



Your Northwest renewables utility

June 15, 2017

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission (FERC)
888 First Street NE
Washington, DC 20426

**Re: Jackson Hydro Project, FERC No. 2157
Instream Flow Schedule for Reach 3 of the Sultan River - Water Year 2017-2018**

Dear Secretary Bose:

Public Utility District No. 1 of Snohomish County (the District) will be modifying the instream flow schedule for the Jackson Hydroelectric Project (Project) within Reach 3 (River Mile [RM] 9.7 to 16.1) of the Sultan River; this modification applies to the 2017-2018 Water Year, see Attachment 1: Water Year 2017-2018, Instream Flow Schedule. This modification is consistent with the requirements identified under "A-LA 9: Minimum Flows" in Appendix G of the Project's License.

The purpose of this change from the previous year is to shape the annual water budget for the benefit of anadromous species with the completion of volitional fish passage construction at the City of Everett's Diversion Dam at RM 9.7. The emphasis of flow management will shift from meeting the physical habitat and water quality needs of the resident rainbow trout populations towards meeting those of fall (Chinook and coho salmon) and spring (steelhead trout) spawning populations. In contrast to the default flow scheduled identified in A-LA 9, this change will involve re-shaping the flow release schedule but result in no net change to the annual flow budget of 20,362 acre-feet. Reshaping will balance physical habitat and temperature requirements of the evolving fish community.

The District consulted with the ARC regarding the attached schedule, see Attachment 2.

Please contact Keith Binkley, Natural Resources Manager at (425) 783-1769, if you should have any questions regarding this filing.

Sincerely,

/s/ Tom DeBoer

Tom DeBoer
Assistant General Manager of Generation, Power, Rates and Transmission Management
TADeBoer@snopud.com
(425) 783-1825

cc: Keith Binkley, District
ARC

**ATTACHMENT 1:
Water Year 2017-2018
Instream Flow Schedule for Reach 3**

Timeframe	Release Flow (cfs)
July 1*-15	25
July 16-31	25
August 1-15	25
August 16-31	25
September 1-14	40
September 15-21	64
September 22-30	63
October 1-15	59
October 16-31	50
November 1-15	28
November 16-30	15
December 1-15	15
December 16-31	15
January 1-15	15
January 16-31	15
February 1-14	15
February 15-28	15
March 1-15	15
March 16-31	35
April 1-15	36
April 16-30	28
May 1-15	34
May 16-31	30
June 1-15	24
June 16-30	25

* July 1 begins the water year.

**ATTACHMENT 2:
Consultation Documentation**

Presler, Dawn

Subject: Reach 3 Budget Shaping - finalization of 2017-18 release schedule
Location: Conference Call

Start: Mon 6/5/2017 2:30 PM
End: Mon 6/5/2017 4:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Binkley, Keith
Required Attendees: 'Applegate, Brock A (DFW)'; 'Pacheco, James (ECY)'; Anne Savery (asavery@tulaliptribes-nsn.gov)

→ [Join Skype Meeting](#)

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Join by phone

[\(425\) 783-1400](#) (SNOPUD)

English (United States)

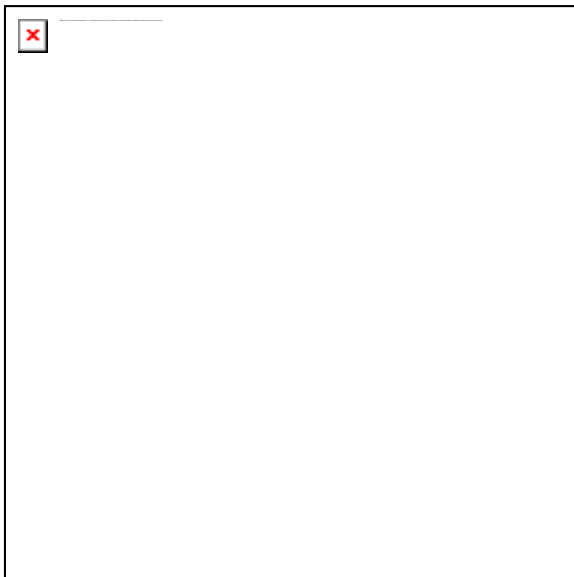
[\(877\) 783-0950](#) (SNOPUD)

English (United States)

[Find a local number](#)

Conference ID: 12016

[Forgot your dial-in PIN?](#) | [Help](#)



Internal users may dial 1400 to attend a conference by phone.

Presler, Dawn

From: Presler, Dawn
Sent: Tuesday, April 11, 2017 2:09 PM
To: 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'Anne Savery'; 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV); 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov); 'Rustay, Michael'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Wright, Lindsay'; Ken Walker
Cc: Binkley, Keith; 'Ludwig, Noel - FS'; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)
Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18
Attachments: 20170418_Agenda.docx; 20170418 ARC Q Conditions Update.docx

Dear ARC Members,
Attached is the agenda and standard conditions update document for our discussion at the ARC meeting next week (April 18 at 1:30). Please let me know if you plan on attending in-person; otherwise, we'll be talking with you soon over the Skype meeting on Tuesday.

Dawn Presler
Sr. Environmental Coordinator
(425) 783-1709

PUD No. 1 of Snohomish County
PO Box 1107
Everett, WA 98206-1107

Presler, Dawn

From: Presler, Dawn
Sent: Wednesday, April 12, 2017 1:16 PM
To: 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'Anne Savery'; 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV); 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov); 'Rustay, Michael'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Wright, Lindsay'; 'Ken Walker'
Cc: Binkley, Keith; 'Ludwig, Noel - FS'; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)
Subject: JHP (FERC No. 2157) - ARC mtg supplemental material
Attachments: Variable Instream Flow Release Schedule for Reach 3 - 2017-2018.xls; JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

Dear ARC Members,

Attached is the spreadsheet tool that we can use as part of our discussion regarding the Reach 3 instream flow schedule for WY2017-18 that was previously emailed out (also attachments).

Dawn

From: Presler, Dawn
Sent: Tuesday, April 11, 2017 2:09 PM
To: 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV)' <JPAC461@ECY.WA.GOV>; 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov)' <brock.applegate@dfw.wa.gov>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>; Ken Walker <ken.walker@ci.sultan.wa.us>
Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; 'Ludwig, Noel - FS' <nludwig@fs.fed.us>; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)' <Tim_Romanski@fws.gov>
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Everett, WA 98206-1107

Presler, Dawn

From: mick.matheson@ci.sultan.wa.us
Sent: Monday, April 03, 2017 3:51 PM
To: Binkley, Keith
Cc: Presler, Dawn; ken.walker@ci.sultan.wa.us
Subject: RE: Jackson HydroProject (FERC No. 2157) - draft Reach 3 Instream flow schedule WY17-18

Keith & Dawn,

I am leaving Sultan to become the new Public Works Director for the City of Mukilteo. This is my last week in Sultan and I will be starting in Mukilteo on April 10th.

Sultan's new contact will be Ken Walker, City Administrator. His email address is ken.walker@ci.sultan.wa.us. His phone number is 360.793.1164.

I have enjoyed working with both of you.

Thanks,

-Mick

Mick Matheson, P.E.

City of Sultan
Director of Public Works/City Engineer
Tel: (360) 793-2231
Fax: (360) 793-3344
Direct: (360) 793-2262
Cell: (425) 583-6528
mick.matheson@ci.sultan.wa.us

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Sent: Monday, April 03, 2017 3:35 PM
To: 'Applegate, Brock A (DFW)' <Brock.Applegate@dfw.wa.gov>; Presler, Dawn <DJPresler@SNOPUD.com>; 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Mick Matheson' <mick.matheson@ci.sultan.wa.us>; 'Jim Miller'

(JMiller@everettwa.gov) <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>

Cc: 'Ludwig, Noel - FS' <noludwig@fs.fed.us>; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov) <Tim_Romanski@fws.gov>; Whitney, Jennifer L (DFW) <Jennifer.Whitney@dfw.wa.gov>

Subject: RE: Jackson HydroProject (FERC No. 2157) - draft Reach 3 Instream flow schedule WY17-18

Hi Brock – sorry for the lag in responding. Yes, we do want to make sure to not impact incubating eggs. Fortunately, the reduction in flow release during the incubation period comes with a corresponding increase in natural inflows. This is not apparent from looking solely at the table of scheduled releases but is when we look at the attached evaluation tool. I look forward to discussing this in person at our next ARC meeting.

