Swan Falls Technical Working Group

Presented to the Swan Falls Implementation Group

February 7, 2022

IDAHO DEPARTMENT OF
WATER RESOURCES

TWG Membership

- IDWR
  - Matt Anders, Ethan Geisler, David Hoekema, & Sean Vincent
- WD02
  - Kellie Smith & Rob Whitney
- Idaho Power
  - Frank Gariglio, Janak Timilsena, & Carl Rundberg

TWG Membership (cont'd)

- Consultants
  - Sophia Sigsted (IGWA)
  - Greg Sullivan (City of Pocatello)
  - Kevin Boggs (Jacobs)
- USBR
  - Chris Runyan & Peter Cooper
- USGS
  - Dave Evetts

Initial TWG Goals

1. Facilitate determination of "*Average Daily Flow*" as defined in paragraph 7 of the 1984 Agreement

2. Provide transparency
   - Open, collaborative process w/ stakeholder representation
   - Webpage to compile and disseminate information

3. Advise policymakers re: technical issues

4. Assist with development of management responses/triggers

Swan Falls Agreement Paragraph 7B

37-2471 (Upper Malad), 36-2018 (Clear Lake), 36-2026 (Sand Springs),02-2057 (Upper Salmon), 02-2001A, 02-2001B, 02-2059, 02-2060 (Lower Salmon), 02-2064, 02-2065 (Bliss), 02-2056 (Twin Falls), 02-2036 (Shoshone Falls), 02-2032, 02-4000, 02-4001, and Decree Number 02-0100 (Swan Falls), but such rights in excess of the amounts stated in 7(A) shall be subordinate to subsequent beneficial upstream uses upon approval of such uses by the State in accordance with State law unless the depletion violates or will violate paragraph 7(A). Company retains its right to contest any appropriation of water in accordance with State law. Company further retains the right to compel State to take reasonable steps to insure the average daily flows established by this Agreement at the Murphy U.S.G.S. gauging station. Average daily flow, as used herein, shall be based upon actual flow conditions; thus, any fluctuations resulting from the operation of Company facilities shall not be considered in the calculation of the minimum daily stream flows set forth herein. This paragraph shall constitute a subordination condition.

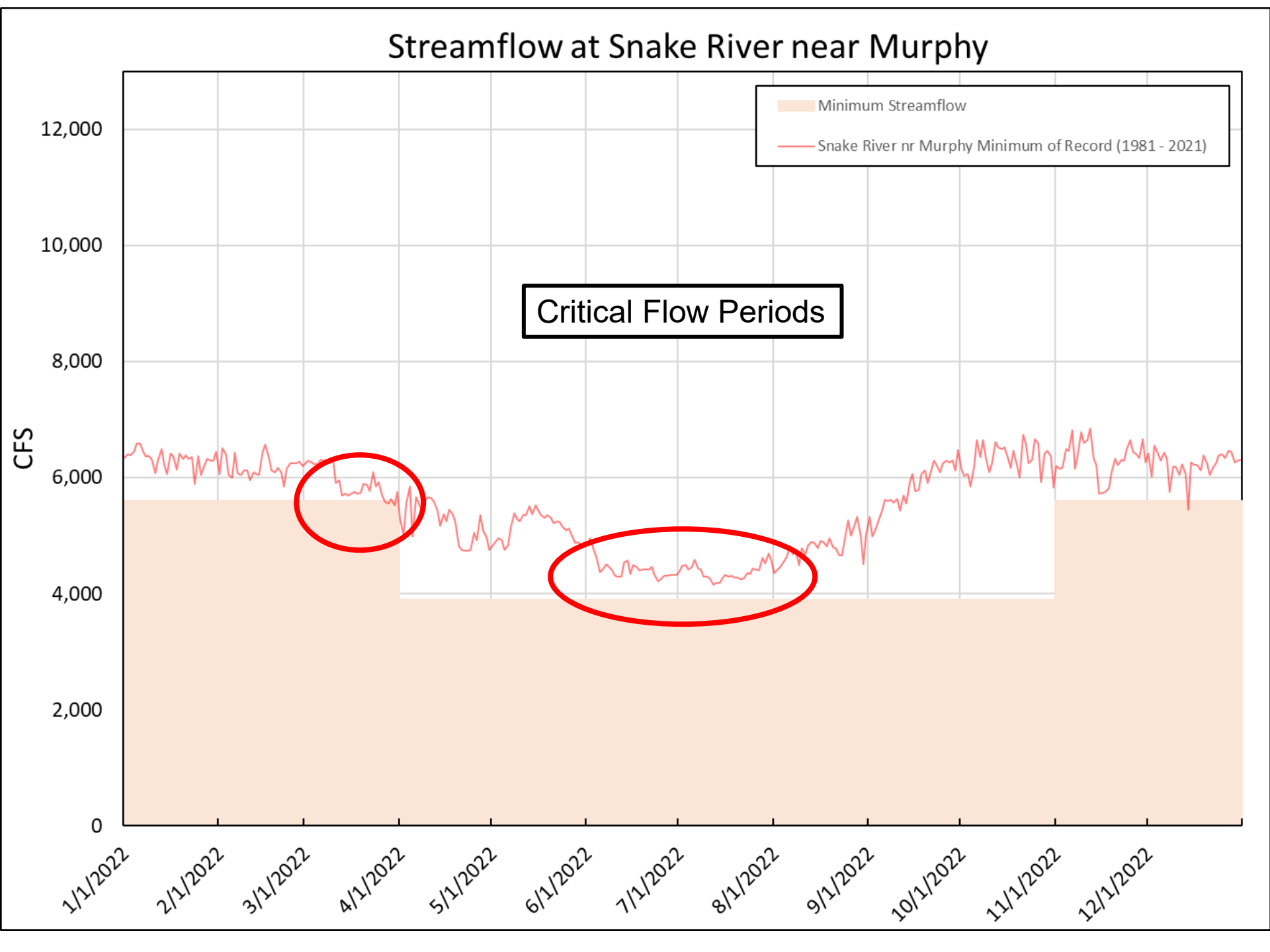
Reservoir	Capacity (acre-feet)
Shoshone Falls	1,500
Upper Salmon Falls	600
Lower Salmon Falls	10,900
Bliss	11,100
CJ Strike	250,000
Swan Falls	7,425

Reservoir	Lower Salmon Falls	Bliss	CJ Strike	Swan Falls
Capacity (acre-ft)	10,900	11,100	250,000	7,425
Surface area (acre)	748	255	7,500	1,525
Permissible stage adjustment (ft)	2	2	1.5	4
Volume (acre-ft)	1,496	510	11,250	6,100
Maximum potential reduction to avg. daily flow (cfs)	754	257	5,672	3,075

