

**Richard Devlin**  
Chair  
Oregon

**Chuck Sams**  
Oregon

**Mike Milburn**  
Montana

**Doug Grob**  
Montana



# Northwest **Power and** **Conservation** Council

**Guy Norman**  
Vice Chair  
Washington

**Patrick Oshie**  
Washington

**Jim Yost**  
Idaho

**Jeffery C. Allen**  
Idaho

July 7, 2021

## MEMORANDUM

**TO: Council Members**

**FROM: Brian DeKiep, Montana Staff**

**SUBJECT: Northern Grid Transmission.**

### **BACKGROUND:**

Presenter: Dave Angel and Chelsea Loomis

Summary:

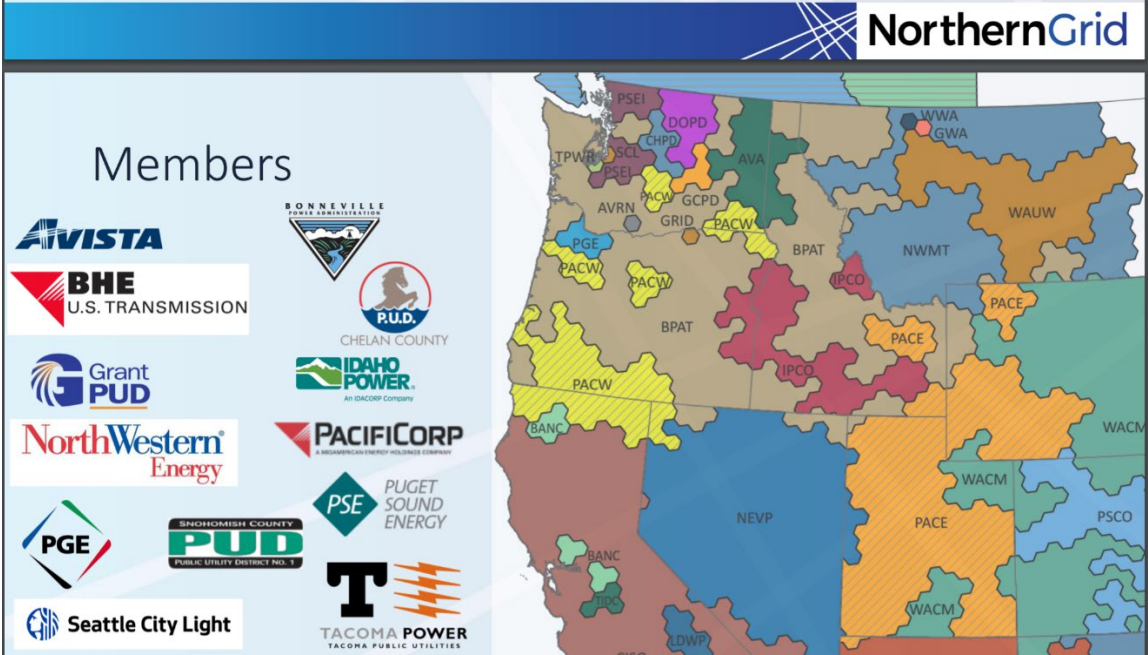
Jurisdictional and non-jurisdictional entities have formed a single transmission planning association – NorthernGrid – that will facilitate regional transmission planning across the Pacific Northwest and Intermountain West. The association members executed a Planning Agreement that will provide the region with:

- One common set of data and assumptions
- More opportunities to identify regional transmission projects
- A single stakeholder forum
- Elimination of duplicative administrative processes

The members intend for NorthernGrid to facilitate compliance with FERC requirements (including Order Nos. 890 and 1000) for those utilities that are required (or elect) to comply with such requirements, including cost allocation, when applicable. After Federal Energy Regulatory Commission approval, NorthernGrid replaced ColumbiaGrid and Northern Tier Transmission Group which facilitate the compliance today.

The NorthernGrid members include Bonneville Power Administration, investor-owned utilities, and consumer-owned utilities located in California, Idaho, Montana, Oregon, Utah, Washington and Wyoming.

NorthernGrid launched January 1, 2020.



[https://www.northerngrid.net/private-media/documents/2020.06.06.NG Introduction.pdf](https://www.northerngrid.net/private-media/documents/2020.06.06.NG%20Introduction.pdf)

The background of the slide features a blue gradient with a white grid pattern of thick, intersecting diagonal lines.