Keith

P.S. Earlier today, we documented our first steelhead redd in Reach 3!

From: Applegate, Brock A (DFW) [<mailto:Brock.Applegate@dfw.wa.gov>]

Sent: Friday, March 24, 2017 2:10 PM

To: Presler, Dawn <DJPresler@SNOPUD.com>; 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Mick Matheson' <mick.matheson@ci.sultan.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>

Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; 'Ludwig, Noel - FS' <noludwig@fs.fed.us>; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov) <Tim_Romanski@fws.gov>; Whitney, Jennifer L (DFW) <Jennifer.Whitney@dfw.wa.gov>

Subject: RE: Jackson HydroProject (FERC No. 2157) - draft Reach 3 Instream flow schedule WY17-18

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Hi Keith, I will take the first shot at some questions on the instream flow in Reach 3, which have some relevance because I just had some internal conversations on fall chinook periodicity in Reach 3.

We have fall chinook spawning soon after September 1 and I might understand the flow increase. We hold that flow for the remainder of the month. However, you would need to keep the flows at 75% for a couple of months for the incubating eggs to keep them wet. I am calculating a flow of 42 cfs through the end of November. Of course, we might have other flow inputs that I am not considering.

Thanks for your reply. I look forward to this conversation.

Sincerely, Brock

From: Presler, Dawn [<mailto:DJPresler@SNOPUD.com>]

Sent: Thursday, March 23, 2017 8:53 AM

To: 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'Anne Savery'; Pacheco, James (ECY); Applegate, Brock A (DFW); 'Rustay, Michael'; 'Mick Matheson'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Wright, Lindsay'

Cc: Binkley, Keith; 'Ludwig, Noel - FS'; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)

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Volitional Passage project and balancing anadromous and resident fish flow and temperature needs. Please take the next 30-days to review and provide comments, if any, back to me (cc: Keith) by April 22. Sending me a concurrence email as well would be fantastic. We will allocate some time at the ARC meeting on April 18 as well to discuss if necessary.

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July 1-15	20
July 16-31	20
August 1-15	20
August 16-31	20
September 1-14	55
September 15-21	55
September 22-30	55
October 1-15	45
October 16-31	35
November 1-15	25
November 16-30	15
December 1-15	15
December 16-31	15
January 1-15	15
January 16-31	15
February 1-14	15
February 15-28	15
March 1-15	15
March 16-31	50
April 1-15	45
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Presler, Dawn

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January 16-31	15
February 1-14	15
February 15-28	15
March 1-15	15
March 16-31	50
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Dawn Presler
 Sr. Environmental Coordinator
 (425) 783-1709

PUD No. 1 of Snohomish County
 PO Box 1107
 Everett, WA 98206-1107

Presler, Dawn

From: Jim Miller <JMiller@everettwa.gov>
Sent: Thursday, March 23, 2017 4:40 PM
To: Presler, Dawn
Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

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OK with Everett.
Jim

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Presler, Dawn

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Can you give us an idea of the associated temperatures within Reach 3 as well as downstream?

Thanks

Anne

Anne Savery
Hydrologist
503-984-0667

From: Presler, Dawn [DJPresler@SNOPUD.com]

Sent: Thursday, March 23, 2017 8:52 AM

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Attachments: Stage Discharge Lower Reach 3.pdf; Stage Discharge Upper Reach 3.pdf

Hi folks – I am attaching two files that contain the stage discharge relationships for the IFIM transects located in Reach 3. This information can be referenced to make sure that we establish a protective stage and discharge during incubation after setting our spawning flow. The rule of thumb for the maximum allowable change in stage between spawning and incubation that we used in the lower river was 1.0 foot for Chinook and 0.6 feet for other species.

I hope this information is helpful.

Keith

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From: Applegate, Brock A (DFW) [<mailto:Brock.Applegate@dfw.wa.gov>]
Sent: Friday, March 24, 2017 2:10 PM
To: Presler, Dawn <DJPresler@SNOPUD.com>; 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Mick Matheson' <mick.matheson@ci.sultan.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>

Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; 'Ludwig, Noel - FS' <nludwig@fs.fed.us>; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)' <Tim_Romanski@fws.gov>; Whitney, Jennifer L (DFW) <Jennifer.Whitney@dfw.wa.gov>
Subject: RE: Jackson HydroProject (FERC No. 2157) - draft Reach 3 Instream flow schedule WY17-18

**CAUTION: THIS EMAIL IS FROM AN EXTERNAL SENDER.
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Hi Keith, I will take the first shot at some questions on the instream flow in Reach 3, which have some relevance because I just had some internal conversations on fall chinook periodicity in Reach 3.

We have fall chinook spawning soon after September 1 and I might understand the flow increase. We hold that flow for the remainder of the month. However, you would need to keep the flows at 75% for a couple of months for the incubating eggs to keep them wet. I am calculating a flow of 42 cfs through the end of November. Of course, we might have other flow inputs that I am not considering.

Thanks for your reply. I look forward to this conversation.

Sincerely, Brock

From: Presler, Dawn [<mailto:DJPresler@SNOPUD.com>]
Sent: Thursday, March 23, 2017 8:53 AM
To: 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'Anne Savery'; Pacheco, James (ECY); Applegate, Brock A (DFW); 'Rustay, Michael'; 'Mick Matheson'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Wright, Lindsay'
Cc: Binkley, Keith; 'Ludwig, Noel - FS'; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)'
Subject: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

Dear ARC Members:

Below is the draft proposed instream flow for Water Year 2017-2018 (July 1, 2017 - June 30, 2018) for Reach 3. Keith has adjusted this from the default schedule in A-LA9 based on the completion of the Diversion Dam Volitional Passage project and balancing anadromous and resident fish flow and temperature needs. Please take the next 30-days to review and provide comments, if any, back to me (cc: Keith) by April 22. Sending me a concurrence email as well would be fantastic. We will allocate some time at the ARC meeting on April 18 as well to discuss if necessary.

Timeframe	Release Flow (cfs)
July 1-15	20
July 16-31	20
August 1-15	20
August 16-31	20
September 1-14	55
September 15-21	55
September 22-30	55
October 1-15	45
October 16-31	35
November 1-15	25
November 16-30	15

Presler, Dawn

From: Binkley, Keith
Sent: Wednesday, April 26, 2017 4:45 PM
To: 'Applegate, Brock A (DFW)'; Presler, Dawn; 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'Anne Savery'; Pacheco, James (ECY); 'Rustay, Michael'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Wright, Lindsay'
Cc: 'Ludwig, Noel - FS'; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)
Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18
Attachments: Reach 3 Stage Discharge below 200 cfs at IFIM Transects.xlsx

Hi Brock – I prepared the attached per your request for more refined information on the stage / discharge relationship at the IFIM transects located in Reach 3. This should inform our selection of appropriate incubation flows.

Keith

From: Applegate, Brock A (DFW) [mailto:Brock.Applegate@dfw.wa.gov]
Sent: Friday, April 21, 2017 2:33 PM
To: Presler, Dawn <DJPresler@SNOPUD.com>; 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Mick Matheson' <mick.matheson@ci.sultan.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>
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Hi Dawn, I know that we will talk further on this topic, but I wanted to give you a few comments, just in case you need to send something to FERC. WDFW has one main concern. We want to maintain enough flow for incubating chinook salmon and steelhead eggs. Incubation for chinook probably goes through the winter. We should conduct Incubation flows for steelhead about 2 months after spawning.

I look forward to further discussion on this topic.

