



Deschutes Mitigation Program Meeting

August 10, 2026

Jordan Beamer, Assistant Surface Water Section Manager

Jeremy Giffin, Deschutes Basin Watermaster

Sarah Henderson, Flow Restoration Coordinator

Bryn Hudson, Senior Policy Advisor

Joe Kemper, Hydrogeologist

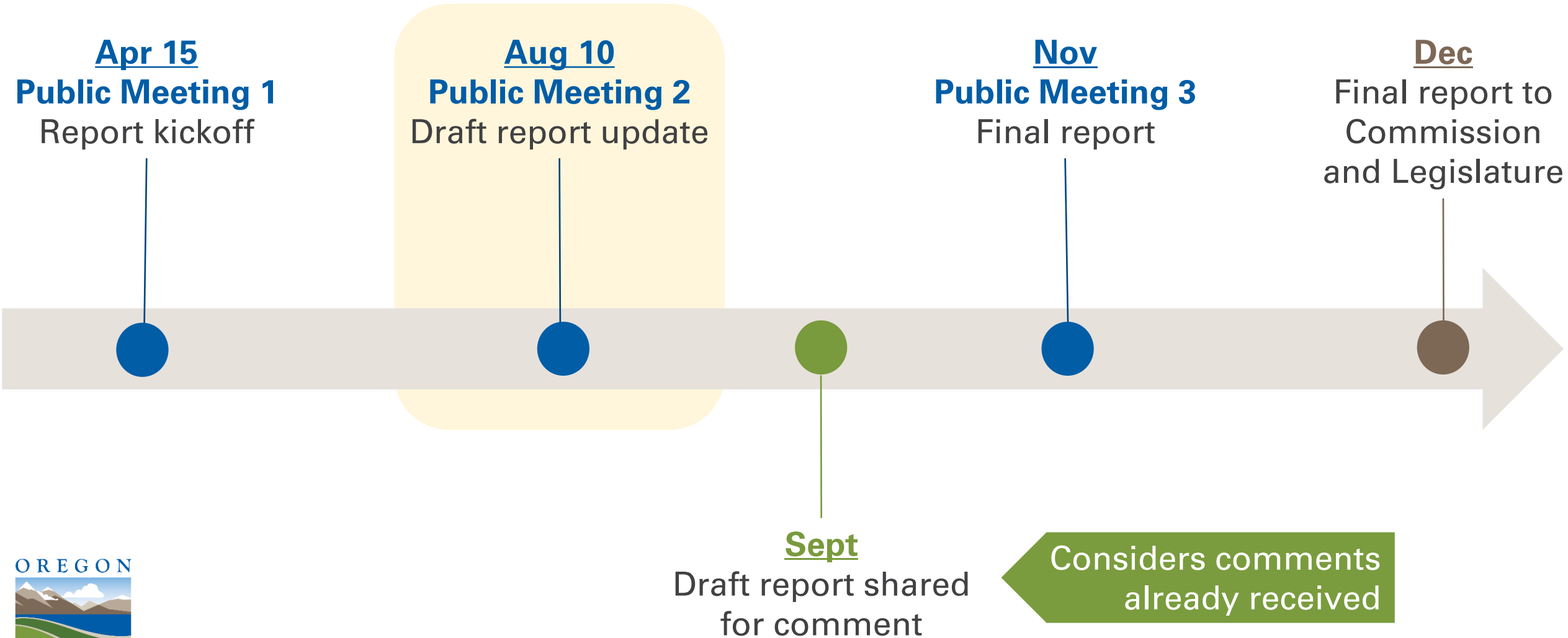
Angella Rinehold, Senior Water Advisor, Central Region

Program

- Report timeline
 - Stage setting
 - Program use updates
 - Impact evaluation results
 - Discussion / Q&A
- Future focus areas
 - Discussion / Q&A

Goal: 40 mins for Q&A

Meeting + report timeline



Program goals



TRUE OR FALSE:

The primary goal of the Deschutes Groundwater Mitigation Program is **to protect the groundwater resource.**

Program goals



FALSE.

The primary goal of the Deschutes Groundwater Mitigation Program is **to protect surface water flows** (while allowing new groundwater development).

Basin context

1

Deschutes River + tributaries are protected with **State Scenic Waterway** designations and associated target flows.

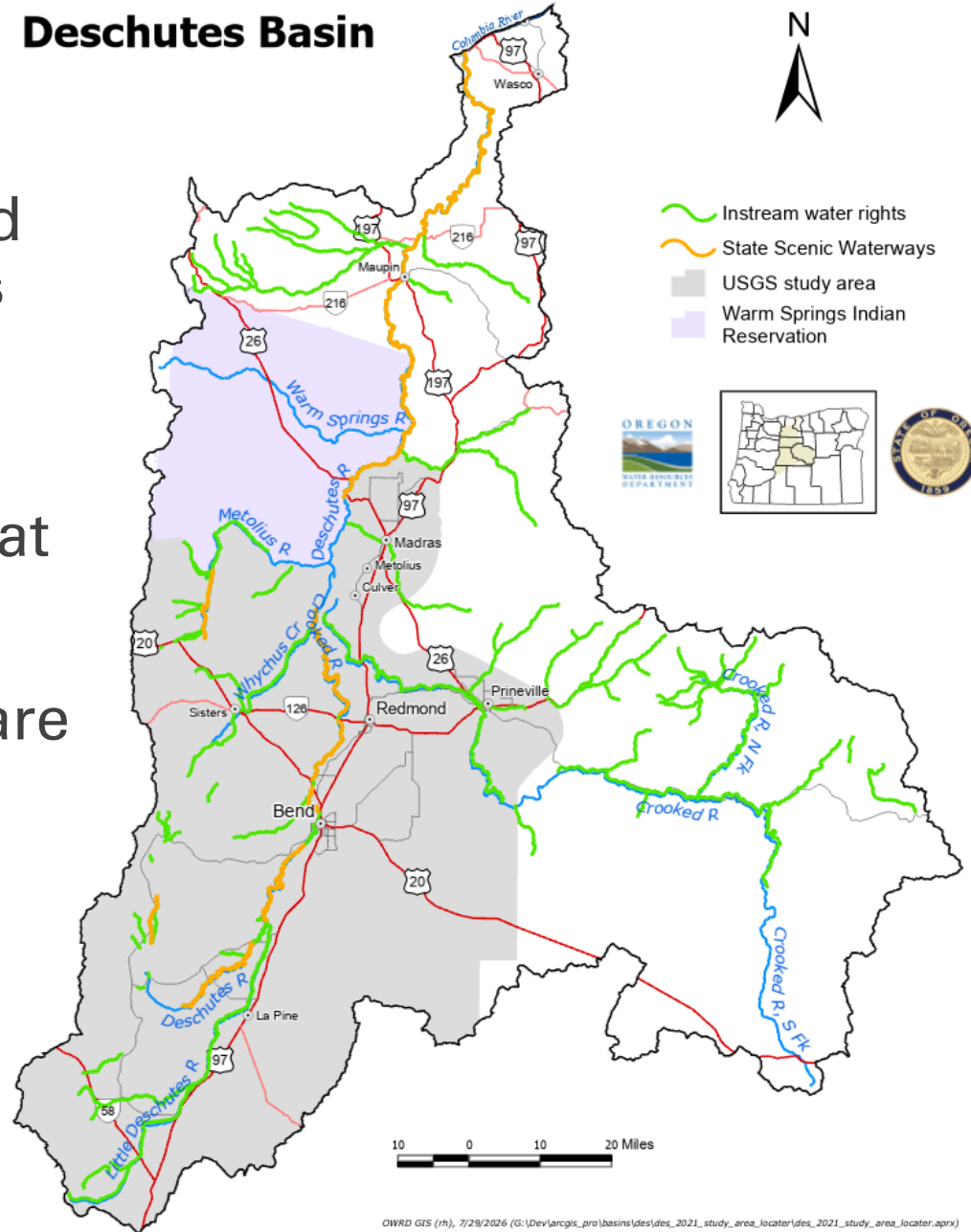
2

There are also hundreds of **surface water rights** (including instream water rights) that are not always satisfied.

3

Surface water (SW) + groundwater (GW) are **hydraulically connected** in the Deschutes such that GW use impacts SW flows.

GW and SW need to be jointly managed in the Deschutes to avoid SW injury from GW use.



Brief program history



- **1995:** SB 1033 authorized GW use that does not “measurably reduce” scenic waterway flows
- **1998:** Based on USGS study findings, OWRD determined that “measurably reduce” standard was triggered in the study area; moratorium on new GW uses
- **1999-2001:** Deschutes Basin Steering Committee worked to establish a program to offset SW impacts from GW use
- **2002:** Water Resources Commission adopted the Mitigation Program rules
- **2005:** HB 3494 ratified program rules (following a protest)

Groundwater protection



What systems are in place to protect the groundwater resource?

Groundwater in Oregon

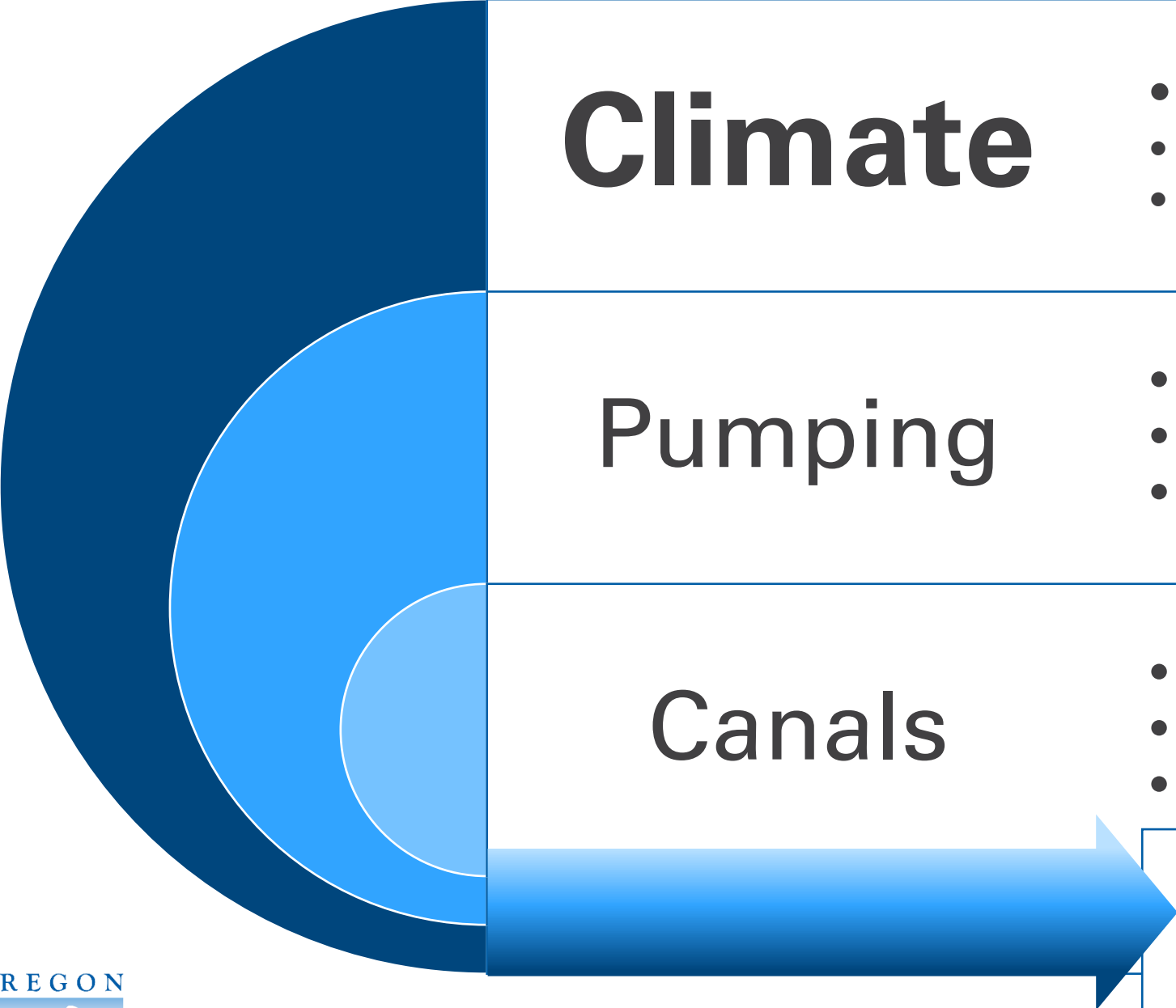
**For new GW allocations,
“is water available”**