# NorthernGrid

Northwest Power and  
Conservation Council  
July 14, 2021

# Topics

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Introduction to NorthernGrid

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2030 Data Submission

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Regional Transmission Power Flows



# Association of Members



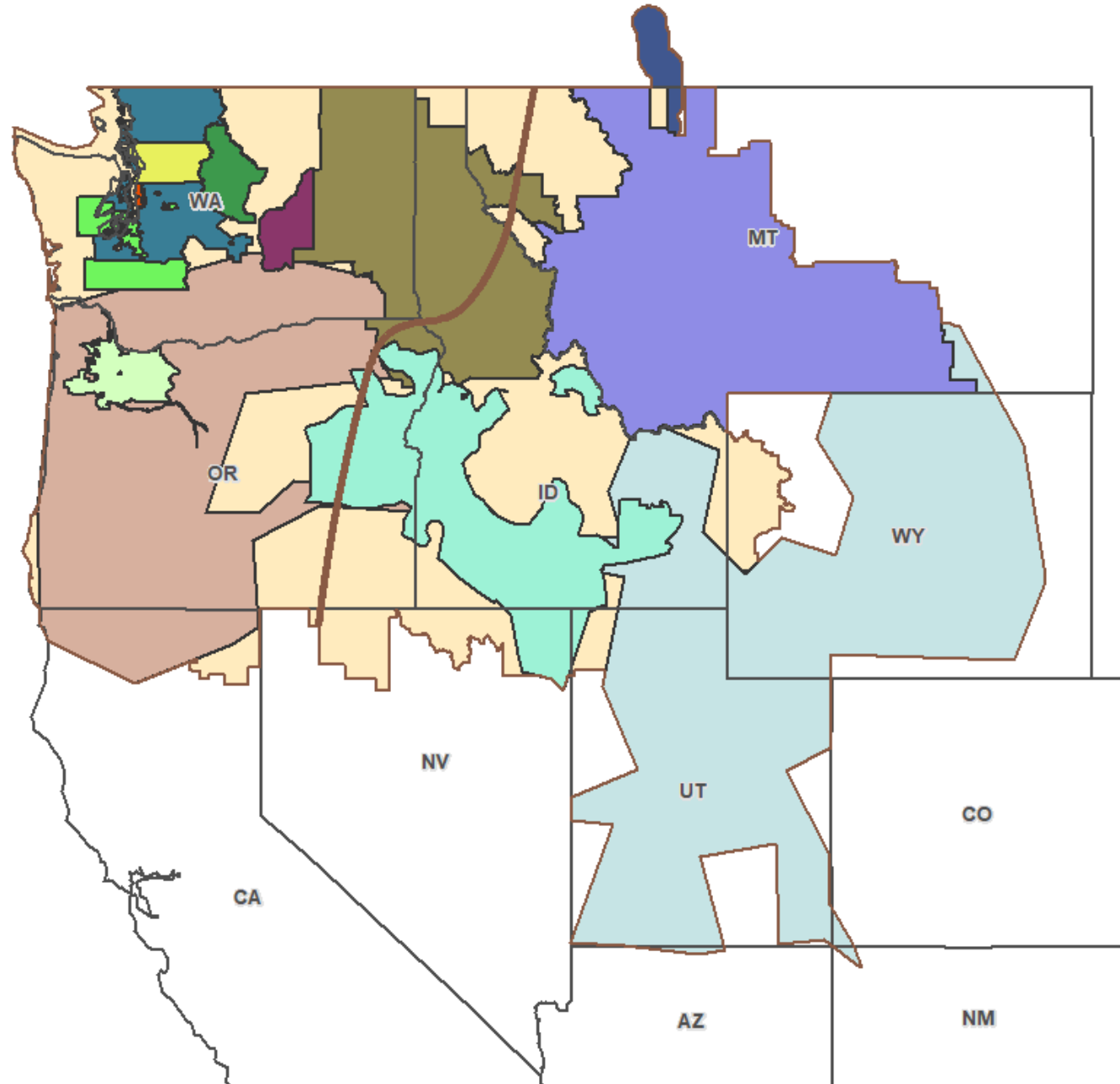
CHELAN COUNTY



An IDACORP Company

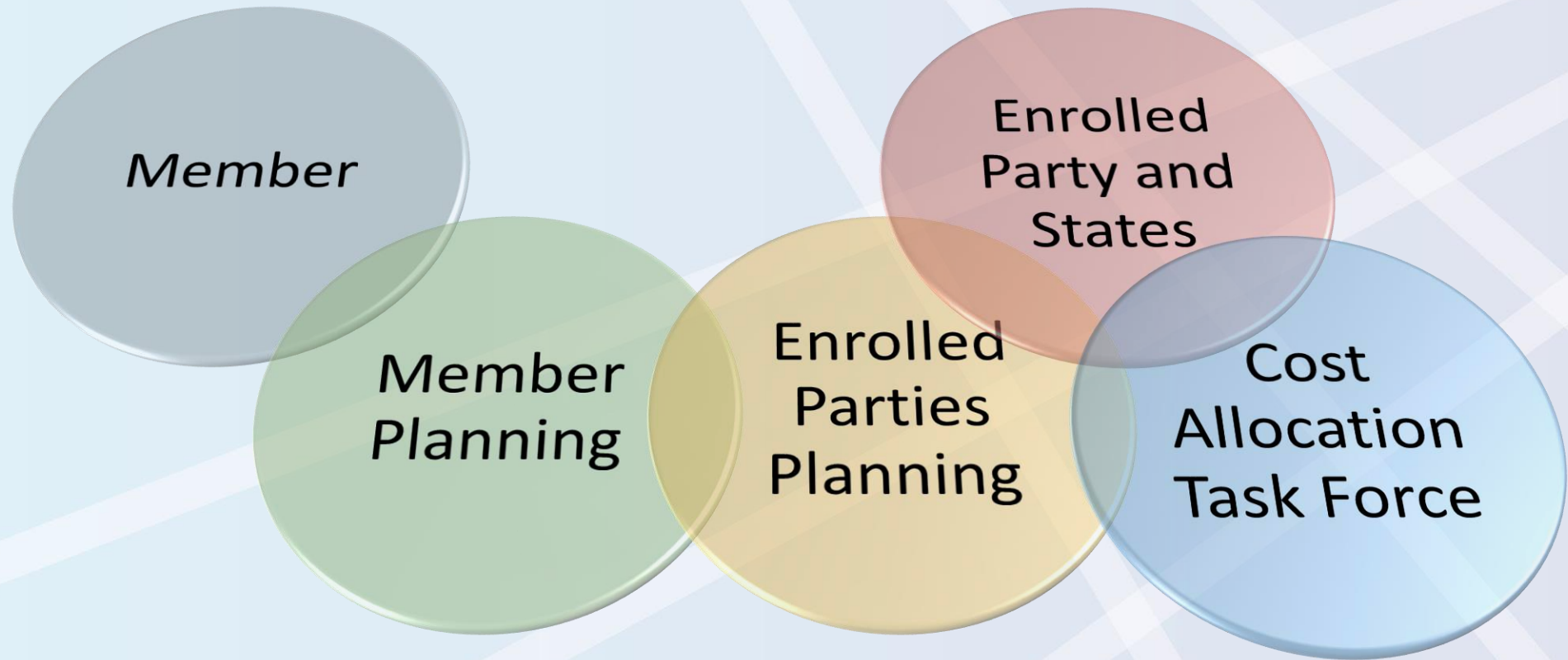


TACOMA POWER  
TACOMA PUBLIC UTILITIES