Sincerely, Brock

Brock Applegate
Renewable Energy/Major Projects Mitigation Biologist
Washington Department of Fish and Wildlife
P.O. Box 1100
111 Sherman St. (physical address)
La Conner, WA 98257-9612

(360) 466-4345 x244 (office)
(360) 789-0578 (cell)
(360) 466-0515 (fax)

Presler, Dawn

From: Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>
Sent: Friday, April 21, 2017 2:33 PM
To: Presler, Dawn; 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'Anne Savery'; Pacheco, James (ECY); 'Rustay, Michael'; 'Mick Matheson'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Wright, Lindsay'
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To: 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'Anne Savery'; Pacheco, James (ECY); Applegate, Brock A (DFW); 'Rustay, Michael'; 'Mick Matheson'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Wright, Lindsay'
Cc: Binkley, Keith; 'Ludwig, Noel - FS'; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)
Subject: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

Dear ARC Members:

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Presler, Dawn

From: Jim Miller <JMiller@everettwa.gov>
Sent: Tuesday, April 11, 2017 2:51 PM
To: Presler, Dawn
Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

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Dawn: Should the very last item on the conditions document be "2017" instead of "2016"?
Jim

From: Presler, Dawn [mailto:DJPresler@SNOPUD.com]
Sent: Tuesday, April 11, 2017 2:09 PM
To: 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'Anne Savery'; 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV); 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov); 'Rustay, Michael'; Jim Miller; 'Thomas O'Keefe'; 'Wright, Lindsay'; Ken Walker
Cc: Binkley, Keith; 'Ludwig, Noel - FS'; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)
Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

Dear ARC Members,
Attached is the agenda and standard conditions update document for our discussion at the ARC meeting next week (April 18 at 1:30). Please let me know if you plan on attending in-person; otherwise, we'll be talking with you soon over the Skype meeting on Tuesday.

Dawn Presler
Sr. Environmental Coordinator
(425) 783-1709

PUD No. 1 of Snohomish County
PO Box 1107
Everett, WA 98206-1107

Presler, Dawn

From: Binkley, Keith
Sent: Wednesday, April 05, 2017 3:28 PM
To: 'Anne Savery'; Presler, Dawn; 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV); 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov); 'Rustay, Michael'; 'Mick Matheson'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Wright, Lindsay'
Cc: 'Ludwig, Noel - FS'; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)
Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

Anne - we can discuss this in person but here are some general thoughts for all to consider:

- River temperatures are dictated by conditions within Spada Reservoir,
- Reservoir temperature patterns and profiles vary between years in response to hydrologic and climatic conditions,
 - During a given year, the reservoir is typically isothermal between the month of November and March,
 - When the reservoir is stratified (typically late April through October), the selective withdrawal structure is used to manage temperatures in the two reaches (Reach 1 and Reach 2) of the project fed by the power tunnel,
 - While within reach warming does occur within Reach 1 and Reach 2, the magnitude of the increase in temperature is moderated by the respective instream flow release schedules in these two reaches,
 - Within Reach 3, longitudinal warming does occur seasonally in response to: a) reservoir conditions (temperature and reservoir elevation), b) climatic conditions (solar input and within reach accretion), c) comparatively low release volume (mean 28.1 cfs, and d) geology. While we do have a fairly good data set, our predictive ability is constrained by 'a' and 'b'. We closely watch temperatures at the downstream end of Reach 3 during critical times of year and adjust releases between the two outlets (low and high) to ensure that we remain compliant with State Water Quality Criteria.

I hope this helps. I believe our approach should be to consider the species using the reach, look at the physical habitat information, set an instream flow schedule to meet species needs, and adjust temperature at the release while remaining compliant.

Keith

-----Original Message-----

From: Anne Savery [mailto:asavery@tulaliptribes-nsn.gov]
Sent: Monday, April 03, 2017 3:56 PM
To: Presler, Dawn <DJPresler@SNOPUD.com>; 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV) <JPAC461@ECY.WA.GOV>; 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov) <brock.applegate@dfw.wa.gov>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Mick Matheson' <mick.matheson@ci.sultan.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>
Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; 'Ludwig, Noel - FS' <n ludwig@fs.fed.us>; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov) <Tim_Romanski@fws.gov>
Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

Presler, Dawn

From: Binkley, Keith
Sent: Thursday, May 18, 2017 1:39 PM
To: mgagner@r2usa.com; 'Pacheco, James (ECY)'
Subject: Jackson - Sultan River - Reach 3 - WUA update

Mike – Jim, Brock, Anne, and I chatted about the desired update. We would like the full suite of species and life stages and have the flow range extend up to 260 cfs, in increments as follows:

- From 35 to 100 cfs (in 5 cfs increments)
- From 101 to 260 cfs (in 10 cfs increments)

Please coordinate with Jim on exchange of current curves. We need this update as soon as possible and no later than the end of May. Is that possible?

Keith

Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)

Presler, Dawn

From: Binkley, Keith
Sent: Thursday, June 08, 2017 12:25 PM
To: 'Pacheco, James (ECY)'; Anne Savery (asavery@tulaliptribes-nsn.gov); Applegate, Brock A (DFW)
Subject: RE: Reach 3 - shaping of flow budget WY 2017-18

I will get you that information by close of business today. Are you in tomorrow?

From: Pacheco, James (ECY) [mailto:JPAC461@ECY.WA.GOV]
Sent: Thursday, June 08, 2017 11:16 AM
To: Binkley, Keith <KMBinkley@SNOPUD.com>; Anne Savery (asavery@tulaliptribes-nsn.gov) <asavery@tulaliptribes-nsn.gov>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>
Subject: RE: Reach 3 - shaping of flow budget WY 2017-18

Thanks Keith.

I didn't realize you updated the WUA percentages or verified the (off the top of my head) 30% figure. I think the only thing we are missing is the average depth of each transect and possibly the wetted width at the respective spawning flows compared to the depth/width at the end of the incubation period.
Jim

From: Binkley, Keith [mailto:KMBinkley@SNOPUD.com]
Sent: Tuesday, June 06, 2017 9:35 AM
To: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; Anne Savery (asavery@tulaliptribes-nsn.gov) <asavery@tulaliptribes-nsn.gov>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>
Subject: RE: Reach 3 - shaping of flow budget WY 2017-18

Jim – I think we might be talking past each other. We are building the analysis on the 4.75 mile Upper Reach that extends from RM 15.75 downstream to RM 11. This sub-reach accounts for 78% of Reach 3. We choose the 30% accretion value as a relatively conservative addition to our scheduled release. With those values, I went straight to [R2's updated analysis for the upper reach](#) and extracted the percent (rounding down) of maximum habitat values and put them in the table (columns X, Y, and Z). For the 1.32 mile Lower Reach that extends from RM 11 to the Diversion Dam (RM 9.7), I revised the file I sent yesterday and just used the same 30% accretion values to derive the habitat values for the lower reach. For this, I used [R2's updated analysis for the lower reach](#).

I think this approach gives a good approximation of what we might expect to see in the next Water Year. We can always use of lower accretion statistic, if that provides additional value.

Keith

From: Pacheco, James (ECY) [mailto:JPAC461@ECY.WA.GOV]
Sent: Tuesday, June 06, 2017 7:28 AM
To: Binkley, Keith <KMBinkley@SNOPUD.com>; Anne Savery (asavery@tulaliptribes-nsn.gov) <asavery@tulaliptribes-nsn.gov>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>
Subject: RE: Reach 3 - shaping of flow budget WY 2017-18

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Hi Keith.

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We have a strong tool and outline for what we intent, but we are missing some important compoents.

We need columns W-Z, AC=AE, and AK-AN to read the updated % habitat information we just received and calculate the percent of the accretion flow we want to use for the upper reach.

After that, one more phone call should finalize the schedule.