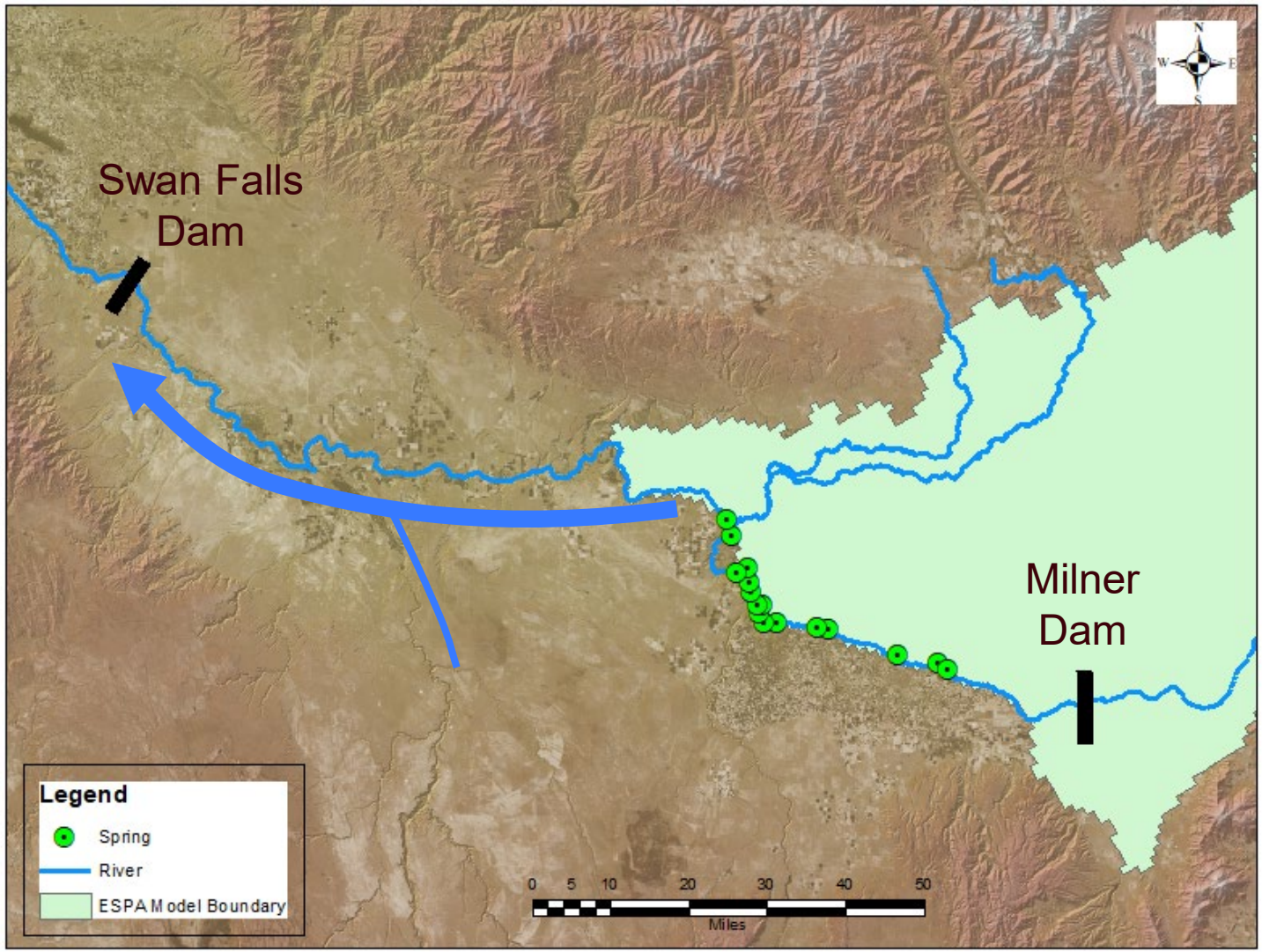
Streamflow Measurement and Monitoring Plan

"*The purpose of this report is to outline a measurement and monitoring protocol for use in distribution of water to hydropower water rights (list of water right #s) and minimum stream flow water rights (2nd list of water right #s).*

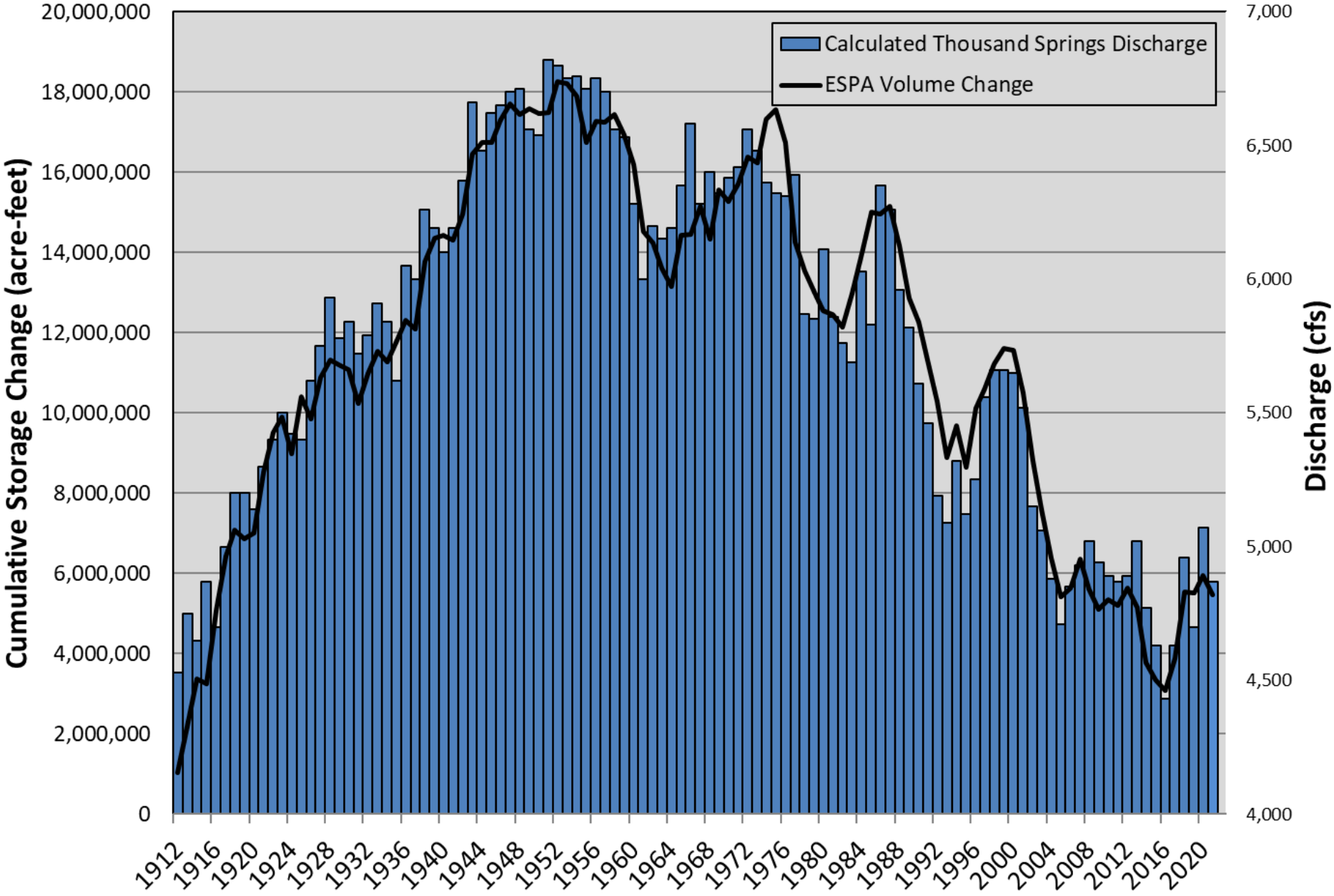
Collectively, these rights provide for an "average daily flow" of 3,900 cfs from April 1 to October 31, and 5,600 cfs from November 1 to March 31 as measured at the Murphy Gaging Station."