- Reasonably stable GW levels
- Expected well yields
- Potential for Substantial Interference (PSI) with SW



Distribution and Regulation

- Permit decline conditions
- Injury investigations
- GW limited areas
- Critical GW areas



Climate

- Precipitation trends
- Temperature
- Vegetation

Pumping

- Pre-Mitigation
- Mitigation program
- Exempt use

Canals

- Decreased diversions
- Piping & lining
- Irrigation methods

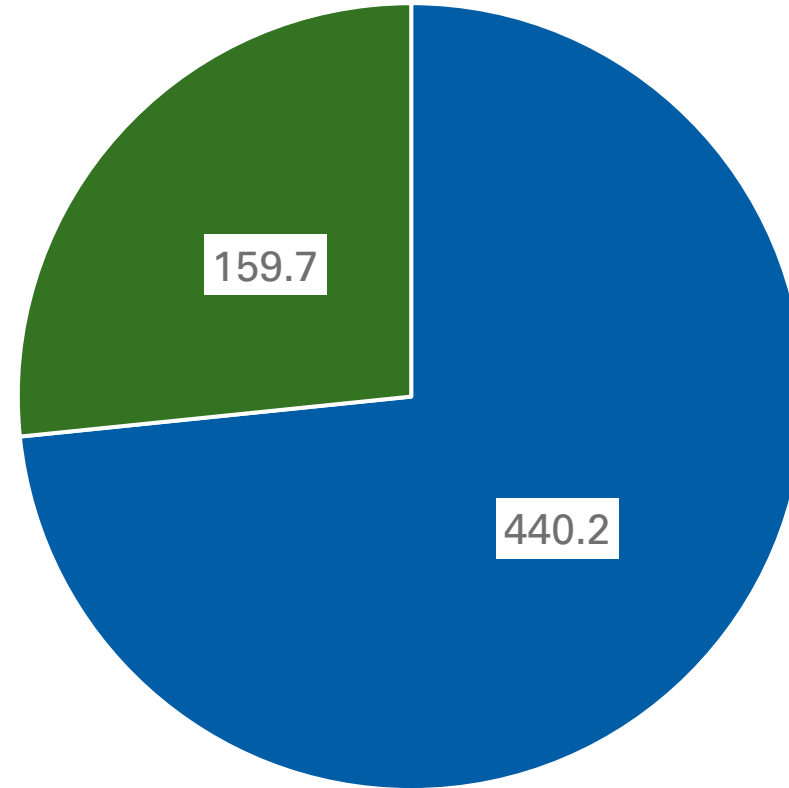
Groundwater Level Change

Gannett, M.W., and Lite, K.E., 2013, Analysis of 1997–2008 groundwater level changes in the upper Deschutes Basin, Central Oregon: U.S. Geological Survey Scientific Investigations Report 2013-5092, vi, 34 p.,

Total GW allocation

Roughly 3/4 of all groundwater rights were issued prior to the Mitigation Program.

Total Permitted Rates (cfs) for Current Water Rights in Deschutes GW Study Area



- Pre-Mitigation Program Water Rights
- Water Rights Issued Within Mitigation Program

Program basics



Mitigation means protecting water instream to offset SW impacts from GW use



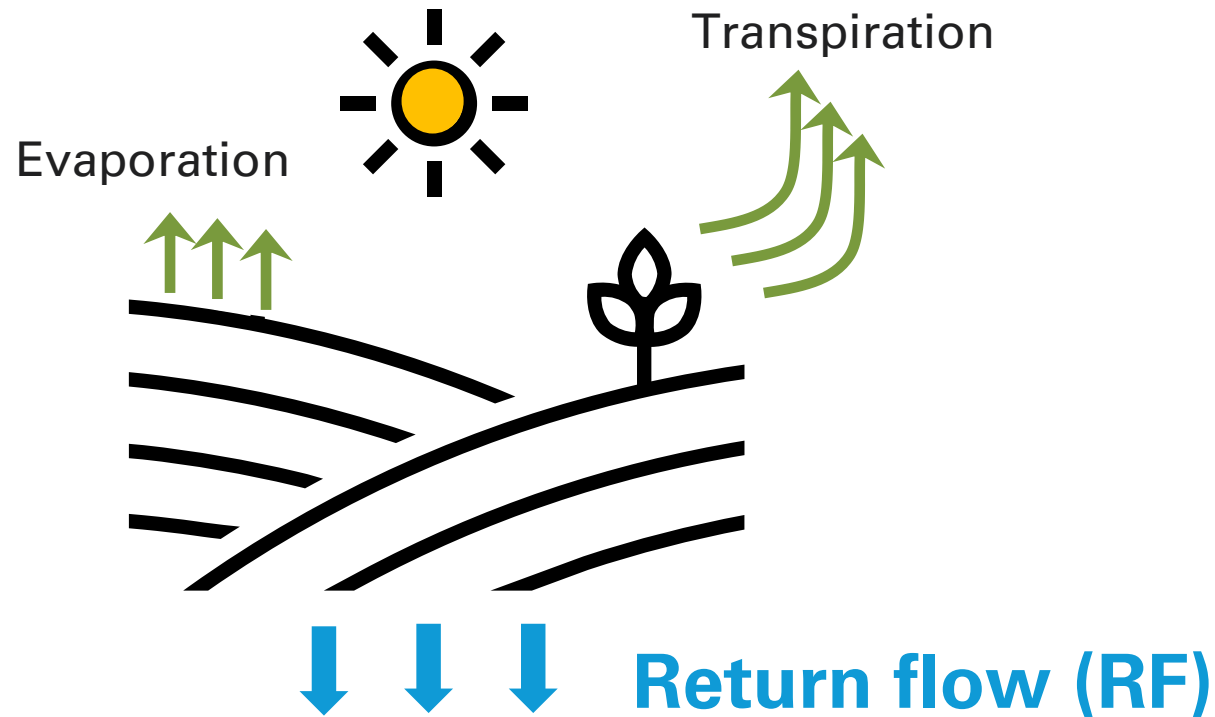
Instream protection may be **permanent or temporary** (permanent transfers or leasing)



Trade is **bucket for bucket** (or 2:1 if temporary)

Program “currency”

Consumptive use (CU)



$$\text{DIVERSION} = \text{CU} + \text{RF}$$

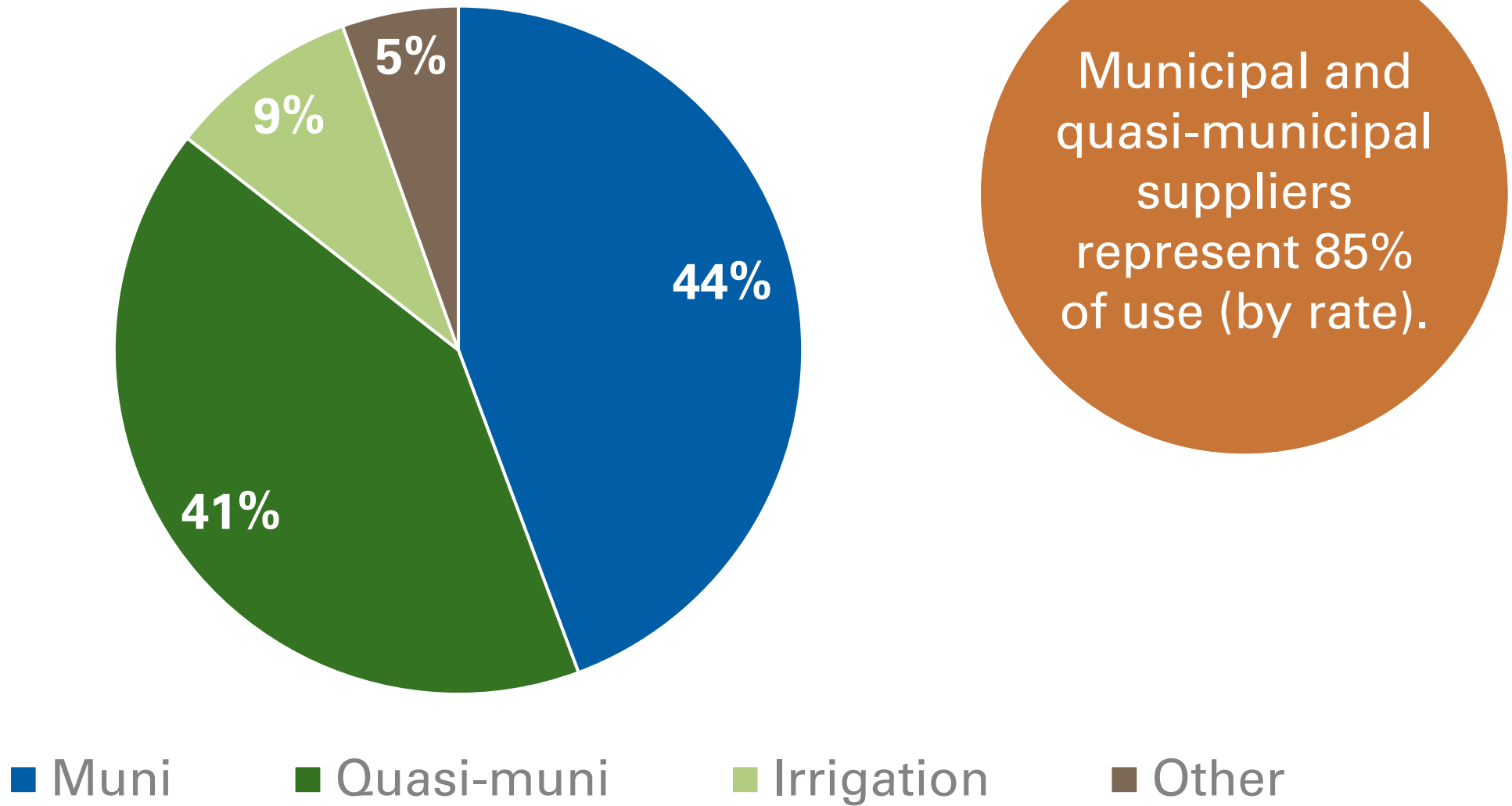
CREDITS (+)

Mitigation credit:
CU portion of a SW
right put instream

DEBITS (-)