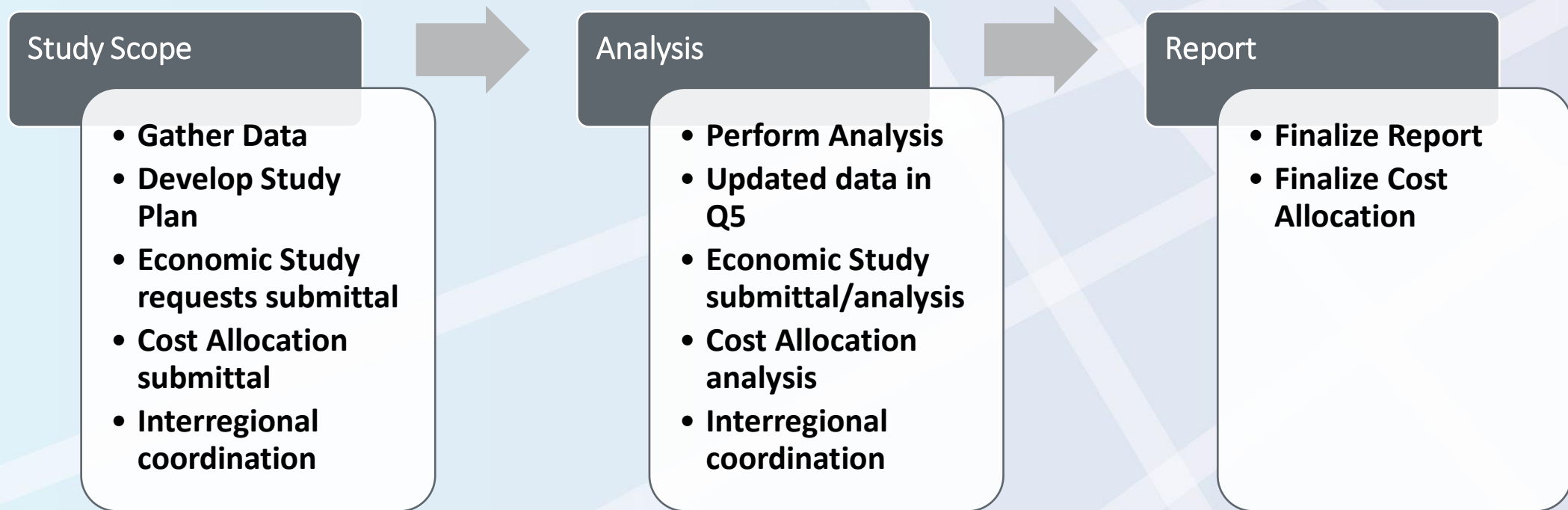
**NorthernGrid**

# Committees



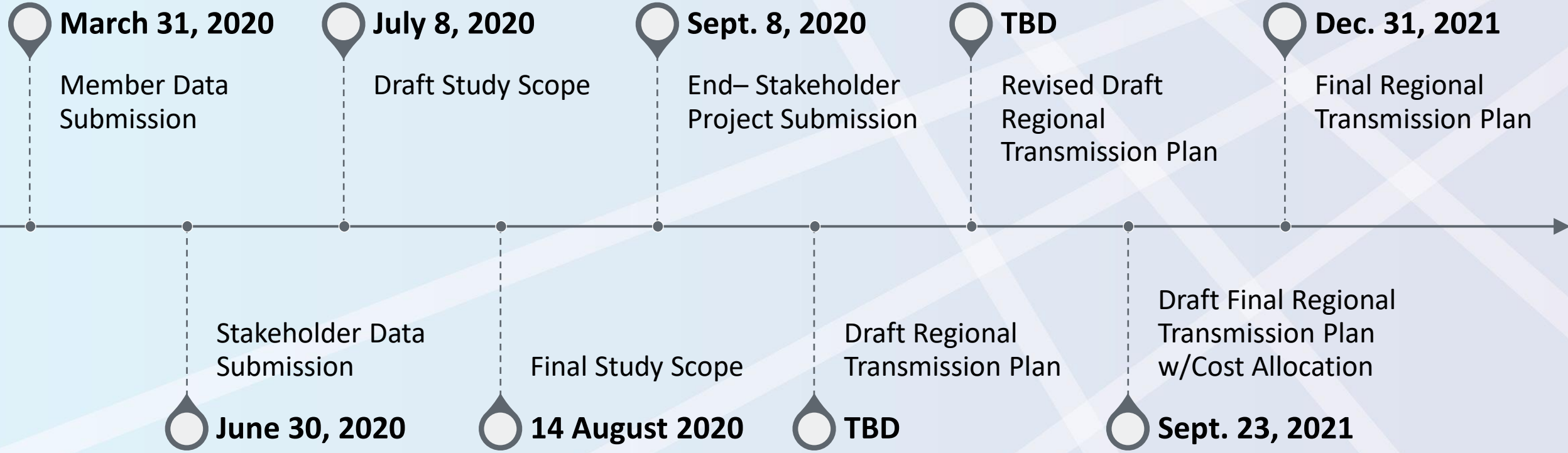
# Regional Transmission Process

- Work together to create a Regional Plan that “exceeds” a simple rollup of all the Local Area Plans