Streamflow at Snake River near Murphy
Minimum Streamflow
Snake River nr Murphy Minimum of Record (1981 - 2021)
Critical Flow Periods
CFS
12,000
10,000
8,000
6,000
4,000
2,000
0
1/1/2022
2/1/2022
3/1/2022
4/1/2022
5/1/2022
6/1/2022
7/1/2022
8/1/2022
9/1/2022
10/1/2022
11/1/2022
12/1/2022

ESPA Spring Discharge



ESPA Change in Volume of Water and Thousand Springs Discharge



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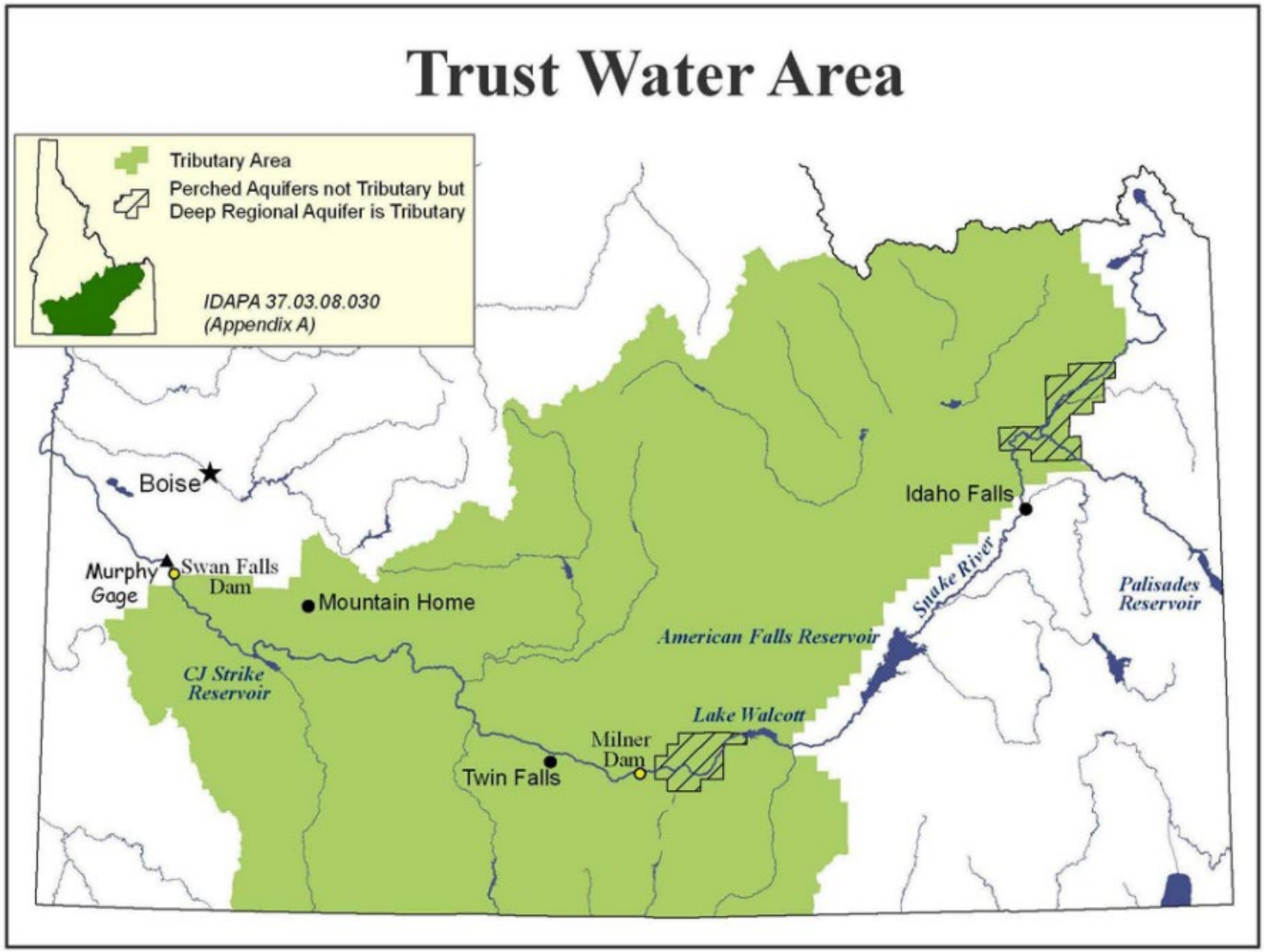
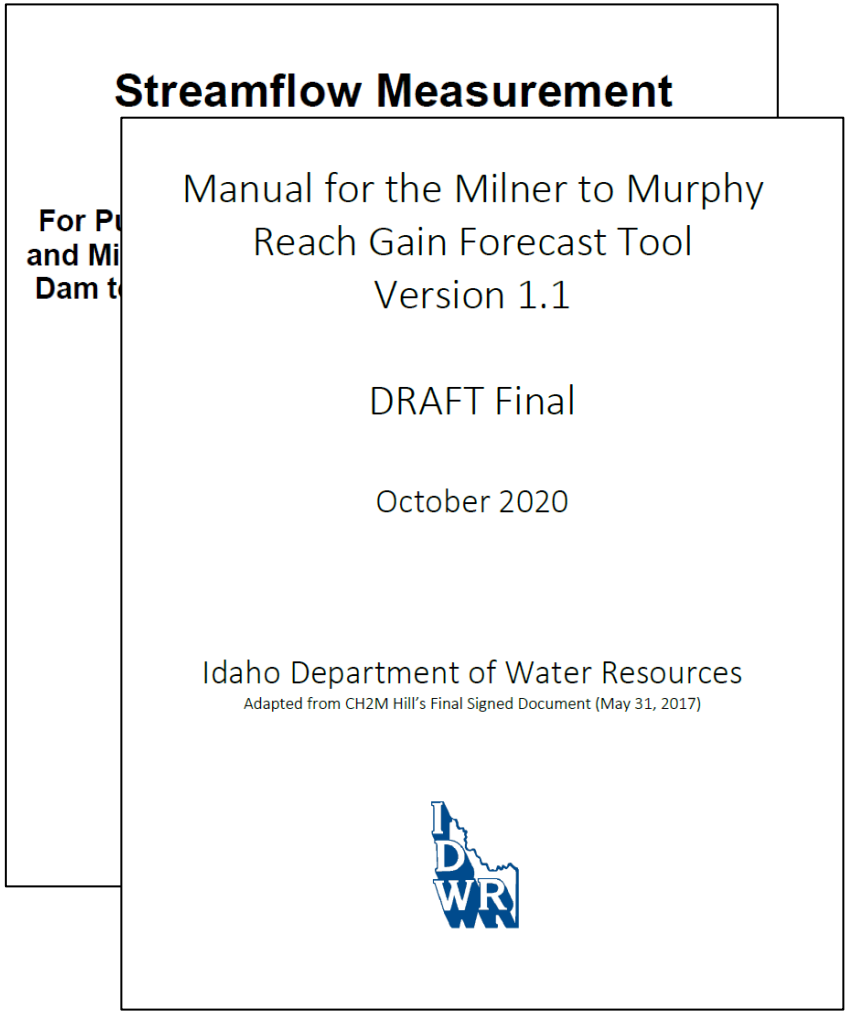
"only the area in which groundwater and surface water is deemed tributary to the Snake River between Milner Dam and the Murphy Gaging Station is to be considered for purposes of distribution of water to the partial decrees listed in Section 1.1."