Mitigation obligation:
CU portion of GW use

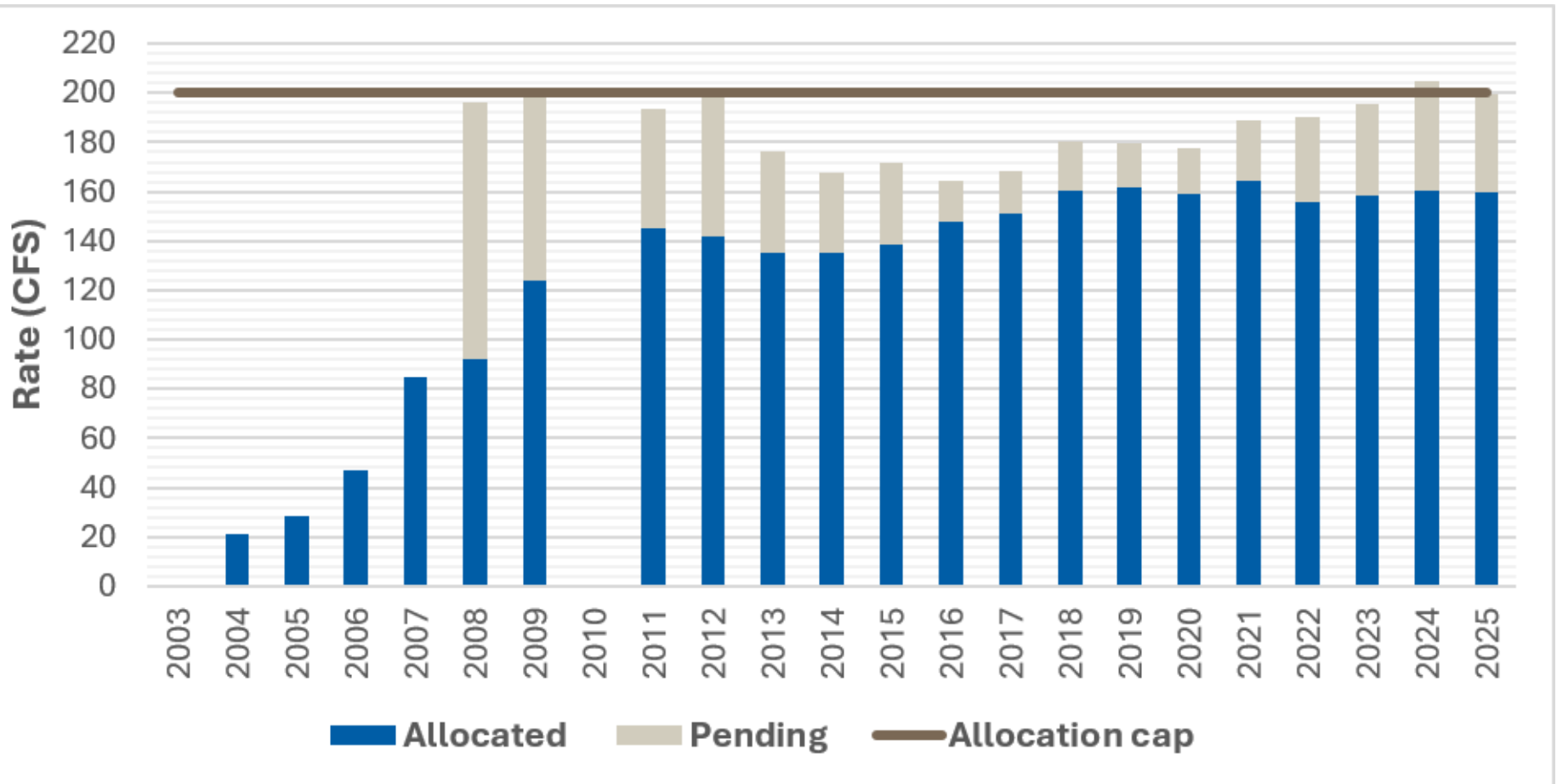
Program users



Rate allocated (of 200 cfs)

~40 cfs pending

~160 cfs allocated



Ongoing development

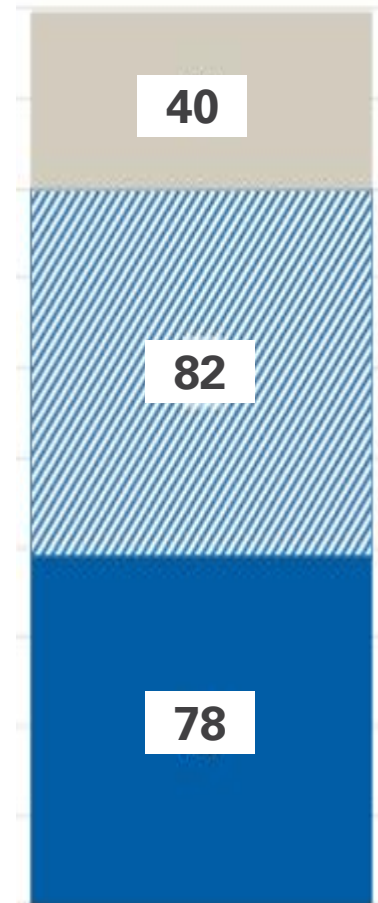
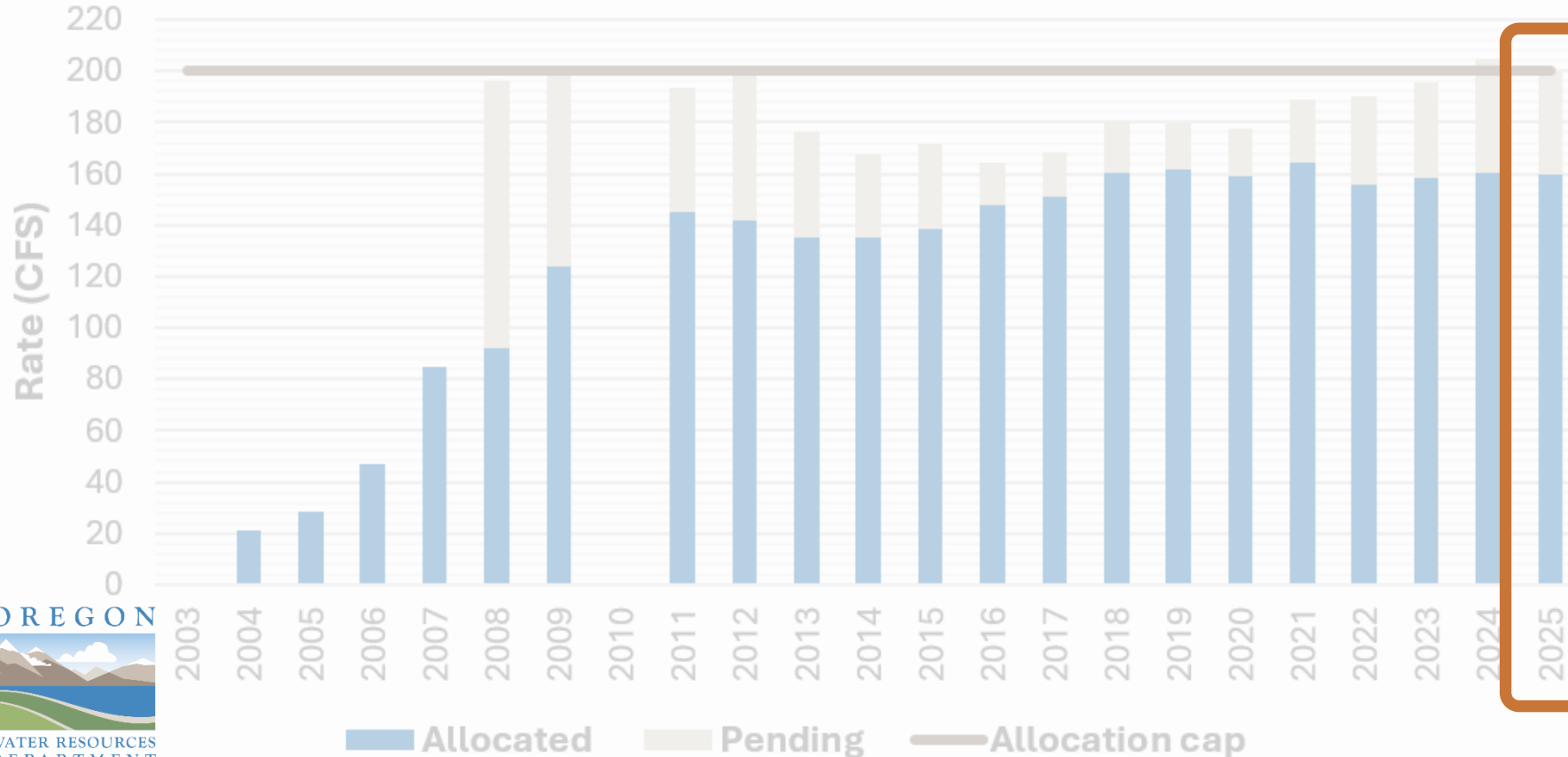
~40 cfs pending

~160 cfs allocated

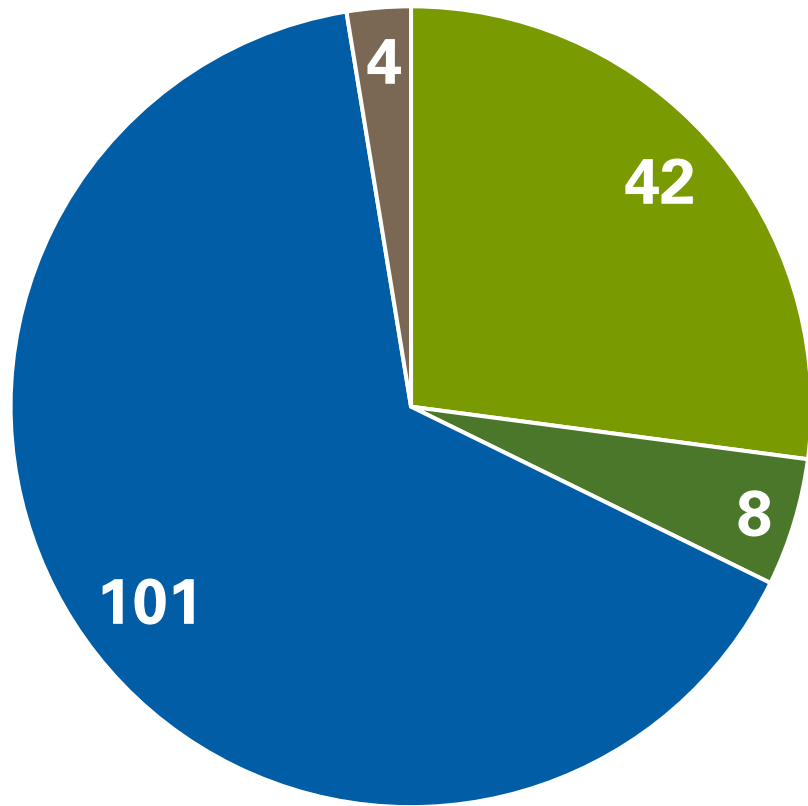
½ still being developed

PRELIMINARY DATA

- Pending
- Allocated, undeveloped
- Allocated, developed



Temporary vs permanent credit use



- Temporary only
- Temporary + permanent
- Permanent only
- No credits yet (final order only)

~ 1 in 3 use
temporary
credits

Evaluating impacts

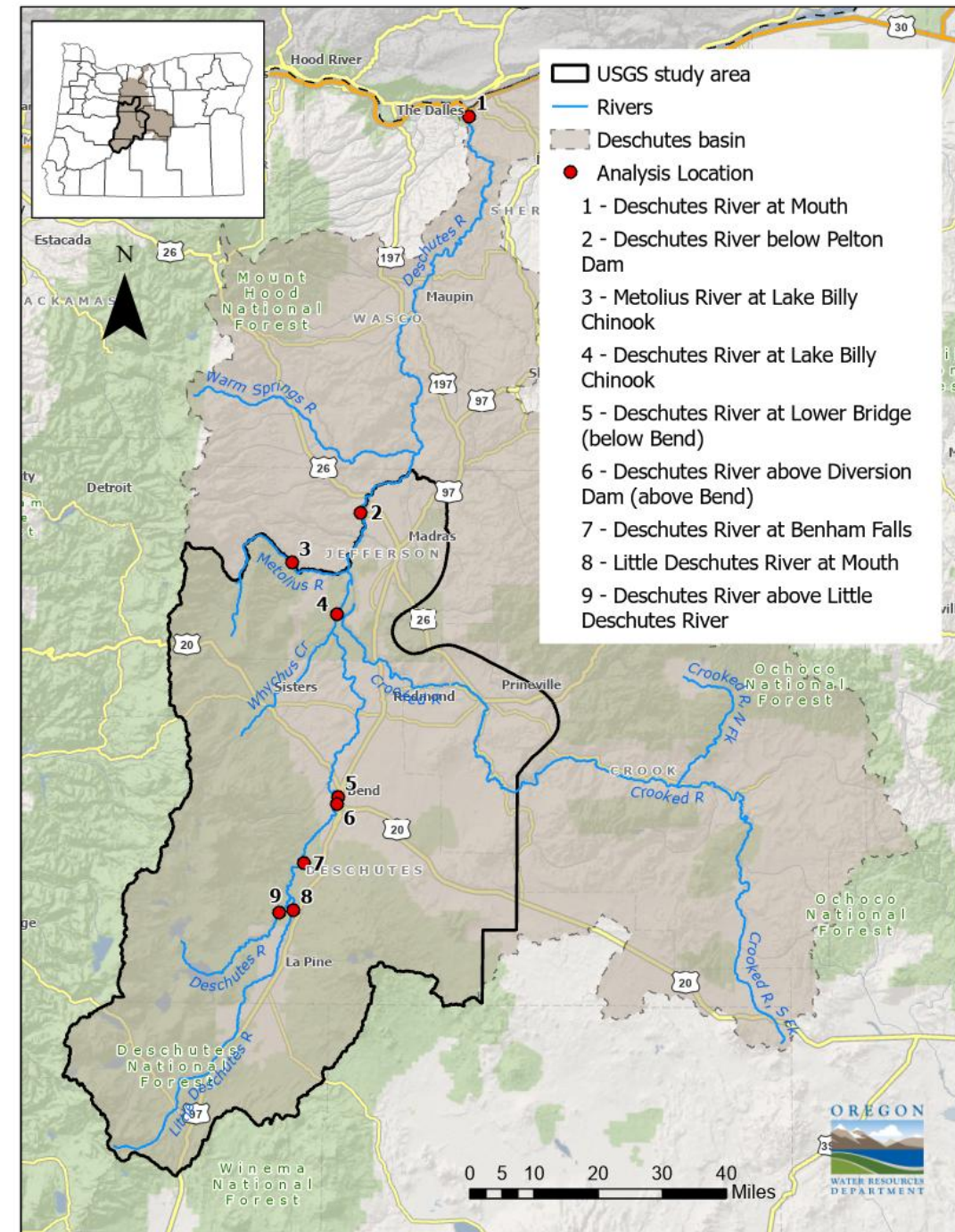
OAR 690-505-0500(5):

GW appropriations under program
**should not cause scenic waterway flows
and instream water right flows to be
met less frequently** as compared to long-
term, representative base period flows.