Jim

From: Binkley, Keith [<mailto:KMBinkley@SNOPUD.com>]

Sent: Monday, June 05, 2017 5:14 PM

To: Anne Savery (asavery@tulaliptribes-nsn.gov) <asavery@tulaliptribes-nsn.gov>; Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>

Subject: Reach 3 - shaping of flow budget WY 2017-18

Importance: High

Thanks for your patience as we worked through today's exercise. I believe the attached accurately reflects our discussion. It includes the updates to the accretion statistics and instream flow modeling as well as an analysis of the magnitude of changes in WSE associated with bi-monthly flow reductions. Please provide feedback / comments as soon as possible so we can submit the schedule to FERC on time.

Thanks again,

Keith

Keith Binkley

Manager of Natural Resources

Snohomish County Public Utility District

425 783 1769 (office)

425 293 6201 (cell)

Presler, Dawn

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Sent: Tuesday, June 06, 2017 9:35 AM
To: 'Pacheco, James (ECY)'; Anne Savery (asavery@tulaliptribes-nsn.gov); Applegate, Brock A (DFW)
Subject: RE: Reach 3 - shaping of flow budget WY 2017-18
Attachments: Variable Instream Flow Release Schedule for Reach 3 - 2017-2018 revised 060617.xls; Sultan Reach 3 Lower WUA 06_05_2017.xlsx; Sultan Reach 3 Upper WUA 06_05_2017.xlsx

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To: Binkley, Keith <KMBinkley@SNOPUD.com>; Anne Savery (asavery@tulaliptribes-nsn.gov) <asavery@tulaliptribes-nsn.gov>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>
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Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)

Presler, Dawn

From: Binkley, Keith
Sent: Thursday, June 08, 2017 12:50 PM
To: 'Pacheco, James (ECY)'; Anne Savery (asavery@tulaliptribes-nsn.gov); Applegate, Brock A (DFW)
Subject: RE: Reach 3 - shaping of flow budget WY 2017-18

I am open all day except between 11 am and 1 pm.

From: Pacheco, James (ECY) [mailto:JPAC461@ECY.WA.GOV]
Sent: Thursday, June 08, 2017 12:40 PM
To: Binkley, Keith <KMBinkley@SNOPUD.com>; Anne Savery (asavery@tulaliptribes-nsn.gov) <asavery@tulaliptribes-nsn.gov>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>
Subject: RE: Reach 3 - shaping of flow budget WY 2017-18

I scheduled myself for 2 hours. That times would you like?

From: Binkley, Keith [mailto:KMBinkley@SNOPUD.com]
Sent: Thursday, June 08, 2017 12:25 PM
To: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; Anne Savery (asavery@tulaliptribes-nsn.gov) <asavery@tulaliptribes-nsn.gov>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>
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Thanks again,

Keith

Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)

Presler, Dawn

From: Binkley, Keith
Sent: Friday, May 12, 2017 3:38 PM
To: 'Mike Gagner'; Pacheco, James (ECY)
Subject: RE: sultan phabsim

Jim – it would be great if you could connect with Mike on Monday or Tuesday so that we have something to discuss on the call we have scheduled for Thursday.

Thanks!

Keith

From: Mike Gagner [mailto:mgagner@r2usa.com]
Sent: Friday, May 12, 2017 12:10 PM
To: Pacheco, James (ECY) <JPAC461@ecy.wa.gov>
Cc: Binkley, Keith <KMBinkley@SNOPUD.com>
Subject: RE: sultan phabsim

CAUTION: THIS EMAIL IS FROM AN EXTERNAL SENDER.
Do not click on links or open attachments if the sender is unknown or the email is suspect.

Hey Jim,
FYI – I'm in the office Monday and Tuesday of next week, but then in the field from the 17th-25th. Please let me know if there is a time between now and next Wednesday when we can discuss your data needs for the Sultan River project. Hope your move has been going well.

Mike

From: Pacheco, James (ECY) [mailto:JPAC461@ECY.WA.GOV]
Sent: Wednesday, April 26, 2017 3:26 PM
To: Mike Gagner
Subject: RE: sultan phabsim

Tired from moving, but work is good.
I'm out until Monday if you need anything.
Jim

From: Mike Gagner [mailto:mgagner@r2usa.com]
Sent: Wednesday, April 26, 2017 3:17 PM
To: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>
Subject: RE: sultan phabsim

Hi Jim,
I have a call into Keith to discuss the options and will let you know asap what we decide.
Hope all is well!

Mike

From: Pacheco, James (ECY) [mailto:JPAC461@ECY.WA.GOV]

Sent: Wednesday, April 26, 2017 10:32 AM

To: Mike Gagner; Binkley, Keith

Cc: 'Anne Savery'; Applegate, Brock A (DFW)

Subject: sultan phabsim

Hi Mike.

The state's preference curve database has been updated. I hope I notified last year with a link to the new Instream Flow Study Guidelines. If not I apologize. For future reference I attached the 2016 preference curves in two different formats. We use Rhabsim so the curves have two attribute columns. Attribute 1 or A is for spawning and attribute 2 or B is for rearing.

Regarding the Sultan phabsim files, we are doing some analysis on reach 3 and need a new WUA table using the updated preference curves and possibly with some different calibration flows.

What kind of effort would it take you to:

1) rerun the two models with updated preference curves and rerun again if we need different calibration flow,
or

2) to send me an IFG4 file (I believe it downloads to a *.in4 file) for each of the two reach 3 studies (i.e. the file contains all the transects for that study) that I could use to do all the reruns. As an example of what I'm looking for, I attached the IFG4 (I renamed the extension to *.ifg because that's how rhabsin3 likes to import it) for the Samish river study with 6 transects.

You and Keith can talk to see which option works best. If I had a vote, I'd pick option 2.

Thanks for your assistance

Jim

James Pacheco
Natural Resource Scientist (Instream Flows)
Water Resources Program
Washington Department of Ecology
James.Pacheco@ecy.wa.gov
(360) 407-7458

"There is but one straight course, and that is to seek truth and pursue it steadily." --George Washington

Presler, Dawn

From: Binkley, Keith
Sent: Thursday, June 08, 2017 4:30 PM
To: 'Pacheco, James (ECY)'; Anne Savery (asavery@tulaliptribes-nsn.gov); Applegate, Brock A (DFW)
Subject: Sultan Reach 3 Upper - Depth WETP
Attachments: Reach 3 Upper Depth and WETP.xlsx

I condensed the information from R2 down to the attached

*Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)*

Presler, Dawn

From: Binkley, Keith
Sent: Friday, June 02, 2017 9:21 AM
To: Anne Savery (asavery@tulaliptribes-nsn.gov); 'Applegate, Brock A (DFW)'; 'Pacheco, James (ECY)'
Subject: FW: Sultan River Revised PHABSIM Modeling
Attachments: Sultan Reach 3 WUA 06_02_2017.xlsx

Attached is the update. We now have all the tools necessary for our budget shaping discussion on Monday afternoon.

Keith

From: Mike Gagner [mailto:mgagner@r2usa.com]
Sent: Friday, June 02, 2017 8:26 AM
To: Binkley, Keith <KMBinkley@SNOPUD.com>
Subject: Sultan River Revised PHABSIM Modeling

**CAUTION: THIS EMAIL IS FROM AN EXTERNAL SENDER.
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Hi Keith,
Please find attached the results of the new PHABSIM modeling for Reach 3 of the Sultan River.?? As requested, we have made significant adjustments to the modeled flow range and utilized the March 2016 HSC curves except where noted.
??
Please don't hesitate to call or email with any questions.
??
Have a great weekend!
??
Mike Gagner
R2 Resource Consultants
425/556-1288 office
425/749-9516 cell

Presler, Dawn

From: Binkley, Keith
Sent: Thursday, May 18, 2017 11:12 AM
To: 'Pacheco, James (ECY)'; 'Applegate, Brock A (DFW)'; Anne Savery (asavery@tulaliptribes-nsn.gov)
Subject: Jackson - ARC - Reach 3 flow budget
Attachments: Reach 3 Release Budget - development.docx

Hi Jim / Anne / Brock – we are slated for a call this afternoon. I am circulating the attached which is an update to the general approach I circulated on April 26th. I believe we have all the tools we need. Jim and Mike G. (R2) have been in touch regarding an update to the WUA values generated by the model. Mike is primed to conduct the update but asked for guidance on species and life stages. Maybe the best approach is to run it for the full suite of species destined to use Reach 3 (chinook, coho, steelhead, resident rainbow)? Also, he would like guidance on the flow range and I tentatively suggested up to 200 cfs in 10 cfs increments as that would cover the range of release options and accretion values. Once we give him the guidance, he said he could start on this on Monday. With that said, I see today's call as a brief one. I expect a more detailed discussion once we get the updated model results.