Trust Water Area
Tributary Area
Perched Aquifers not Tributary but Deep Regional Aquifer is Tributary
IDAPA 37.03.08.030
(Appendix A)
Boise
Idaho Falls
Murphy Gage
Swan Falls Dam
Mountain Home
Snake River
Palisades Reservoir
American Falls Reservoir
CJ Strike Reservoir
Lake Walcott
Milner Dam
Twin Falls

Work to Date

- ~40 TWG meetings since 2012
- Published Streamflow Measurement and Monitoring Plan
- Developed and documented Swan Falls Reach Gain Forecast Tool
- Worked w/ USGS & IPCO to relocate the Snake River near Murphy Gage




Original near Murphy Gage
New near Murphy Gage
Swan Falls Dam
© 2018 Google
Google earth
43°15'40.04" N 116°25'01.94" W elev 2914 ft
Eye alt 10.40 mi


USGS
STREAM GAGING STATION

Work to Date

- ~40 TWG meetings since 2012
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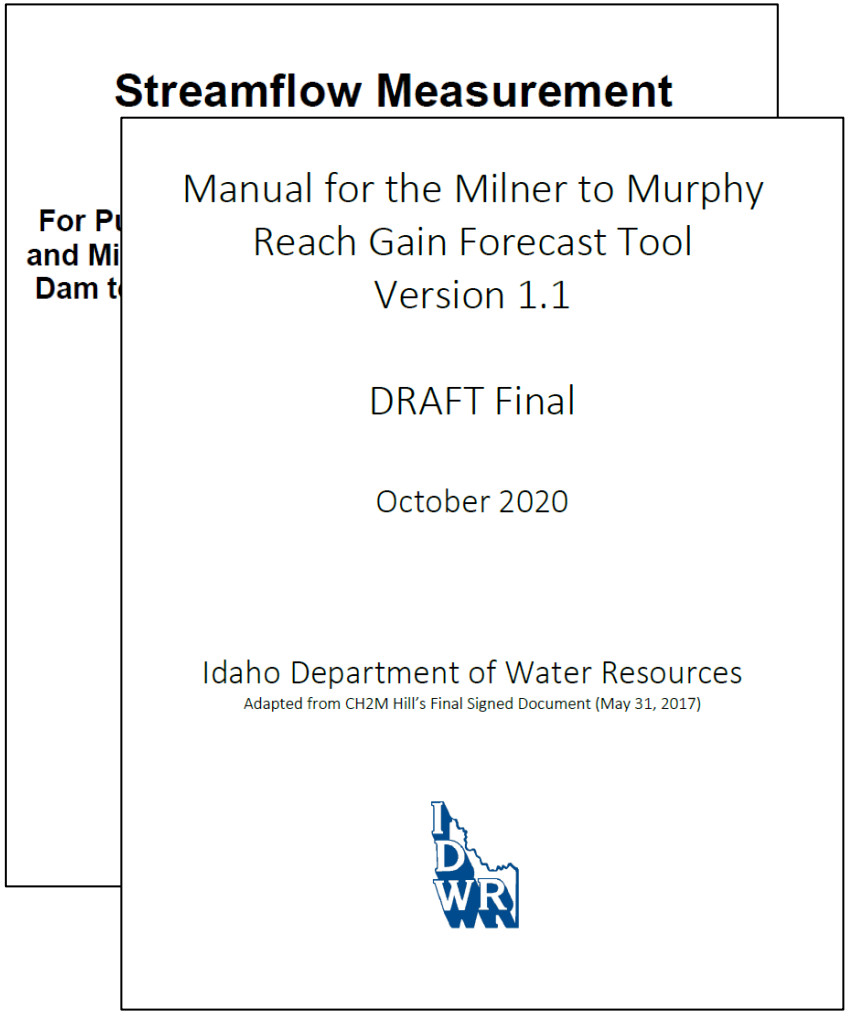
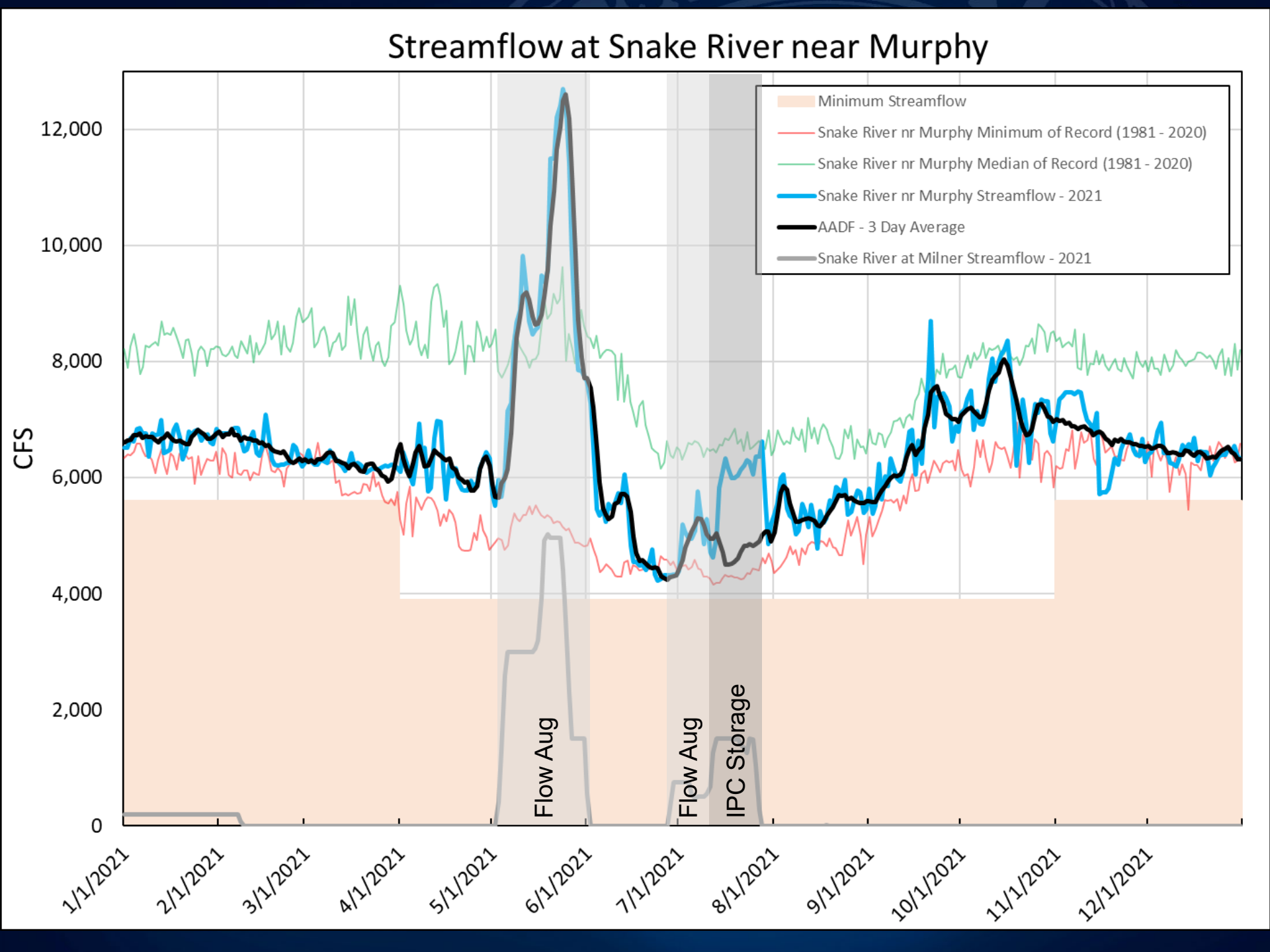
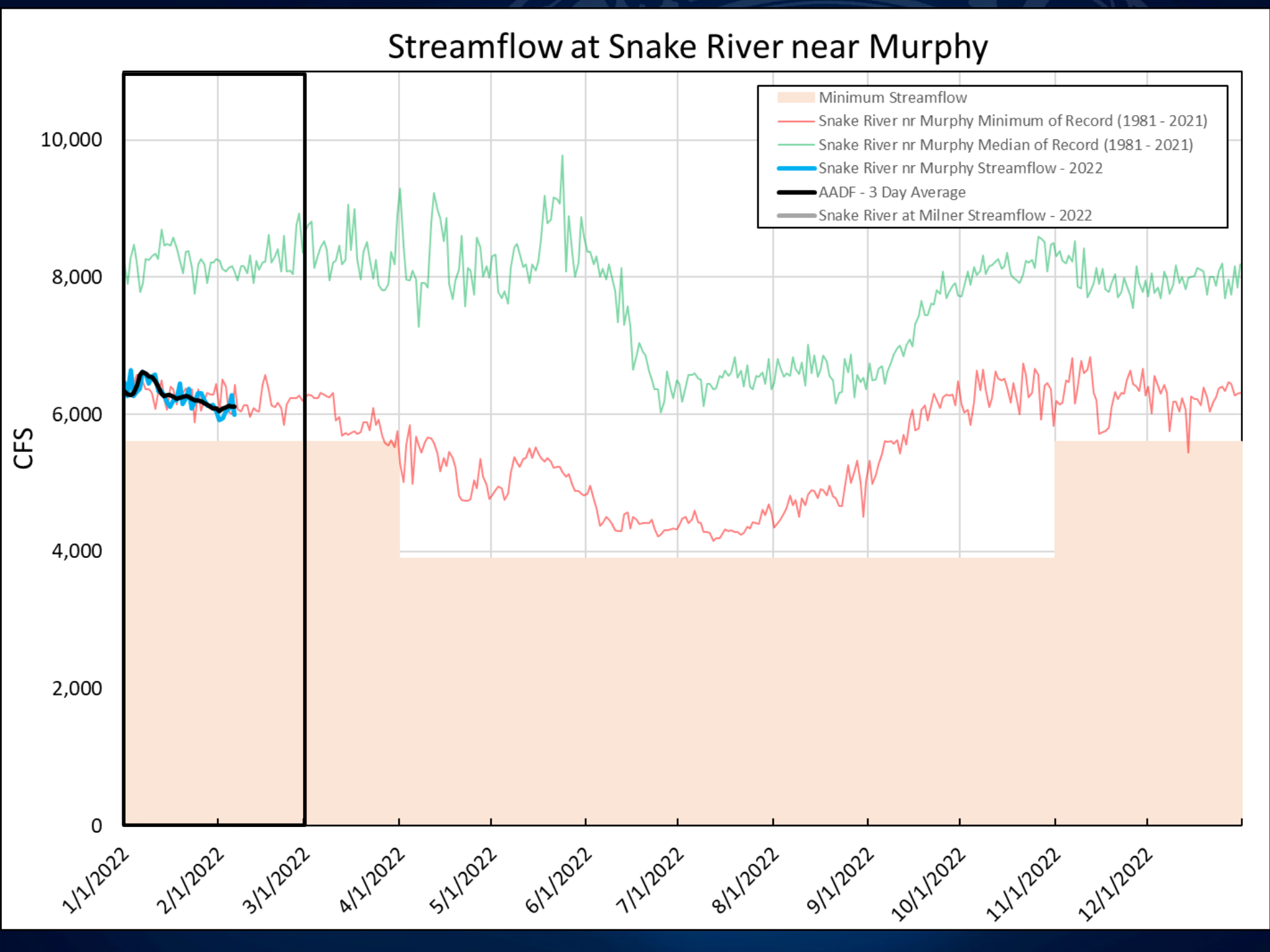
- Computed/tracked the AADF