After dams,
before program

1966-1995

● 9 analysis points



Example

Deschutes River below Pelton Dam (#2):

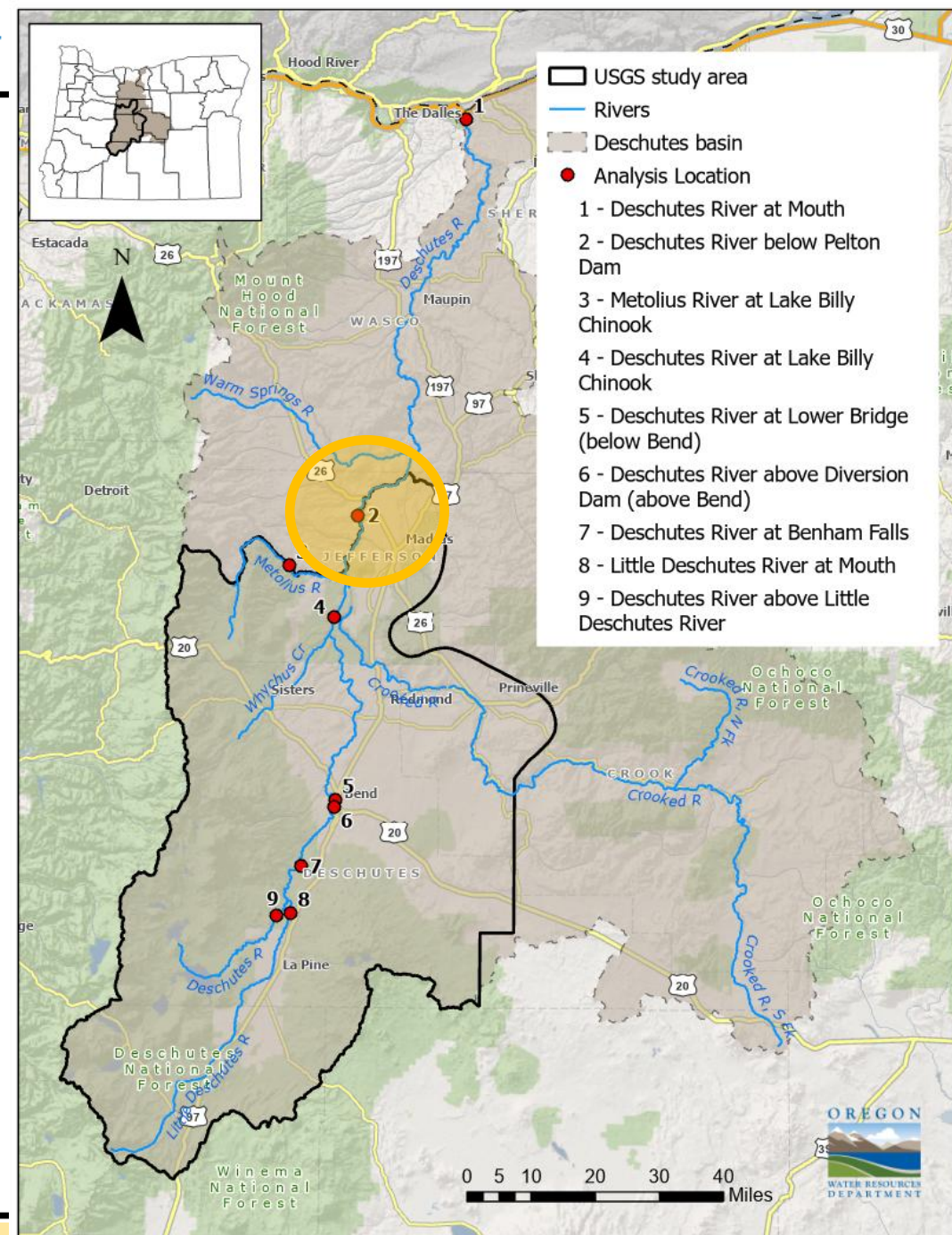
Instream flow requirements met 69.3% of time historically.

Does program $\uparrow$ or $\downarrow$ this %?

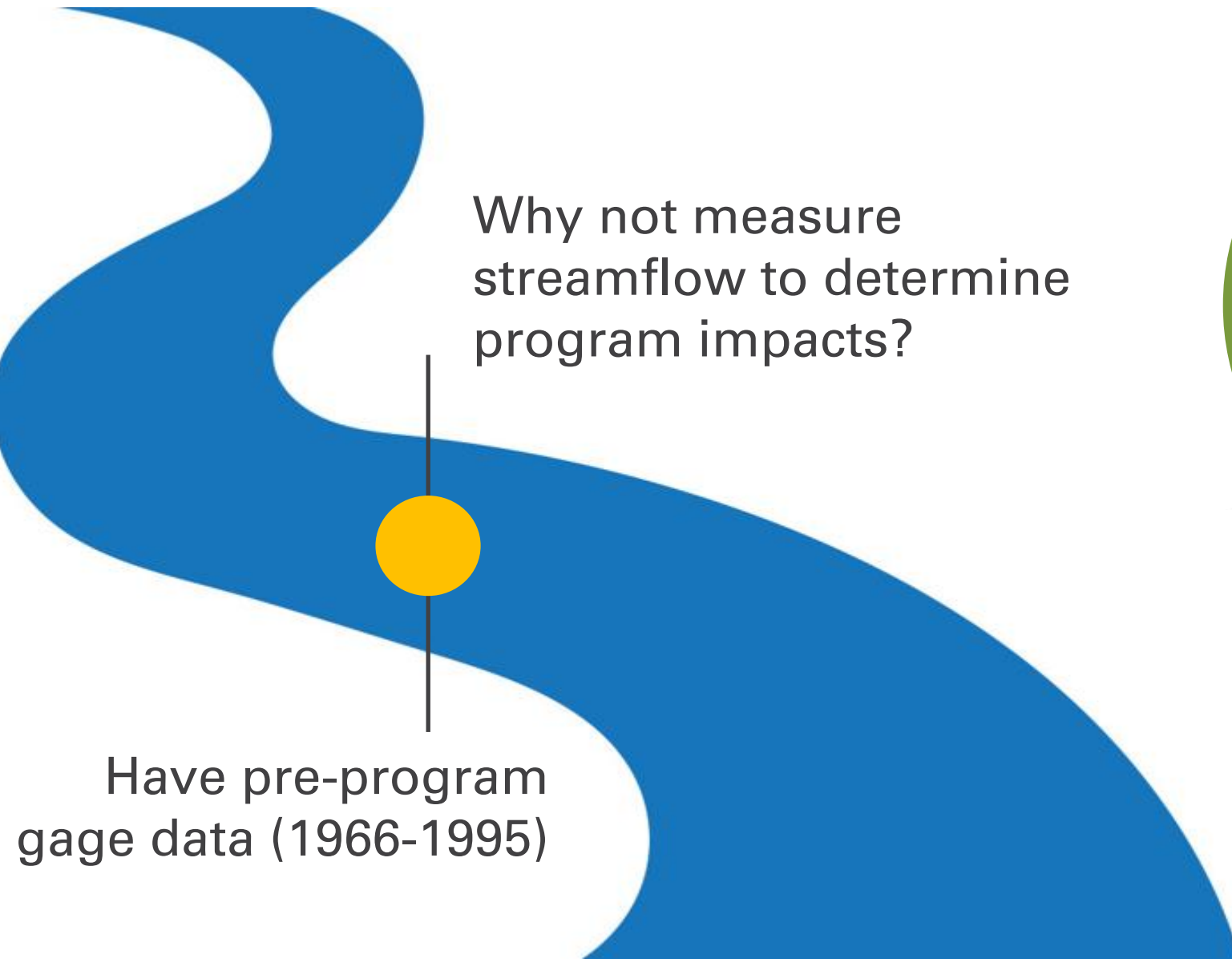
PROGRAM IMPACTS ESTIMATED
USING A MATHEMATICAL MODEL.

Why model?

Year	Percent of days per year
1966	58.1
1967	53.7
1968	35.0
1969	56.4
1970	66.6
1971	84.9
1972	94.3
1973	63.3
1974	95.1
1975	99.7
1976	99.7
1977	54.0
1978	82.2
1979	69.9
1980	59.3
1981	64.9
1982	99.7
1983	99.5
1984	100.0
1985	94.2
1986	92.9
1987	80.0
1988	59.3
1989	69.9
1990	45.2
1991	28.8
1992	28.7
1993	59.2
1994	31.0
1995	54.5
Long Term	69.3



Why model vs measure impacts?