Keith

*Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)*

Presler, Dawn

From: Binkley, Keith
Sent: Monday, June 05, 2017 1:51 PM
To: 'Pacheco, James (ECY)'; Anne Savery (asavery@tulaliptribes-nsn.gov); 'Applegate, Brock A (DFW)'
Subject: Reach 3 WUA - spilt as Upper and Lower reaches
Attachments: Sultan Reach 3 Lower WUA 06_05_2017.xlsx; Sultan Reach 3 Upper WUA 06_05_2017.xlsx

A more refined analysis.....

*Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)*

Presler, Dawn

From: Binkley, Keith
Sent: Wednesday, May 10, 2017 10:30 AM
To: Pacheco, James (ECY); Anne Savery (asavery@tulaliptribes-nsn.gov); 'Applegate, Brock A (DFW)'
Subject: Updated Accretion Information
Attachments: Q3 Accretion Update May 2017.xlsx

Attached is an update from the hydrologic model. It contains cumulative accretion values for Reach 3 (aka Q3) which we can use for our budget shaping discussions.

*Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)*

Presler, Dawn

From: Binkley, Keith
Sent: Friday, April 14, 2017 3:14 PM
To: 'Pacheco, James (ECY)'
Subject: FW: Jackson - Reach 3 - WUA - formula used to composite upper and lower reach values

The bone will be delivered on Tuesday

From: Mike Gagner [mailto:mgagner@r2usa.com]
Sent: Friday, April 14, 2017 3:06 PM
To: Binkley, Keith <KMBinkley@SNOPUD.com>
Subject: RE: Jackson - Reach 3 - WUA - formula used to composite upper and lower reach values

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Hey Keith,
I've found the spreadsheet where all the calculations were done to generate the composite WUA curves, but I'm hesitant to send it your way without confirming with Chiming that I'm interpreting this correctly. He is back on Monday, but I'm out for the holiday. Any chance we can get this to you on Tuesday? If not, just let me know and I'll see if he can send something to you sooner.
Have a great holiday!
??
Mike
??
??

From: Binkley, Keith [mailto:KMBinkley@SNOPUD.com]
Sent: Friday, April 14, 2017 9:14 AM
To: mgagner@r2usa.com
Subject: Jackson - Reach 3 - WUA - formula used to composite upper and lower reach values
??

Hi Mike ??? I hope you are well. We are working on flows for Reach 3. Will you look at the attached pdf and then the attached Excel file and provide the formula used to combine the upper and lower reach values into an overall value?
??

Thanks

??

Keith

??

Keith Binkley

Manager of Natural Resources

Snohomish County Public Utility District

425 783 1769 (office)

425 293 6201 (cell)

??

Presler, Dawn

From: Binkley, Keith
Sent: Tuesday, April 18, 2017 10:49 AM
To: 'Pacheco, James (ECY)'
Subject: FW: Jackson - Reach 3 - WUA - formula used to composite upper and lower reach values

[More information.....](#)

From: Mike Gagner [mailto:mgagner@r2usa.com]
Sent: Tuesday, April 18, 2017 10:29 AM
To: Binkley, Keith <KMBinkley@SNOPUD.com>
Subject: RE: Jackson - Reach 3 - WUA - formula used to composite upper and lower reach values

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Transect Weighting		
TR	% Weighting	??
R3U_TR1	8.7%	??
R3U_TR2	4.9%	??
R3U_TR3	4.9%	??
R3U_TR4	19.1%	??
R3U_TR5	35.8%	??
R3U_TR6	4.9%	??

Transect Weighting		
TR	% Weighting	??
R3L_TR1	1.4%	??
R3L_TR2	2.3%	??
R3L_TR3	2.9%	??
R3L_TR4	1.4%	??
R3L_TR5	10.0%	??
R3L_TR6	2.3%	??
R3L_TR7	1.4%	??

??

??

Reach 3 Upper and Lower Sub-reach Weighting

Sultan River Reach 3 Total Habitat Area (acres)

6 Upper TRs and 7 Lower TRs

W_U3= 4.44 W_L3= 1.24 miles

??

??

??

From: Binkley, Keith [mailto:KMBinkley@SNOPUD.com]

Sent: Friday, April 14, 2017 9:14 AM

To: mgagner@r2usa.com

Subject: Jackson - Reach 3 - WUA - formula used to composite upper and lower reach values

??

Hi Mike ??? I hope you are well.?? We are working on flows for Reach 3.?? Will you look at the attached pdf and then the attached Excel file and provide the formula used to combine the upper and lower reach values into an overall value?

??

Thanks

??

Keith

??

Keith Binkley

Manager of Natural Resources

Snohomish County Public Utility District

425 783 1769 (office)

425 293 6201 (cell)

??

Presler, Dawn

From: Binkley, Keith
Sent: Monday, April 24, 2017 2:30 PM
To: 'Elizabeth Babcock - NOAA Federal'; 'Wright, Lindsay'; Anne Savery (asavery@tulaliptribes-nsn.gov); 'tom@americanwhitewater.org'; Jim Miller (JMiller@everettwa.gov); Vacirca, Richard -FS; 'Pacheco, James (ECY)'; Ken Walker (ken.walker@ci.sultan.wa.us); 'Applegate, Brock A (DFW)'
Cc: 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov); Presler, Dawn
Subject: FW: Sultan River Canyon - Roads Decommissioning
Attachments: DWPP-2017-SultanRoadsDecomPhI.docx;
AppendixA_vicinity_map_SultanRdDecomPhaseI.docx;
AppendixB_road_crossing_failures_SultanRdDecomPhaseI.docx;
AppendixC_log_stringer_bridge_SultanRdDecomPhaseI.docx

ARC members – the Forest Service has plans to decommission the road leading into the Sultan River Canyon at the Stringer Bridge (RM 14.3). While I seriously doubt that any restoration opportunities exist within the canyon, I thought it important to inform you that access will be going away. The email from Richard and the attachments provides some background. Let me know your thoughts or concerns.

Keith

From: Vacirca, Richard -FS [mailto:rvacirca@fs.fed.us]
Sent: Tuesday, April 04, 2017 11:10 AM
To: Binkley, Keith <KMBinkley@SNOPUD.com>
Cc: Chang, Karen -FS <kchang@fs.fed.us>; Bryden, Andy -FS <abryden@fs.fed.us>
Subject: RE: Sultan River Canyon - Roads Decommissioning

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Keith, thanks for inquiry below. We are trying to find funding sources to implement the Sultan Watershed road decommissioning work. I've attached a proposal that we put together a couple months back to try and give you a bit of the scope and scale of this work. It would be better if this work of truly complimentary with any in-stream work that potentially could be done. Maybe it would be better to meet sometime to discuss this more thoroughly. thanks

Forest Fisheries Program Manager
Mt. Baker-Snoqualmie National Forest
425-783-6040
rvacirca@fs.fed.us

From: Binkley, Keith [mailto:KMBinkley@SNOPUD.com]
Sent: Friday, March 24, 2017 10:25 AM
To: Chang, Karen -FS <kchang@fs.fed.us>; Vacirca, Richard -FS <rvacirca@fs.fed.us>
Subject: FW: Sultan River Canyon - Roads Decommissioning

Richard / Karen – I sent this to Andy several months ago and have not heard back. I am not sure of the timeline on the decommissioning but I don't want to miss out on any potential opportunities. Thanks in advance for any input.