A Regional Transmission Plan is not a Construction Plan

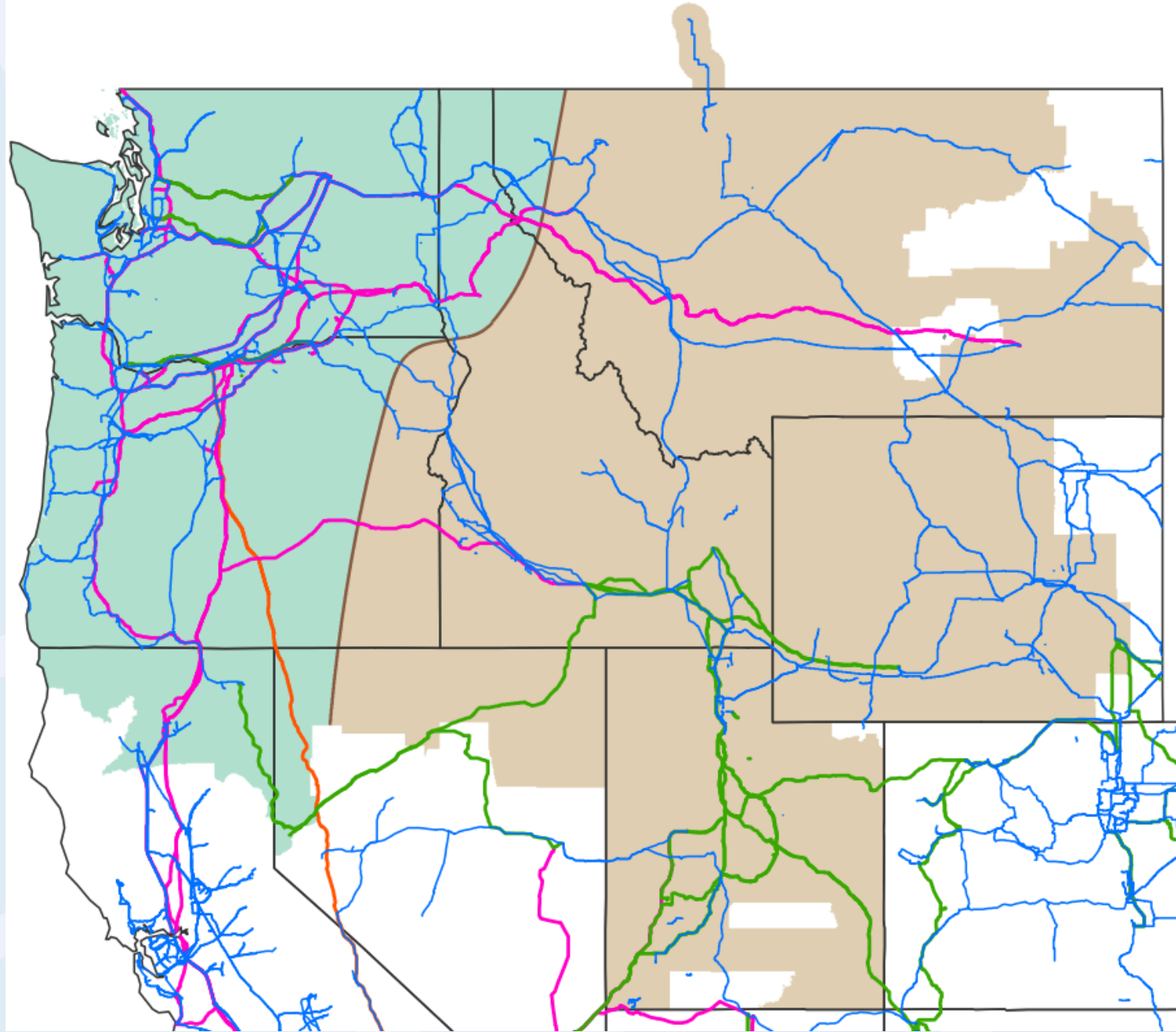
# NorthernGrid Schedule of Deliverables





# NorthernGrid Subregions

- Pacific Northwest
- Intermountain

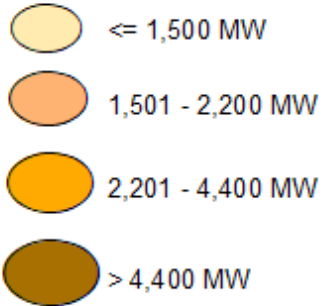