Streamflow at Snake River near Murphy
Minimum Streamflow
Snake River nr Murphy Minimum of Record (1981 - 2020)
Snake River nr Murphy Median of Record (1981 - 2020)
Snake River nr Murphy Streamflow - 2021
AADF - 3 Day Average
Snake River at Milner Streamflow - 2021
CFS
12,000
10,000
8,000
6,000
4,000
2,000
0
Flow Aug
Flow Aug
IPC Storage
1/1/2021
2/1/2021
3/1/2021
4/1/2021
5/1/2021
6/1/2021
7/1/2021
8/1/2021
9/1/2021
10/1/2021
11/1/2021
12/1/2021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AADF - 3 Day Average
Snake River at Milner Streamflow - 2022
CFS
10,000
8,000
6,000
4,000
2,000
0
1/1/2022
2/1/2022
3/1/2022
4/1/2022
5/1/2022
6/1/2022
7/1/2022
8/1/2022
9/1/2022
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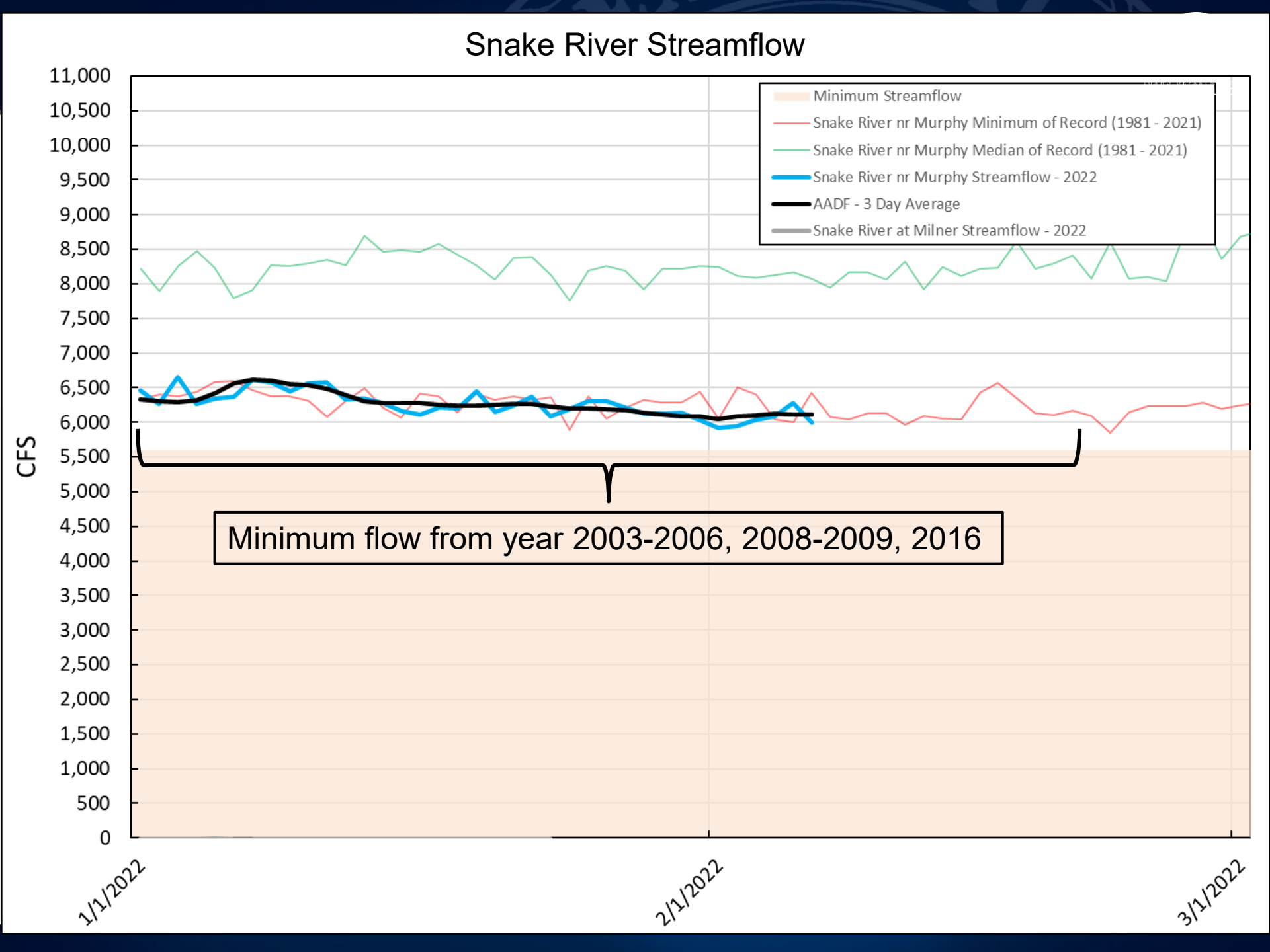
11/1/2022
12/1/2022