Keith

From: Binkley, Keith
Sent: Monday, November 21, 2016 9:32 AM
To: Andrew Bryden (abryden@fs.fed.us) <abryden@fs.fed.us>
Subject: Sultan River Canyon - Roads Decommissioning

Hey Andy – passage at the Diversion Dam is complete and last week, we documented coho spawning near the Stringer Bridge. We got to thinking that there may be some opportunities for habitat enhancement up in that neck of the woods and that it would be most logical to sequence this work with the road decommissioning effort. At this point, we are just tossing around some concepts like maybe off-channel improvements or engineered log jams. I am planting this seed so that we don't miss out on any potential opportunities. Kick it around. Your thoughts are always appreciated.

Keith

Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)

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Presler, Dawn

From: Binkley, Keith
Sent: Friday, May 12, 2017 3:38 PM
To: 'Mike Gagner'; Pacheco, James (ECY)
Subject: RE: sultan phabsim

Jim – it would be great if you could connect with Mike on Monday or Tuesday so that we have something to discuss on the call we have scheduled for Thursday.

Thanks!

Keith

From: Mike Gagner [mailto:mgagner@r2usa.com]
Sent: Friday, May 12, 2017 12:10 PM
To: Pacheco, James (ECY) <JPAC461@ecy.wa.gov>
Cc: Binkley, Keith <KMBinkley@SNOPUD.com>
Subject: RE: sultan phabsim

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Hey Jim,
FYI – I'm in the office Monday and Tuesday of next week, but then in the field from the 17th-25th. Please let me know if there is a time between now and next Wednesday when we can discuss your data needs for the Sultan River project. Hope your move has been going well.

Mike

From: Pacheco, James (ECY) [mailto:JPAC461@ECY.WA.GOV]
Sent: Wednesday, April 26, 2017 3:26 PM
To: Mike Gagner
Subject: RE: sultan phabsim

Tired from moving, but work is good.
I'm out until Monday if you need anything.
Jim

From: Mike Gagner [mailto:mgagner@r2usa.com]
Sent: Wednesday, April 26, 2017 3:17 PM
To: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>
Subject: RE: sultan phabsim

Hi Jim,
I have a call into Keith to discuss the options and will let you know asap what we decide.
Hope all is well!

Mike

From: Pacheco, James (ECY) [mailto:JPAC461@ECY.WA.GOV]

Sent: Wednesday, April 26, 2017 10:32 AM

To: Mike Gagner; Binkley, Keith

Cc: 'Anne Savery'; Applegate, Brock A (DFW)

Subject: sultan phabsim

Hi Mike.

The state's preference curve database has been updated. I hope I notified last year with a link to the new Instream Flow Study Guidelines. If not I apologize. For future reference I attached the 2016 preference curves in two different formats. We use Rhabsim so the curves have two attribute columns. Attribute 1 or A is for spawning and attribute 2 or B is for rearing.

Regarding the Sultan phabsim files, we are doing some analysis on reach 3 and need a new WUA table using the updated preference curves and possibly with some different calibration flows.

What kind of effort would it take you to:

1) rerun the two models with updated preference curves and rerun again if we need different calibration flow,
or

2) to send me an IFG4 file (I believe it downloads to a *.in4 file) for each of the two reach 3 studies (i.e. the file contains all the transects for that study) that I could use to do all the reruns. As an example of what I'm looking for, I attached the IFG4 (I renamed the extension to *.ifg because that's how rhabsin3 likes to import it) for the Samish river study with 6 transects.

You and Keith can talk to see which option works best. If I had a vote, I'd pick option 2.

Thanks for your assistance

Jim

James Pacheco
Natural Resource Scientist (Instream Flows)
Water Resources Program
Washington Department of Ecology
James.Pacheco@ecy.wa.gov
(360) 407-7458

"There is but one straight course, and that is to seek truth and pursue it steadily." --George Washington

Presler, Dawn

From: Binkley, Keith
Sent: Monday, June 05, 2017 5:14 PM
To: Anne Savery (asavery@tulaliptribes-nsn.gov); 'Pacheco, James (ECY)'; 'Applegate, Brock A (DFW)'
Subject: Reach 3 - shaping of flow budget WY 2017-18
Attachments: Variable Instream Flow Release Schedule for Reach 3 - 2017-2018 revised 060517.xls
Importance: High

Thanks for your patience as we worked through today's exercise. I believe the attached accurately reflects our discussion. It includes the updates to the accretion statistics and instream flow modeling as well as an analysis of the magnitude of changes in WSE associated with bi-monthly flow reductions. Please provide feedback / comments as soon as possible so we can submit the schedule to FERC on time.

Thanks again,

Keith

*Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)*

Presler, Dawn

From: Binkley, Keith
Sent: Monday, April 24, 2017 10:43 AM
To: 'Pacheco, James (ECY)'
Subject: RE: Jackson - ARC - Reach 3 flow shaping

Let's go with Wednesday morning.

From: Pacheco, James (ECY) [mailto:JPAC461@ECY.WA.GOV]
Sent: Friday, April 21, 2017 3:21 PM
To: Binkley, Keith <KMBinkley@SNOPUD.com>
Subject: RE: Jackson - ARC - Reach 3 flow shaping

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Hi Keith.

I have devoured the spreadsheets and am ready to spew out lots of irrelevant details and tangents for your interest and enjoyment.

I'm free all day Monday and Tuesday/Wednesday morning to help develop the new regime.

Jim

From: Binkley, Keith [mailto:KMBinkley@SNOPUD.com]
Sent: Tuesday, April 18, 2017 2:26 PM
To: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>
Subject: Jackson - ARC - Reach 3 flow shaping

Jim – we missed you on the ARC call. It didn't make sense to have the conversation without you present so we decided to go the sub-committee route. So, you, me, Anne, and Brock will develop a schedule that we all feel good about. I think taking the time to do a detailed analysis now will pay off since we can just have this be our default regime going forward. So, I suggest you churn on what I have sent you and let me know when you are complete. After we have that component, we should be able to conference folks in to discuss.

FYI - While I don't have Mike G. on contract for this work, he is willing to answer a few questions you might have on the IFIM related aspect.

Feel free to call to discuss,

Keith

Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)

Presler, Dawn

From: Binkley, Keith
Sent: Wednesday, April 26, 2017 10:47 AM
To: 'Pacheco, James (ECY)'; Applegate, Brock A (DFW); 'Anne Savery'
Subject: RE: Jackson - ARC - Reach 3 flow shaping
Attachments: Reach 3 Release Budget - development.docx

Thanks again for the spontaneity

Attached is the general structure I had in my mind for addressing this

Keith

From: Pacheco, James (ECY) [<mailto:JPAC461@ECY.WA.GOV>]
Sent: Wednesday, April 26, 2017 9:26 AM
To: Binkley, Keith <KMBinkley@SNOPUD.com>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>
Subject: RE: Jackson - ARC - Reach 3 flow shaping

Thanks Keith. Brock is setting up a call line for 9:30.
He will be sending out the info shortly.
Jim

From: Binkley, Keith [<mailto:KMBinkley@SNOPUD.com>]
Sent: Wednesday, April 26, 2017 8:12 AM
To: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>
Subject: RE: Jackson - ARC - Reach 3 flow shaping

I am flexible – let me know what works for you. I figured maybe you and I could talk through it and then bring Anne and Brock in at a later date. Are you okay with that?

From: Pacheco, James (ECY) [<mailto:JPAC461@ECY.WA.GOV>]
Sent: Tuesday, April 25, 2017 5:15 PM
To: Binkley, Keith <KMBinkley@SNOPUD.com>
Subject: RE: Jackson - ARC - Reach 3 flow shaping

Yes, what time?

From: Binkley, Keith [<mailto:KMBinkley@SNOPUD.com>]
Sent: Tuesday, April 25, 2017 3:20 PM
To: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>
Subject: RE: Jackson - ARC - Reach 3 flow shaping

We on for tomorrow morning?