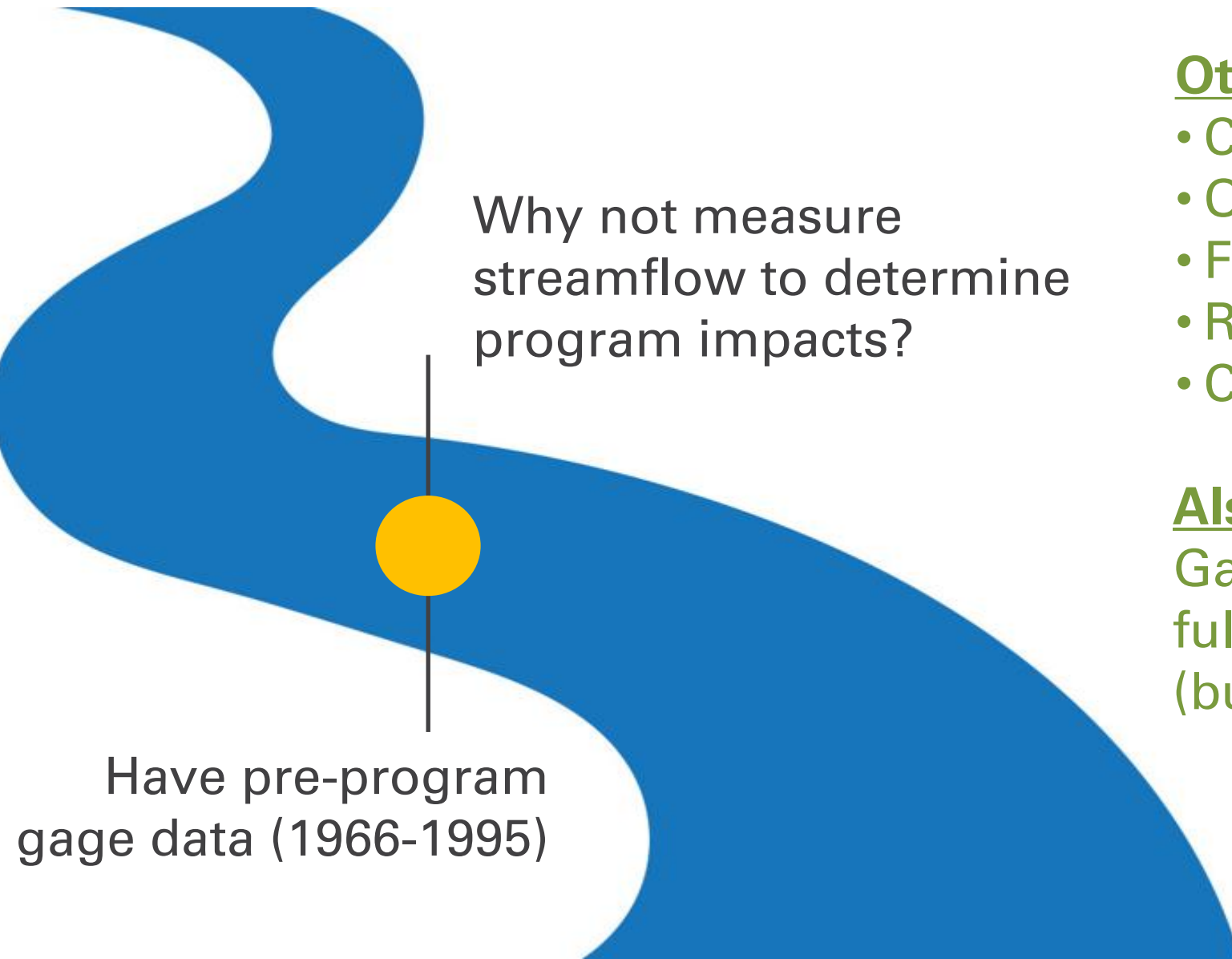
Why not measure
streamflow to determine
program impacts?

Have pre-program
gage data (1966-1995)



What else
impacts
streamflow?

Why model vs measure impacts?



Why not measure
streamflow to determine
program impacts?

Have pre-program
gage data (1966-1995)

Other factors include:

- Climate
- Other types of pumping
- Flow restoration
- Reservoir operations
- Canal piping/lining

Also:

Gage data may not reflect
full impacts of pumping
(but model does)

Impact evaluation data



What is the impact of the program on % of time instream flow requirements historically met?

How do impacts vary throughout the year (i.e., seasonality)?

UP NEXT: DISCUSSION

Frequency impact (by month)

- Impacts neutral or positive during irrigation season
- Impacts negative during non-irrigation season

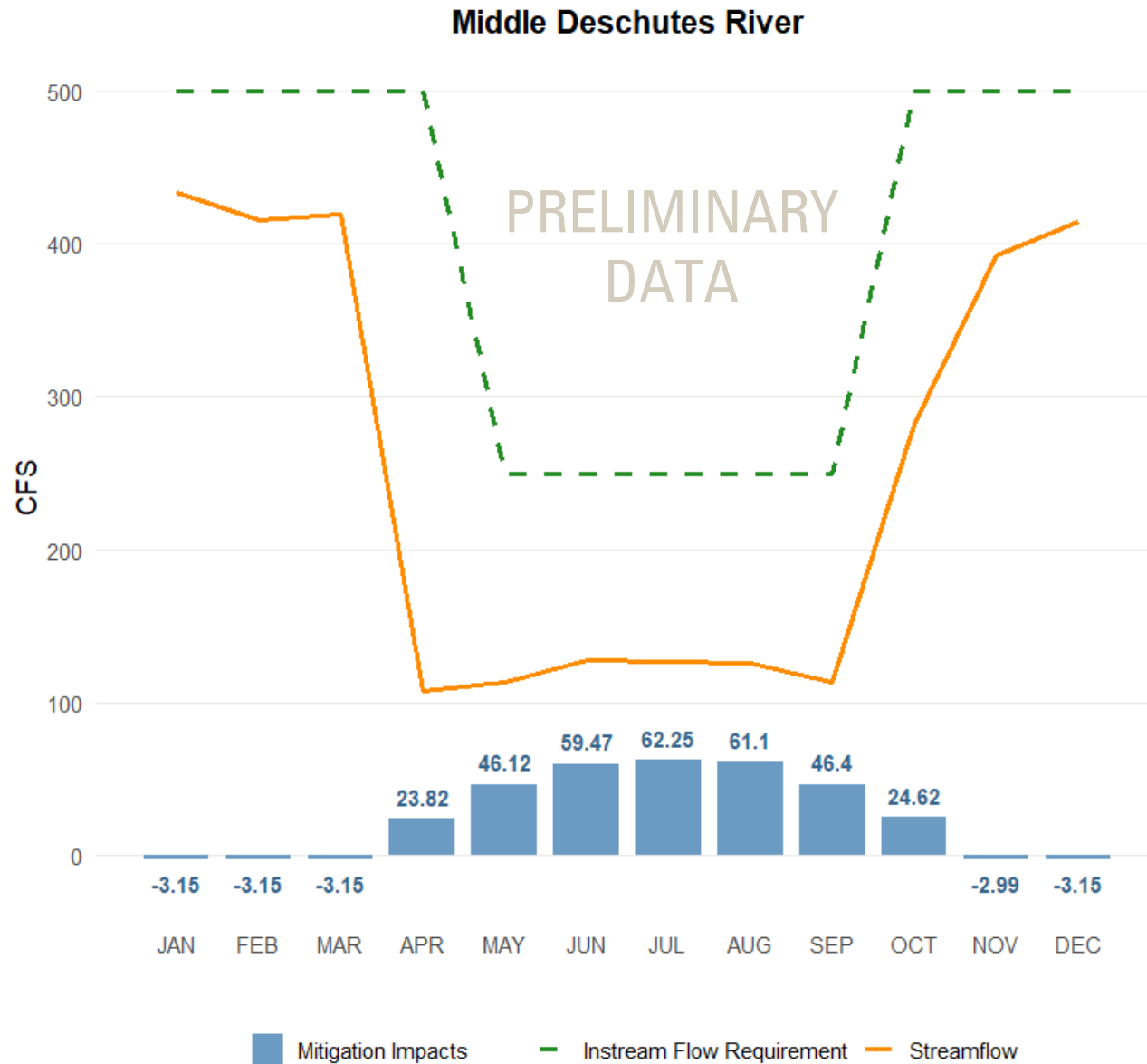
This is the result of mitigation occurring during the irrigation season, and pumping impacts occurring year-round.

Monthly results included in all annual reports.
This 5-year report, deeper dive analysis at 3 sites.

Deschutes River below Pelton Dam (2025)

Month	Change in frequency (%)
JAN	-1.29
FEB	-2.24
MAR	-1.61
APR	0
MAY	5.27
JUN	5.22
JUL	5.38
AUG	1.29
SEP	2.33
OCT	0
NOV	-0.11
DEC	-1.29
ANNUAL	1.1

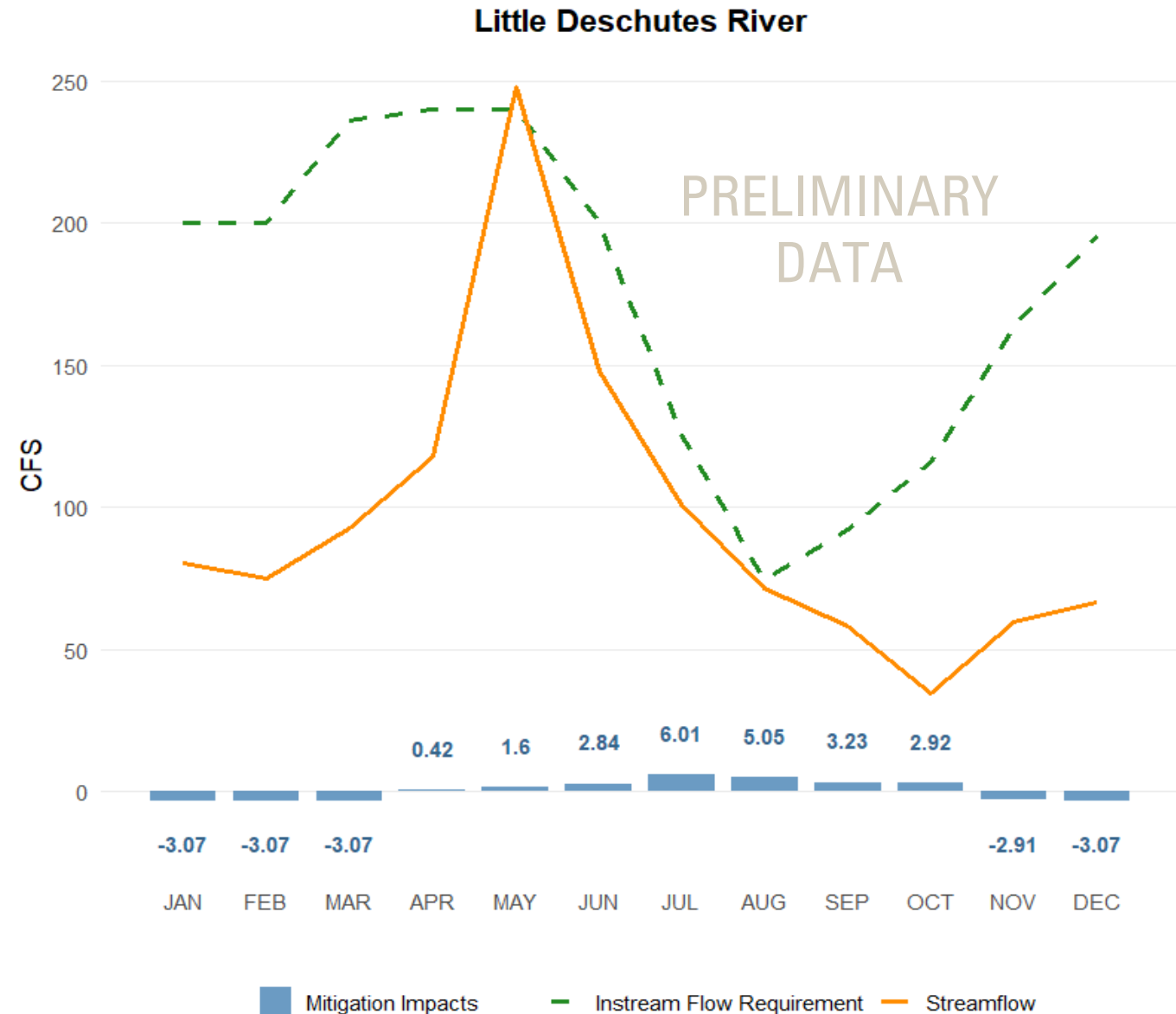
Seasonal analysis (Middle Deschutes)