Snake River Streamflow
CFS
11,000
10,500
10,000
9,500
9,000
8,500
8,000
7,500
7,000
6,500
6,000
5,500
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1/1/2022
2/1/2022
3/1/2022
Minimum Streamflow
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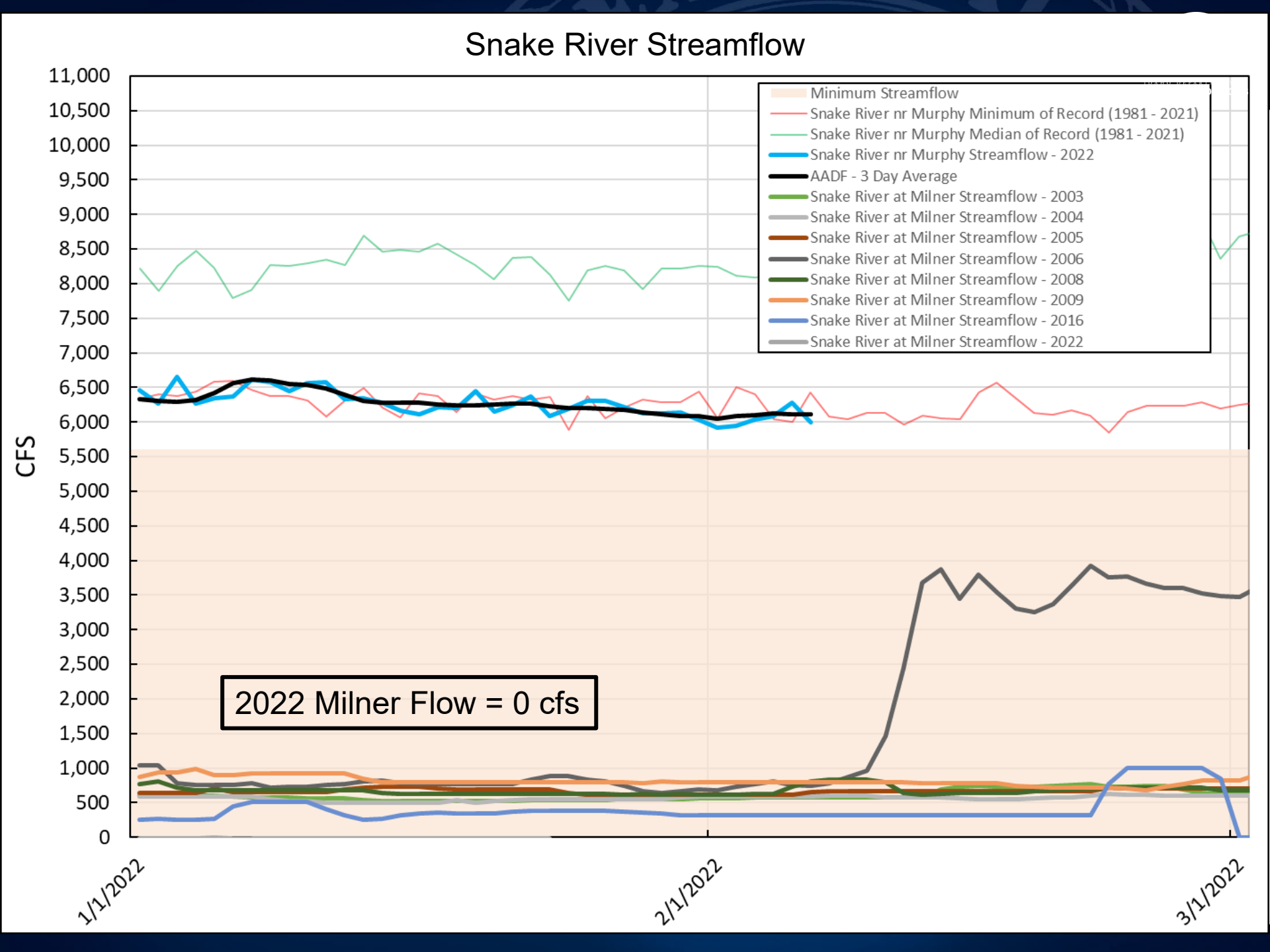
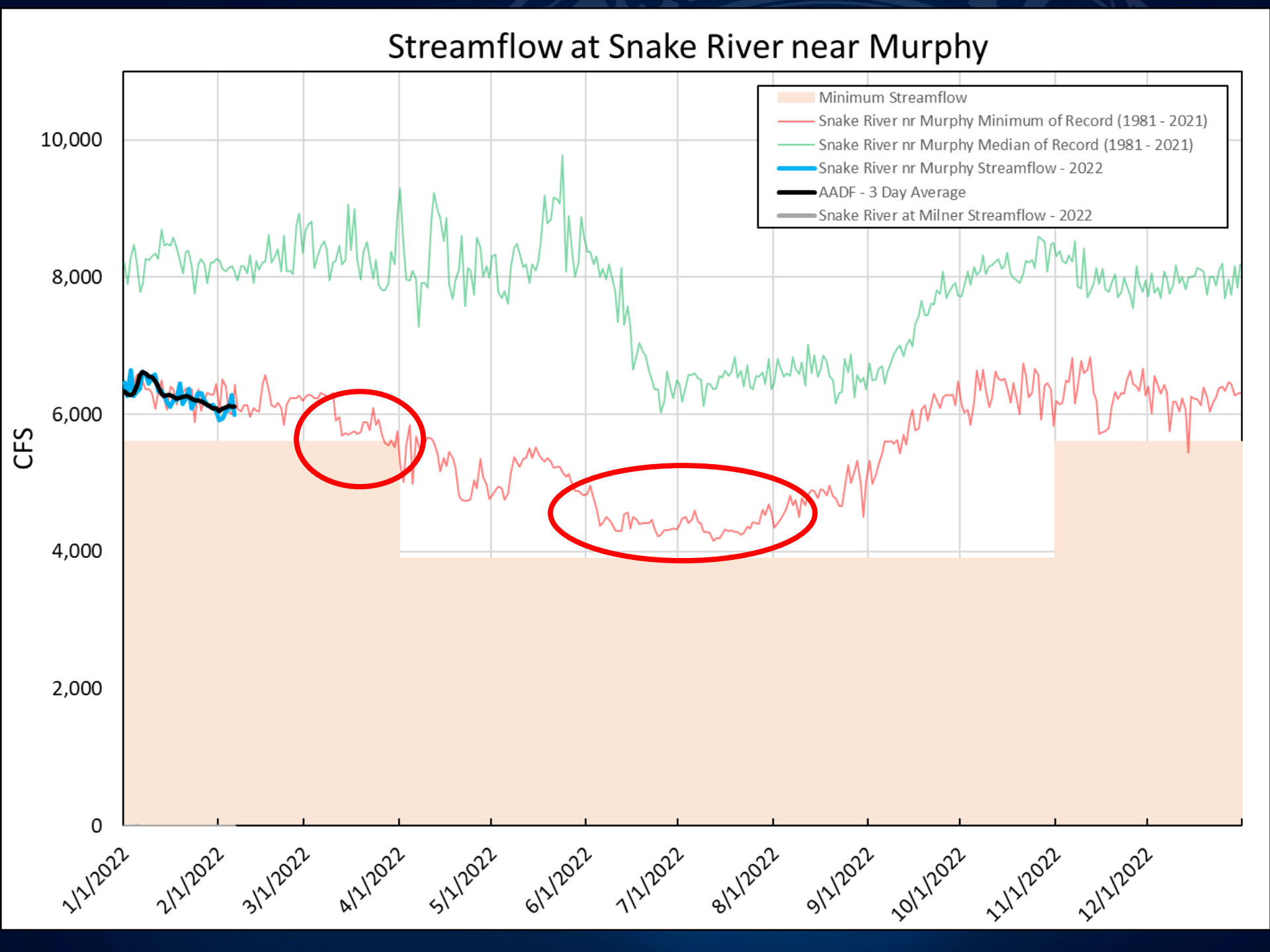
Snake River nr Murphy Median of Record (1981 - 2021)
Snake River nr Murphy Streamflow - 2022
AADF - 3 Day Average
Snake River at Milner Streamflow - 2022
Minimum flow from year 2003-2006, 2008-2009, 2016