From: Pacheco, James (ECY) [<mailto:JPAC461@ECY.WA.GOV>]
Sent: Friday, April 21, 2017 3:21 PM

To: Binkley, Keith <KMBinkley@SNOPUD.com>
Subject: RE: Jackson - ARC - Reach 3 flow shaping

**CAUTION: THIS EMAIL IS FROM AN EXTERNAL SENDER.
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Hi Keith.

I have devoured the spreadsheets and am ready to spew out lots of irrelevant details and tangents for your interest and enjoyment.

I'm free all day Monday and Tuesday/Wednesday morning to help develop the new regime.

Jim

From: Binkley, Keith [<mailto:KMBinkley@SNOPUD.com>]

Sent: Tuesday, April 18, 2017 2:26 PM

To: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>

Subject: Jackson - ARC - Reach 3 flow shaping

Jim – we missed you on the ARC call. It didn't make sense to have the conversation without you present so we decided to go the sub-committee route. So, you, me, Anne, and Brock will develop a schedule that we all feel good about. I think taking the time to do a detailed analysis now will pay off since we can just have this be our default regime going forward. So, I suggest you churn on what I have sent you and let me know when you are complete. After we have that component, we should be able to conference folks in to discuss.

FYI - While I don't have Mike G. on contract for this work, he is willing to answer a few questions you might have on the IFIM related aspect.

Feel free to call to discuss,

Keith

*Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)*

Presler, Dawn

From: Binkley, Keith
Sent: Thursday, April 13, 2017 8:53 AM
To: 'Pacheco, James (ECY)'; Presler, Dawn
Subject: RE: JHP (FERC No. 2157) - ARC mtg supplemental material

Yes

The reach specific estimates are based on a correlation with a gaged location.

From: Pacheco, James (ECY) [mailto:JPAC461@ECY.WA.GOV]
Sent: Thursday, April 13, 2017 7:39 AM
To: Binkley, Keith <KMBinkley@SNOPUD.com>; Presler, Dawn <DJPresler@SNOPUD.com>
Subject: RE: JHP (FERC No. 2157) - ARC mtg supplemental material

Ribbing is great...to chew on. I don't mind at all.

Is this the same model you used during license negotiations? If so, how often do you test or verify it?

Jim

From: Binkley, Keith [mailto:KMBinkley@SNOPUD.com]
Sent: Wednesday, April 12, 2017 4:23 PM
To: Presler, Dawn <DJPresler@SNOPUD.com>
Cc: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>
Subject: RE: JHP (FERC No. 2157) - ARC mtg supplemental material

That guy sure is predictable. Throw him a bone and he starts munching on it right away. That is good.

Oh Hi Jim – regarding your inquiry, those columns are populated from our hydrologic model.

I do appreciate you and your mind and I hope you appreciate “the ribbing”.

Peace out,

Keith

From: Presler, Dawn
Sent: Wednesday, April 12, 2017 4:10 PM
To: Binkley, Keith <KMBinkley@SNOPUD.com>
Cc: 'James (ECY) Pacheco' <JPAC461@ECY.WA.GOV>
Subject: Fwd: JHP (FERC No. 2157) - ARC mtg supplemental material

Keith - please see and respond to Jim's question below regarding your excel tool. Thanks.

Dawn

Begin forwarded message:

From: "Pacheco, James (ECY)" <JPAC461@ECY.WA.GOV>
Date: April 12, 2017 at 3:52:09 PM PDT
To: "Presler, Dawn" <DJPresler@SNOPUD.com>
Subject: RE: JHP (FERC No. 2157) - ARC mtg supplemental material

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Do not click on links or open attachments if the sender is unknown or the email is suspect.

Hi Dawn.

Please refresh my memory and let me know how the district calculated columns J-N of the 'variable ISF release schedule' file.

Thanks

Jim

From: Presler, Dawn [<mailto:DJPresler@SNOPUD.com>]
Sent: Wednesday, April 12, 2017 1:16 PM
To: 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>; 'Ken Walker' <ken.walker@ci.sultan.wa.us>
Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; 'Ludwig, Noel - FS' <nludwig@fs.fed.us>; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)' <Tim_Romanski@fws.gov>
Subject: JHP (FERC No. 2157) - ARC mtg supplemental material

Dear ARC Members,

Attached is the spreadsheet tool that we can use as part of our discussion regarding the Reach 3 instream flow schedule for WY2017-18 that was previously emailed out (also attachments).

Dawn

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Sent: Tuesday, April 11, 2017 2:09 PM
To: 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV)' <JPAC461@ECY.WA.GOV>; 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov)' <brock.applegate@dfw.wa.gov>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>; Ken Walker <ken.walker@ci.sultan.wa.us>
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Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

Dear ARC Members,

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Dawn Presler
Sr. Environmental Coordinator
(425) 783-1709

Presler, Dawn

From: Binkley, Keith
Sent: Thursday, April 13, 2017 2:19 PM
To: 'Pacheco, James (ECY)'; Presler, Dawn
Subject: RE: JHP (FERC No. 2157) - ARC mtg supplemental material
Attachments: Copy of Sultan R3 WUA % max Tables.xls

Ok Jim – one more bone to throw at you – you might want to review the attached

From: Pacheco, James (ECY) [mailto:JPAC461@ECY.WA.GOV]
Sent: Thursday, April 13, 2017 7:39 AM
To: Binkley, Keith <KMBinkley@SNOPUD.com>; Presler, Dawn <DJPresler@SNOPUD.com>
Subject: RE: JHP (FERC No. 2157) - ARC mtg supplemental material

Ribbing is great...to chew on. I don't mind at all.
Is this the same model you used during license negotiations? If so, how often do you test or verify it?
Jim

From: Binkley, Keith [mailto:KMBinkley@SNOPUD.com]
Sent: Wednesday, April 12, 2017 4:23 PM
To: Presler, Dawn <DJPresler@SNOPUD.com>
Cc: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>
Subject: RE: JHP (FERC No. 2157) - ARC mtg supplemental material

That guy sure is predictable. Throw him a bone and he starts munching on it right away. That is good.

Oh Hi Jim – regarding your inquiry, those columns are populated from our hydrologic model.

I do appreciate you and your mind and I hope you appreciate “the ribbing”.

Peace out,

Keith

From: Presler, Dawn
Sent: Wednesday, April 12, 2017 4:10 PM
To: Binkley, Keith <KMBinkley@SNOPUD.com>
Cc: 'James (ECY) Pacheco' <JPAC461@ECY.WA.GOV>
Subject: Fwd: JHP (FERC No. 2157) - ARC mtg supplemental material

Keith - please see and respond to Jim's question below regarding your excel tool. Thanks.

Dawn

Begin forwarded message:

From: "Pacheco, James (ECY)" <JPAC461@ECY.WA.GOV>
Date: April 12, 2017 at 3:52:09 PM PDT

To: "Presler, Dawn" <DJPresler@SNOPUD.com>
Subject: RE: JHP (FERC No. 2157) - ARC mtg supplemental material

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Hi Dawn.

Please refresh my memory and let me know how the district calculated columns J-N of the 'variable ISF release schedule' file.