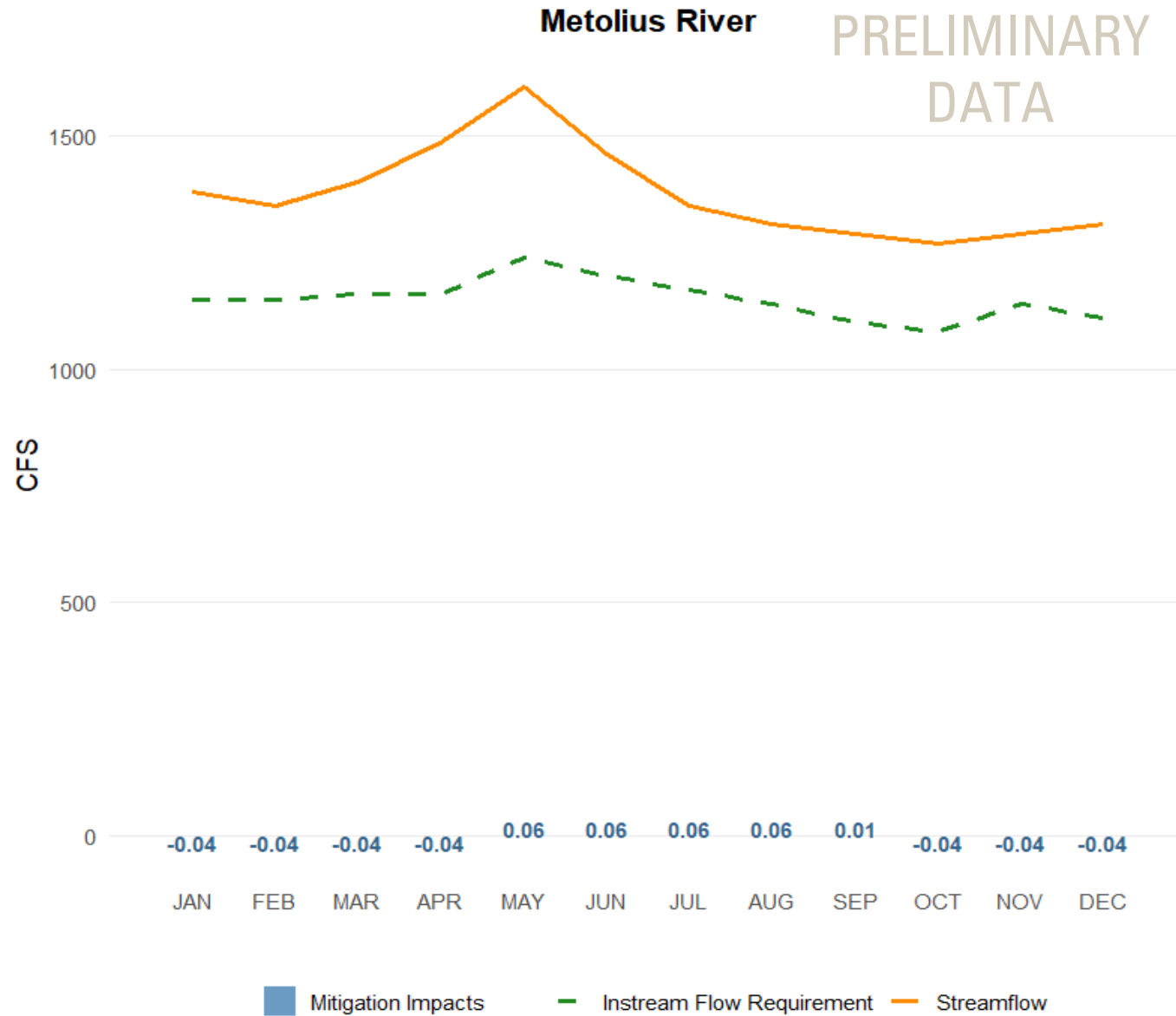
- Positive impacts Apr-Oct; negative Nov-Mar
- Positive impacts at critical low flow times
- Program contributing up to half the flows in summer
- Positive impacts greatly outweigh negative (net positive)
- Negative impacts occur when flows are 3x higher

Seasonal analysis (Little Deschutes)

- Positive impacts Apr-Oct;
negative Nov-Mar
- Positive/negative impacts
more balanced
- Negative impacts occur when
flows are below instream flow
requirements



Seasonal analysis (Metolius)



- Positive impacts May-Sept; negative Oct-Apr
- Magnitude of impacts very small compared to streamflows
- Streamflows exceed flow requirements throughout year

Discussion



Until 3:15 pm

Comments or questions on
program goals, fundamentals
or impact evaluation?



UP NEXT: PROPOSED FOCUS
AREAS + DISCUSSION

Future focus areas (not exhaustive)

No.	Topic
1	Program extension
2	Tribal water rights
3	Seasonal impacts
4	Whychus / Crooked
5	Mitigation water reliability

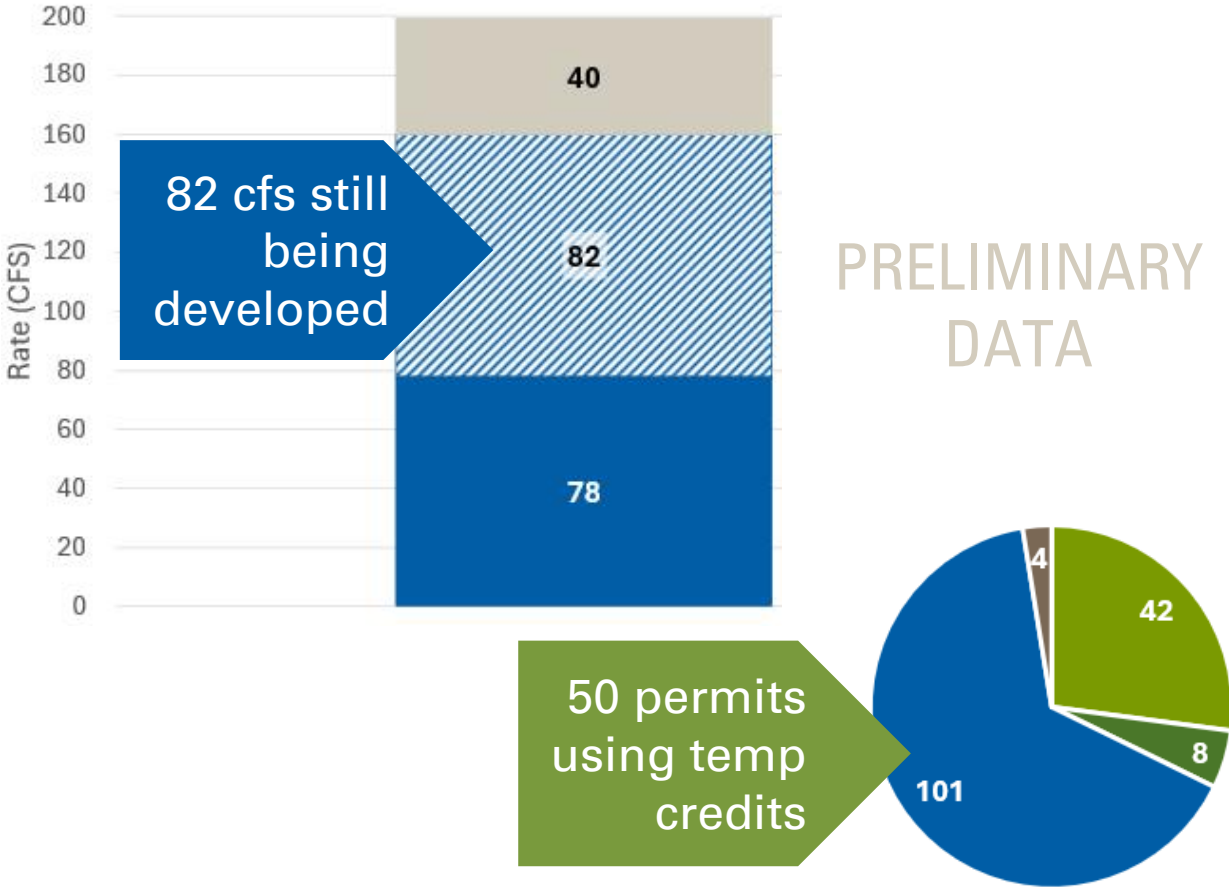
No.	Topic
6	Protected flow verification
7	Consumptive use factors
8	Temporary credit uncertainty
9	7j permits
10	Impact to springs + quality

Topics reflect feedback received on the program.

Future focus areas

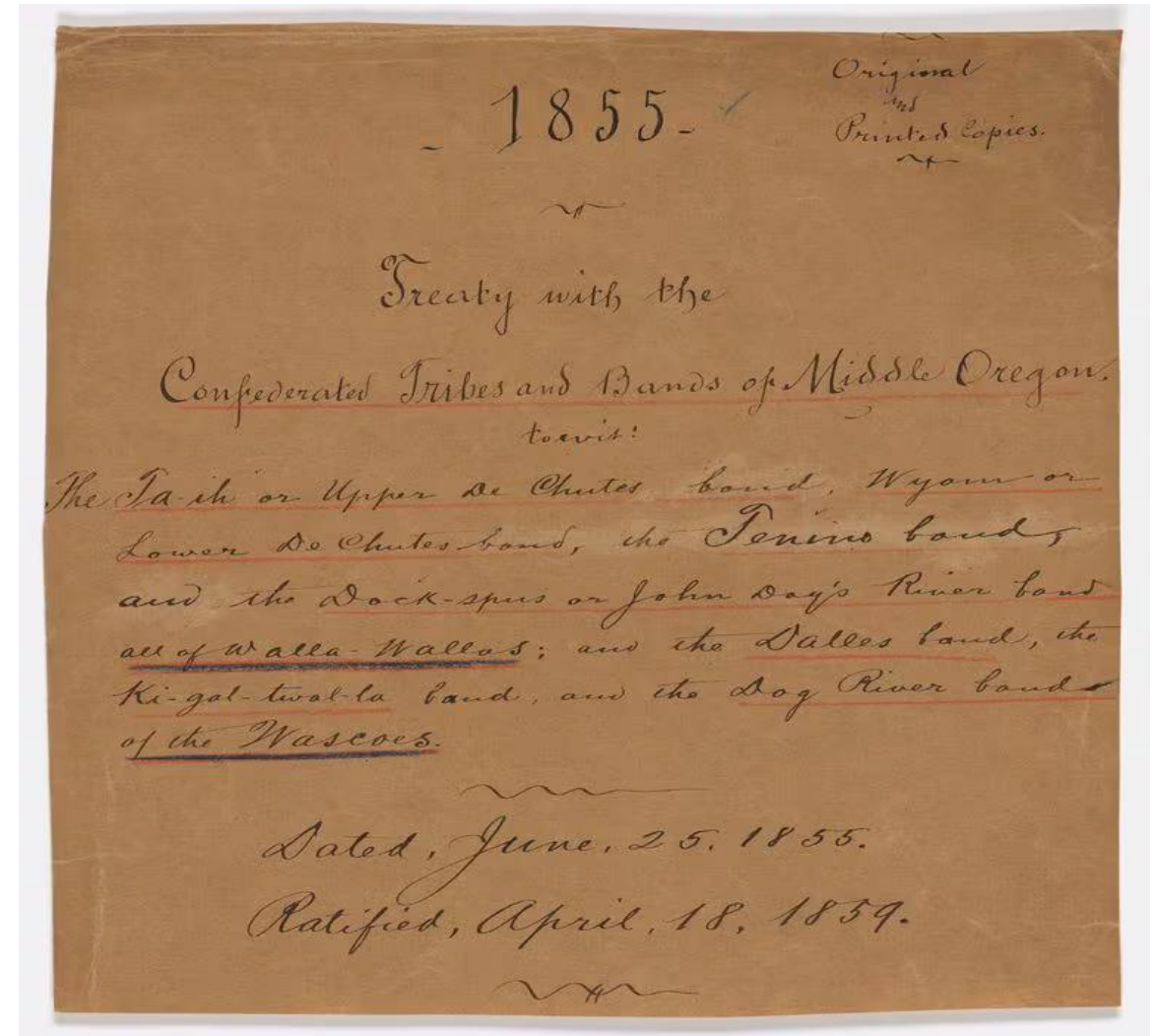
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Sunset impacts new + existing allocations