Snake River Streamflow
CFS
11,000
10,500
10,000
9,500
9,000
8,500
8,000
7,500
7,000
6,500
6,000
5,500
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1/1/2022
2/1/2022
3/1/2022
Minimum Streamflow
Snake River nr Murphy Minimum of Record (1981 - 2021)
Snake River nr Murphy Median of Record (1981 - 2021)
Snake River nr Murphy Streamflow - 2022
AADF - 3 Day Average
Snake River at Milner Streamflow - 2003
Snake River at Milner Streamflow - 2004
Snake River at Milner Streamflow - 2005
Snake River at Milner Streamflow - 2006
Snake River at Milner Streamflow - 2008
Snake River at Milner Streamflow - 2009
Snake River at Milner Streamflow - 2016
Snake River at Milner Streamflow - 2022
2022 Milner Flow = 0 cfs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CFS
10,000
8,000
6,000
4,000
2,000
0
1/1/2022
2/1/2022
3/1/2022
4/1/2022
5/1/2022
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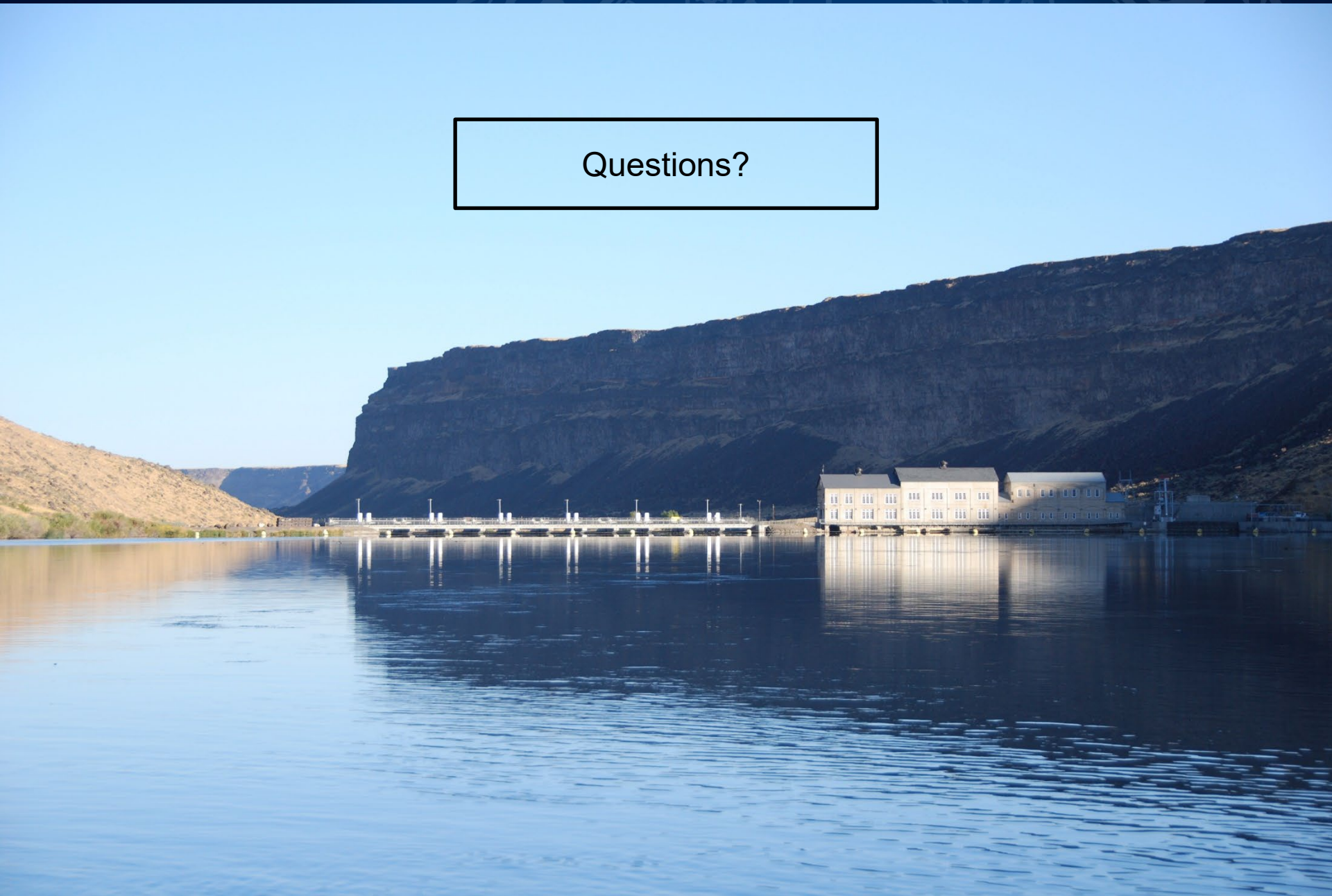
12/1/2022


Questions?