>2018 (mi)</u>	
Crow Creek - Krebs Fencing (2017)	0.94	5%		0.047
Total Project Length	0.94	ļ		0.047
Total # Projects	C	)		
Total Stream Miles Affected (Weighted for 2018)	0.047	,		
Total Stream Miles (Denominator)	26.2	mi.		
% Uplift (2018)	0.2%			

# JCS5 - LF 8.1 (Water Quality: Temperature)

	<u>2018 %</u> Improveme	ent
	(prorating	Realized Change in
Action	Miles treated factor)	<u>2018 (mi)</u>
Crow Creek - Krebs Fencing (2017)	0.94	0%0
Total Project Length	0.94	0
Total # Projects	1	
Total Stream Miles Affected (Weighted for 2018)	0	
Total Stream Miles (Denominator)	26.2 mi.	
% Uplift (2018)	0.0%	

#### JCS5 - LF 8.2 (Water Quality: Oxygen)

<u>Action</u> No Actions	2018 %Improvement(proratingMiles treatedfactor)	Realized Change in 2018 (mi) 0
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 26.2 mi.	
% Uplift (2018)	0.0%	

#### JCS5 - LF 9.1 (Water Quantity: Increased Water Quantity)

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

% Uplift (2018)	<b>0.0%</b>
Total Stream Miles Affected (Weighted for 2018)	0
Total Stream Miles (Denominator)	26.2 mi.

# JCS5 - LF 9.2 (Water Quantity: Decreased Water Quantity)

	Ar	nnual Amounts (cfs)		
	Permanent_			
Action	Acquisition	<u>2016</u>	<u>2017</u>	<u>2018</u>
No Actions				
Total	0	0	0	0
		Annua	l Average ==>	0.0
Total	0.0 cfs	S		
Total # Projects	0			
Denominator	cfs	s Examp	le: Base Flow	
% Uplift (2018)	0.0%			

#### JCS6 Lower Chesnimnus Creek and Prairie Tributaries

Stream Miles Denominator used in UpliftCalculation (in appropriate Limiting Factors)31.8 mi

#### JCS6 - LF 1.1 (Anthropogenic Barriers)

Action	2018 % Improvem (prorating Miles treated factor)	
No Actions		0
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 31.8 mi.	
% Uplift (2018)	0.0%	

#### JCS6 - LF 4.1 (Riparian Vegetation)

		<u>2018 %</u> Improveme	nt_	
		(prorating	Realized Ch	ange in
Action	Miles treated	factor)	<u>2018 (mi)</u>	
WF Pine Krebs (2018)		2	1%	0.02
Chesnimnus Creek - Williams (2016)		1	1%	0.01
Total Project Length		3		0.03
Total # Projects		2		
Total Stream Miles Affected (Weighted for 2018)	0	.03		
Total Stream Miles (Denominator)	3	1.8 mi.		
% Uplift (2018)	0.1	%		

#### JCS6 - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)

	<u>2018 %</u>	
	<b>Improvement</b>	
	(prorating	Realized Change in
Miles treated	<u>factor)</u>	<u>2018 (mi)</u>

<u>Action</u>

WF Pine Krebs (2018)	2	5%	0.1
Chesnimnus Creek - Williams (2016)	1	0%	0
Total Project Length	3		0.1
Total # Projects	0		
Total Miles Affected (Weighted for 2018)	0.1		
Total Stream Miles (Denominator)	31.8 mi.		
% Uplift (2018)	0.3%		

#### JCS6 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

Action		rovement rating <u>Realized Change in</u>
No Actions		0
Total Project Length	0	0
Total # Projects	0	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 31.8_mi.	
% Uplift (2018)	0.0%	

#### JCS6 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

	<u>2018 %</u> Improven	nent	
	(prorating		
Action	Miles treated factor)	<u>2018 (r</u>	<u>ni)</u>
WF Pine Krebs (2018)	2	1%	0.02
Chesnimnus Creek - Williams (2016)	1	1%	0.01
Total Project Length	3		0.03
Total # Projects	0		
Total Stream Miles Affected (Weighted for 2018)	0.03		
Total Stream Miles (Denominator)	31.8 mi.		
% Uplift (2018)	0.1%		

#### JCS6 - LF 8.1 (Water Quality: Temperature)

	<u>2018 %</u> Improvement		
		(prorating Realized Chan	
Action	Miles treated	<u>factor)</u>	<u>2018 (mi)</u>
WF Pine Krebs (2018)	2	0%	0
Chesnimnus Creek - Williams (2016)	1	0%	
Total Project Length	3		0
Total # Projects	2		
Total Stream Miles Affected (Weighted for 2018)	0		
Total Stream Miles (Denominator)	31.8	mi.	
% Uplift (2018)	0.0%		

#### JCS6 - LF 8.2 (Water Quality: Oxygen)

Action	<u>Miles treated</u>	<u>2018 %</u> Improvement (prorating factor)	<u>Realized Change in</u> 2018 (mi)
No Actions		_	0
Total Project Length	0	,	0
Total # Projects	0	)	
Total Stream Miles Affected (Weighted for 2018) Total Stream Miles (Denominator)	0 31.8		
% Uplift (2018)	0.0%		

#### JCS6 - LF 9.2 (Water Quantity: Decreased Water Quantity)

		Annual Amounts (c	<u>fs)</u>	
<u>Action</u> No Actions	Permanent Acquisition	<u>2016</u>	<u>2017</u>	<u>2018</u>
Total	0	0	0	0
			Annual Average ==>	
Total	0.0	cfs		
Total # Projects	0			
Denominator		cfs	Example: Base Flow	

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

# Sum of Revised

Weights

# 100% 0%

AU Code	Limiting Factor ID #	2012 LF Weight	Revised LF Weight	Change in Weight	2012 Low Booke nd	2015 Low Booke nd	Revised 2015 Low Bookend
JCS6	1.1	12.5%	14%	2%			50
JCS6	4.1	12.5%	15%	3%			50
JCS6	5.2	12.5%	13%	1%			50
JCS6	6.2	12.5%	13%	1%			50
JCS6	7.2	12.5%	15%	3%			50
JCS6	8.1	12.5%	15%	3%			50
JCS6	8.2	12.5%	0%	-13%			
JCS6	9.2	12.5%	15%	3%			50

Sum of Revised

Weights

100% 0%