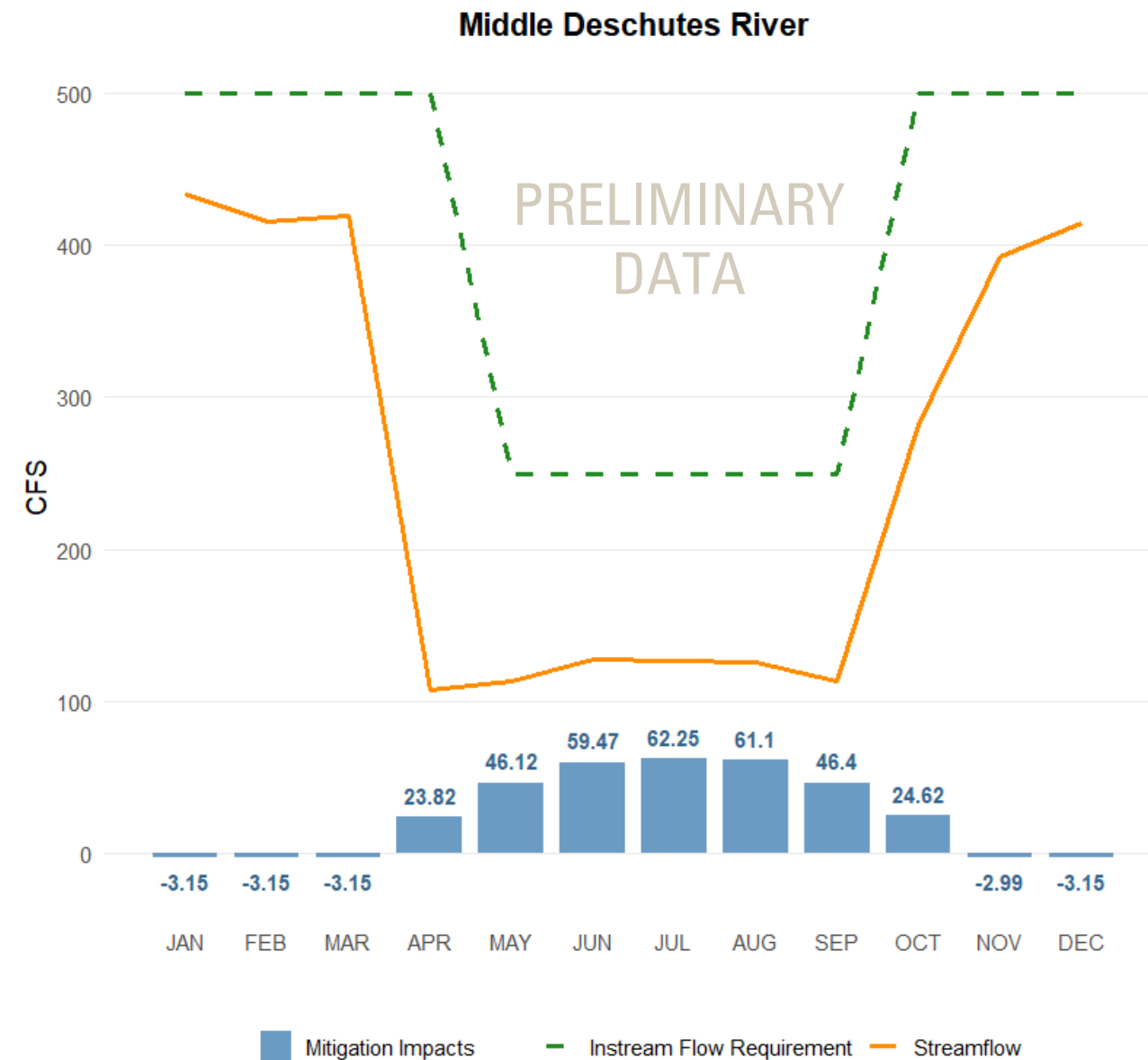
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Seasonal assessment
at all analysis points

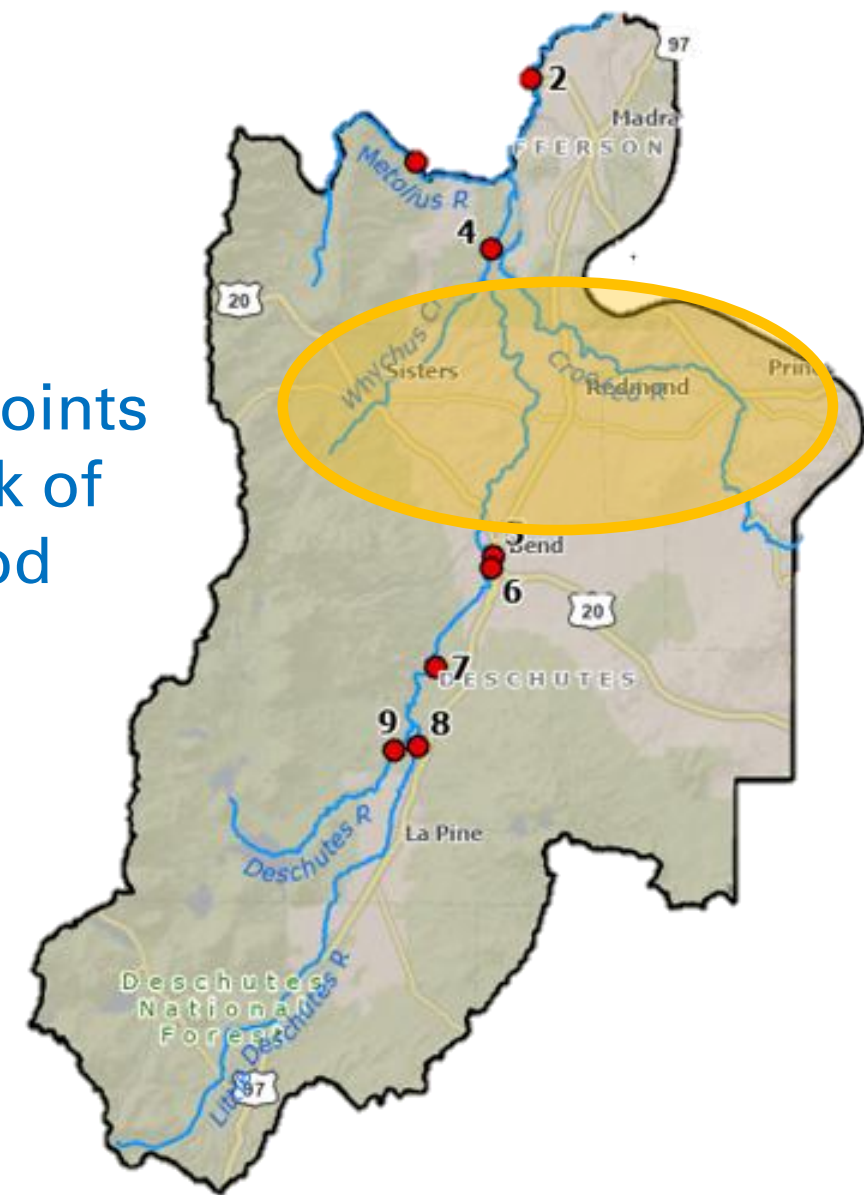


Discussion with partners to
identify areas of concern

Future focus areas

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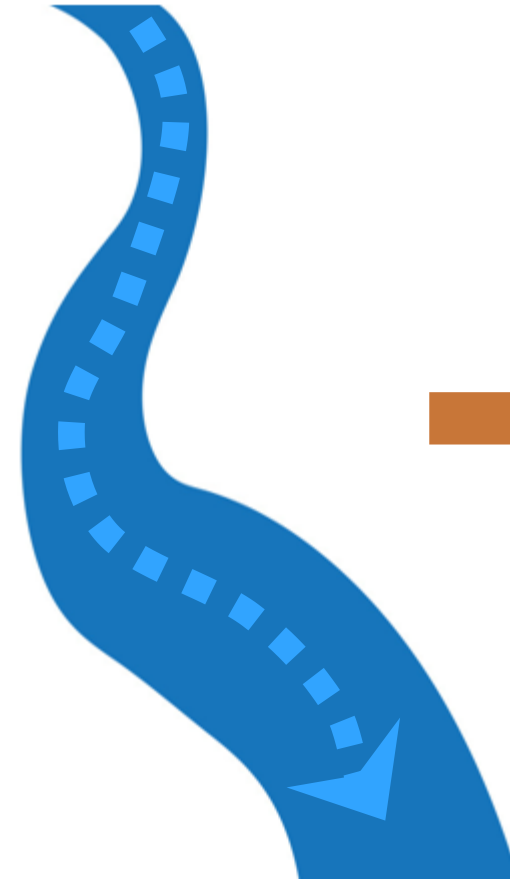
No formal analysis points due to lack of base period flow data.



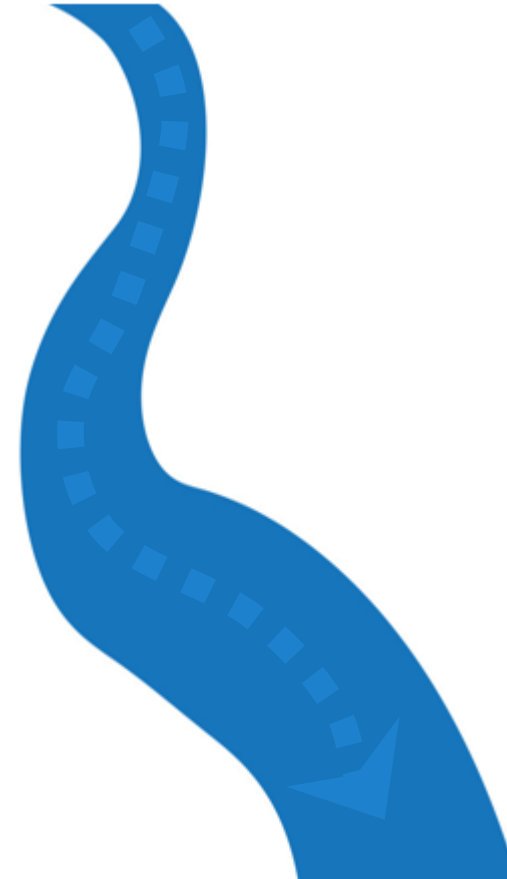
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1900



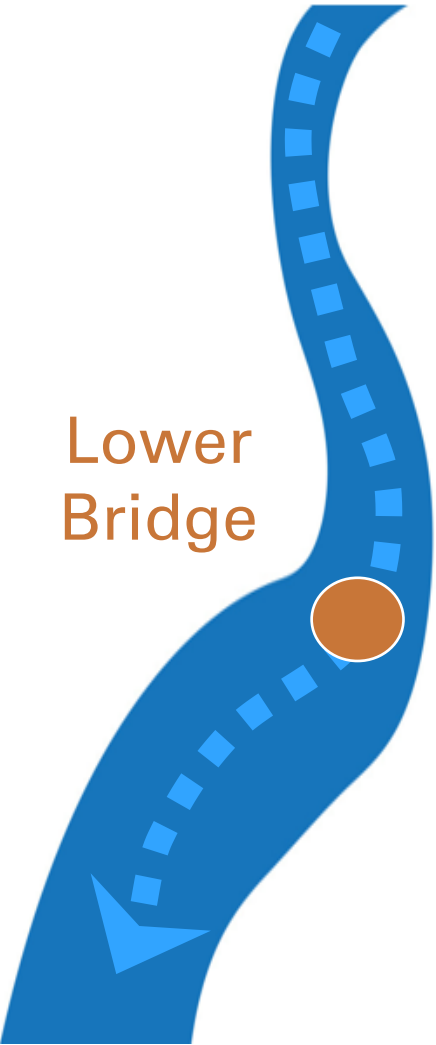
~~1900~~



Review changes in
availability over time



Consider eligibility
of future projects



ISWR flows are:

- Tracked through gage network
- Periodically audited where no gages
- Part of bi-weekly storage report

New gage at Lower Bridge would further support verification.