Thanks

Jim

From: Presler, Dawn [<mailto:DJPresler@SNOPUD.com>]
Sent: Wednesday, April 12, 2017 1:16 PM
To: 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>; 'Ken Walker' <ken.walker@ci.sultan.wa.us>
Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; 'Ludwig, Noel - FS' <nludwig@fs.fed.us>; 'Tim Romanski@fws.gov' (Tim_Romanski@fws.gov) <Tim_Romanski@fws.gov>
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Sent: Tuesday, April 11, 2017 2:09 PM
To: 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV)' <JPAC461@ECY.WA.GOV>; 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov)' <brock.applegate@dfw.wa.gov>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>; Ken Walker <ken.walker@ci.sultan.wa.us>
Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; 'Ludwig, Noel - FS' <nludwig@fs.fed.us>; 'Tim Romanski@fws.gov' (Tim_Romanski@fws.gov) <Tim_Romanski@fws.gov>
Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

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Dawn Presler
Sr. Environmental Coordinator
(425) 783-1709

PUD No. 1 of Snohomish County

Presler, Dawn

From: Binkley, Keith
Sent: Monday, April 03, 2017 3:35 PM
To: 'Applegate, Brock A (DFW)'; Presler, Dawn; 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'Anne Savery'; Pacheco, James (ECY); 'Rustay, Michael'; 'Mick Matheson'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Wright, Lindsay'
Cc: 'Ludwig, Noel - FS'; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov); Whitney, Jennifer L (DFW)
Subject: RE: Jackson HydroProject (FERC No. 2157) - draft Reach 3 Instream flow schedule WY17-18
Attachments: Variable Instream Flow Release Schedule for Reach 3 - 2017-2018.xls

Hi Brock – sorry for the lag in responding. Yes, we do want to make sure to not impact incubating eggs. Fortunately, the reduction in flow release during the incubation period comes with a corresponding increase in natural inflows. This is not apparent from looking solely at the table of scheduled releases but is when we look at the attached evaluation tool. I look forward to discussing this in person at our next ARC meeting.

Keith

P.S. Earlier today, we documented our first steelhead redd in Reach 3!

From: Applegate, Brock A (DFW) [mailto:Brock.Applegate@dfw.wa.gov]
Sent: Friday, March 24, 2017 2:10 PM
To: Presler, Dawn <DJPresler@SNOPUD.com>; 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Mick Matheson' <mick.matheson@ci.sultan.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>
Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; 'Ludwig, Noel - FS' <nludwig@fs.fed.us>; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov) <Tim_Romanski@fws.gov>; Whitney, Jennifer L (DFW) <Jennifer.Whitney@dfw.wa.gov>
Subject: RE: Jackson HydroProject (FERC No. 2157) - draft Reach 3 Instream flow schedule WY17-18

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Hi Keith, I will take the first shot at some questions on the instream flow in Reach 3, which have some relevance because I just had some internal conversations on fall chinook periodicity in Reach 3.

We have fall chinook spawning soon after September 1 and I might understand the flow increase. We hold that flow for the remainder of the month. However, you would need to keep the flows at 75% for a couple of months for the incubating eggs to keep them wet. I am calculating a flow of 42 cfs through the end of November. Of course, we might have other flow inputs that I am not considering.

Thanks for your reply. I look forward to this conversation.

Sincerely, Brock

From: Presler, Dawn [mailto:DJPresler@SNOPUD.com]
Sent: Thursday, March 23, 2017 8:53 AM

Presler, Dawn

From: Binkley, Keith
Sent: Wednesday, April 05, 2017 3:28 PM
To: 'Anne Savery'; Presler, Dawn; 'Vacirca, Richard -FS'; 'Elizabeth Babcock - NOAA Federal'; 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV); 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov); 'Rustay, Michael'; 'Mick Matheson'; 'Jim Miller (JMiller@everettwa.gov)'; 'Thomas O'Keefe'; 'Wright, Lindsay'
Cc: 'Ludwig, Noel - FS'; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov)
Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

Anne - we can discuss this in person but here are some general thoughts for all to consider:

- River temperatures are dictated by conditions within Spada Reservoir,
- Reservoir temperature patterns and profiles vary between years in response to hydrologic and climatic conditions,
 - During a given year, the reservoir is typically isothermal between the month of November and March,
 - When the reservoir is stratified (typically late April through October), the selective withdrawal structure is used to manage temperatures in the two reaches (Reach 1 and Reach 2) of the project fed by the power tunnel,
 - While within reach warming does occur within Reach 1 and Reach 2, the magnitude of the increase in temperature is moderated by the respective instream flow release schedules in these two reaches,
 - Within Reach 3, longitudinal warming does occur seasonally in response to: a) reservoir conditions (temperature and reservoir elevation), b) climatic conditions (solar input and within reach accretion), c) comparatively low release volume (mean 28.1 cfs, and d) geology. While we do have a fairly good data set, our predictive ability is constrained by 'a' and 'b'. We closely watch temperatures at the downstream end of Reach 3 during critical times of year and adjust releases between the two outlets (low and high) to ensure that we remain compliant with State Water Quality Criteria.

I hope this helps. I believe our approach should be to consider the species using the reach, look at the physical habitat information, set an instream flow schedule to meet species needs, and adjust temperature at the release while remaining compliant.

Keith

-----Original Message-----

From: Anne Savery [mailto:asavery@tulaliptribes-nsn.gov]
Sent: Monday, April 03, 2017 3:56 PM
To: Presler, Dawn <DJPresler@SNOPUD.com>; 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Elizabeth Babcock - NOAA Federal' <elizabeth.babcock@noaa.gov>; 'James (ECY) Pacheco' (JPAC461@ECY.WA.GOV) <JPAC461@ECY.WA.GOV>; 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov) <brock.applegate@dfw.wa.gov>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Mick Matheson' <mick.matheson@ci.sultan.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Wright, Lindsay' <lindsay_wright@fws.gov>
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Subject: RE: JHP (FERC No. 2157) - draft Reach 3 flow schedule WY17-18

Presler, Dawn

From: Binkley, Keith
Sent: Tuesday, April 18, 2017 2:26 PM
To: 'Pacheco, James (ECY)'
Subject: Jackson - ARC - Reach 3 flow shaping

Jim – we missed you on the ARC call. It didn't make sense to have the conversation without you present so we decided to go the sub-committee route. So, you, me, Anne, and Brock will develop a schedule that we all feel good about. I think taking the time to do a detailed analysis now will pay off since we can just have this be our default regime going forward. So, I suggest you churn on what I have sent you and let me know when you are complete. After we have that component, we should be able to conference folks in to discuss.

FYI - While I don't have Mike G. on contract for this work, he is willing to answer a few questions you might have on the IFIM related aspect.

Feel free to call to discuss,

Keith

Keith Binkley
Manager of Natural Resources
Snohomish County Public Utility District
425 783 1769 (office)
425 293 6201 (cell)

Presler, Dawn

From: Binkley, Keith
Sent: Wednesday, April 26, 2017 8:12 AM
To: 'Pacheco, James (ECY)'
Subject: RE: Jackson - ARC - Reach 3 flow shaping

I am flexible – let me know what works for you. I figured maybe you and I could talk through it and then bring Anne and Brock in at a later date. Are you okay with that?

From: Pacheco, James (ECY) [<mailto:JPAC461@ECY.WA.GOV>]
Sent: Tuesday, April 25, 2017 5:15 PM
To: Binkley, Keith <KMBinkley@SNOPUD.com>
Subject: RE: Jackson - ARC - Reach 3 flow shaping

Yes, what time?

From: Binkley, Keith [<mailto:KMBinkley@SNOPUD.com>]
Sent: Tuesday, April 25, 2017 3:20 PM
To: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>
Subject: RE: Jackson - ARC - Reach 3 flow shaping

We on for tomorrow morning?

From: Pacheco, James (ECY) [<mailto:JPAC461@ECY.WA.GOV>]
Sent: Friday, April 21, 2017 3:21 PM
To: Binkley, Keith <KMBinkley@SNOPUD.com>
Subject: RE: Jackson - ARC - Reach 3 flow shaping

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Hi Keith.

I have devoured the spreadsheets and am ready to spew out lots of irrelevant details and tangents for your interest and enjoyment.

I'm free all day Monday and Tuesday/Wednesday morning to help develop the new regime.

Jim

From: Binkley, Keith [<mailto:KMBinkley@SNOPUD.com>]
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To: Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>
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425 293 6201 (cell)

**Anne**

Hey Anne - I wanted to check in with you before we submit Reach 3 flow schedule to FERC. Jim did some detailed analysis that is reflected in the latest version. Let me know if you have any final questions or concerns.

Thanks

Keith

Today 4:11 PM

Keith I'm good with the reach 3 flows. I talked to Jim after the meeting

Excellent! I am glad that happened! Thank you



iMessage