Future focus areas

No.	Topic
6	Protected flow verification
7	Consumptive use factors
8	Temporary credit uncertainty
9	7j permits
10	Impact to springs + quality



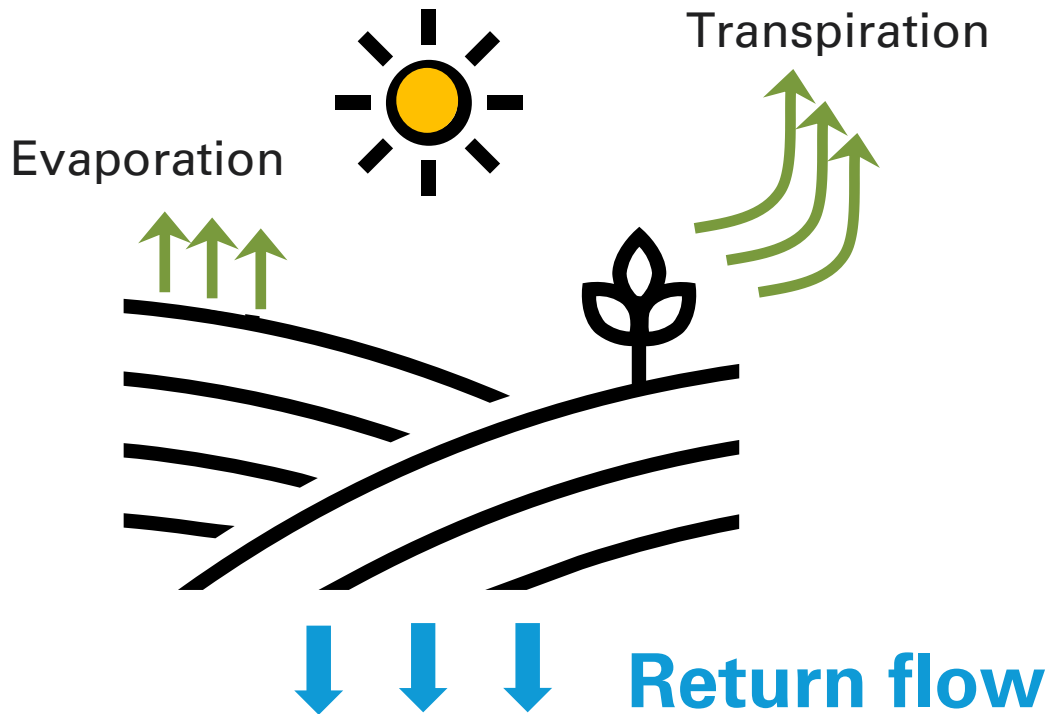
Work with partners on funding strategy for new gage



Use new gage to help verify instream flows

CU factors under review

Consumptive use

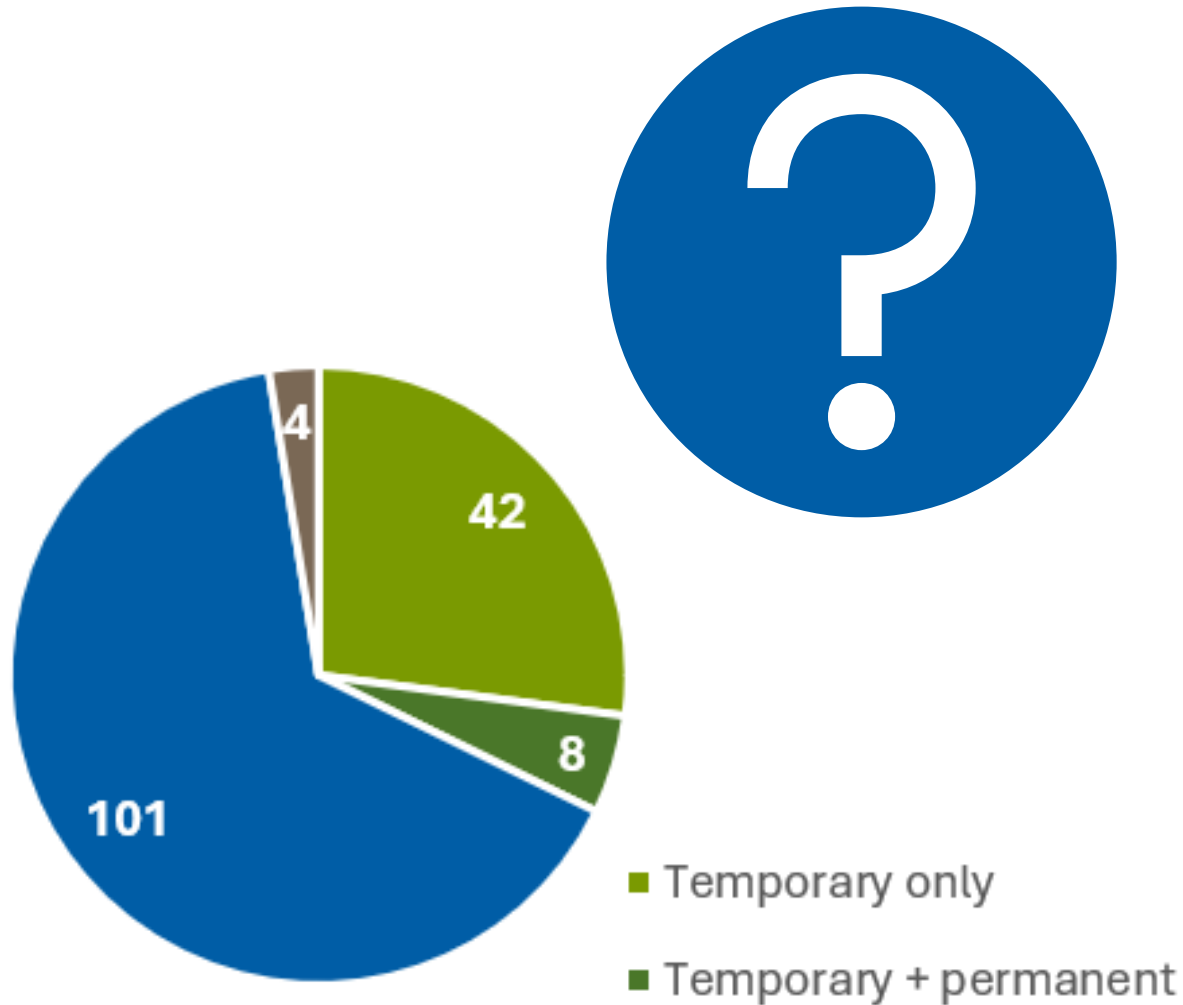


Future focus areas

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Future focus areas



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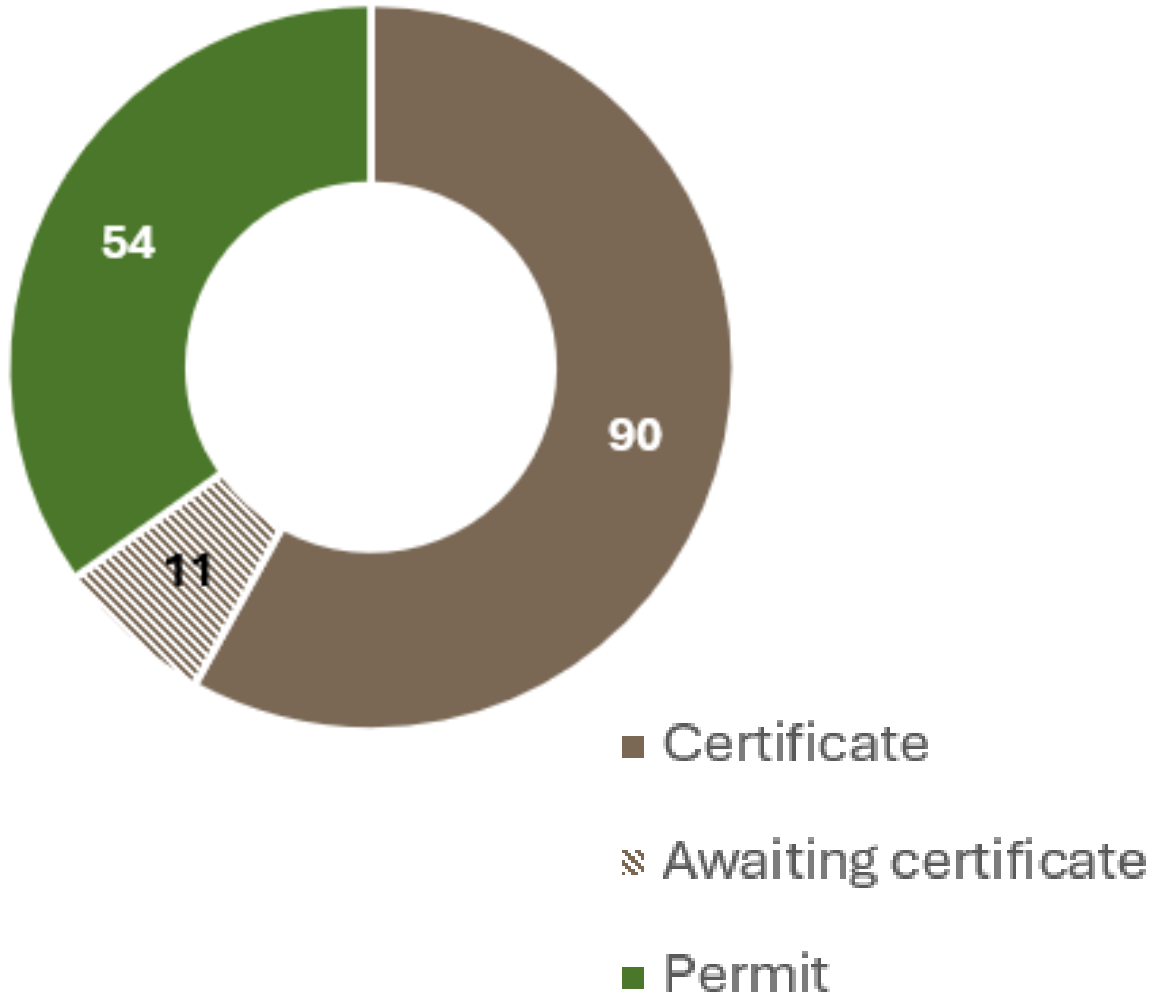


Evaluate potential tools
to manage uncertainty



Improve awareness of
uncertainty for applicants

Future focus areas



No.	Topic
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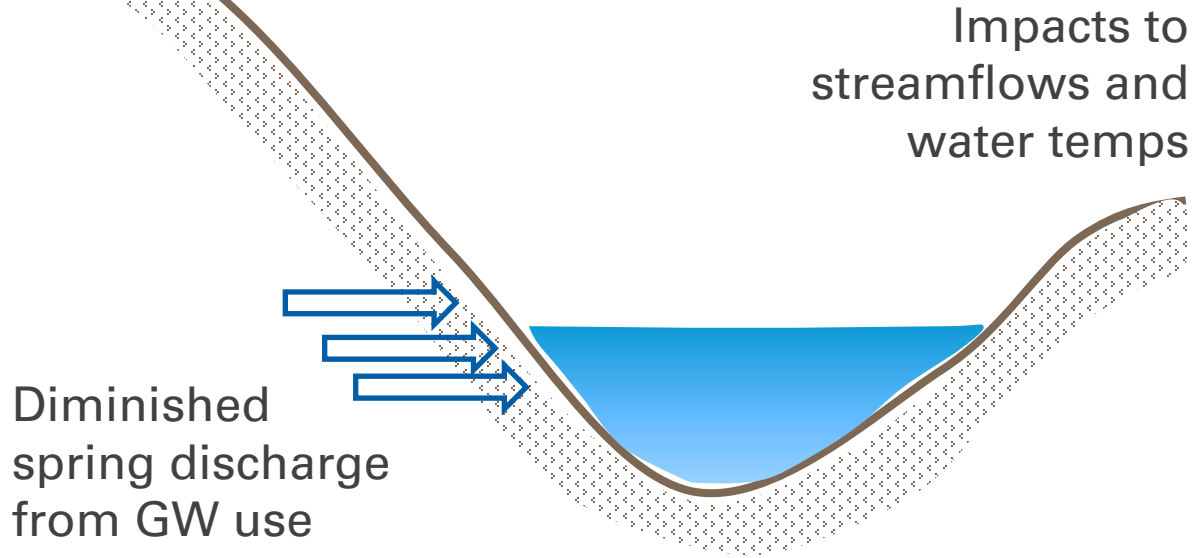


Prioritize review
of 7j permits



Initiate cancellation of undeveloped
portions of 7j permits as appropriate

Future focus areas



2023-2025: unsuccessful \$ request for OWRD to lead collaborative study to identify high value springs and understand fluxes and causes.

No.	Topic
6	Protected flow verification
7	Consumptive use factors
8	Temporary credit uncertainty
9	7j permits
10	Impact to springs + quality



Work with partners to identify specific needs and next steps

Discussion



Until 4:00 pm

Comments or questions on
proposed focus areas?



OREGON



WATER RESOURCES
DEPARTMENT

Thank you!



Oregon.gov/owrd



[@OregonGovWRD](https://www.youtube.com/@OregonGovWRD)



[Linkedin.com/company/owrd](https://www.linkedin.com/company/owrd)