# Summer Load

## Annual Summer Load Growth and Peak Load

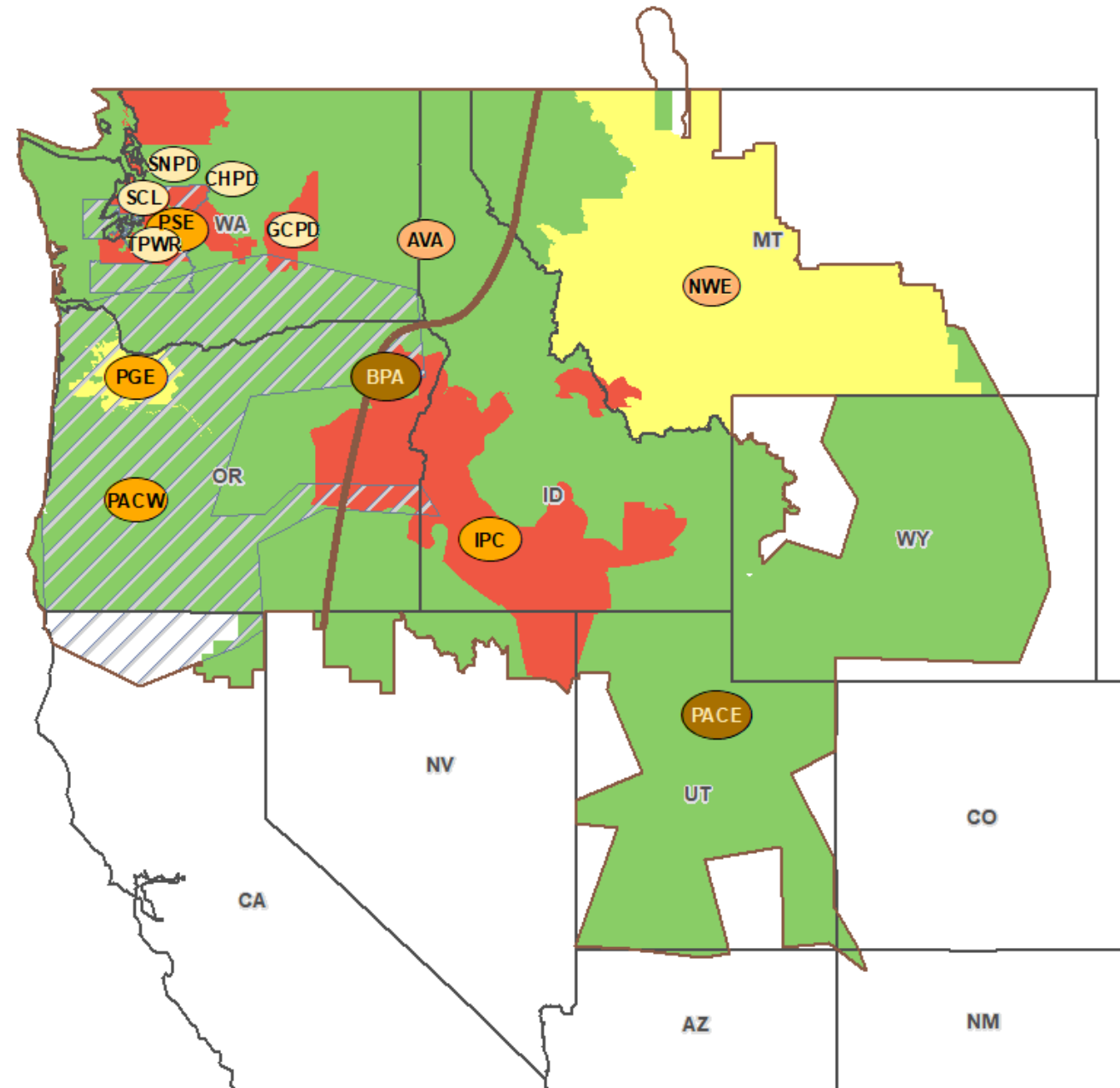
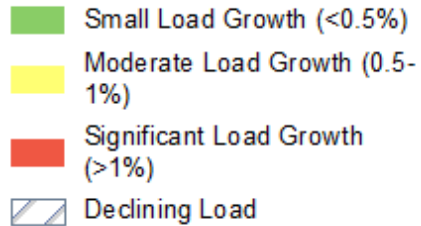
2024 - 2030

### Summer Peak Load



NorthernGrid

### Annual Summer Load Growth

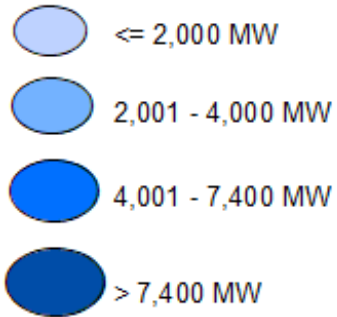


# Winter Load

## Annual Winter Load Growth and Peak Load

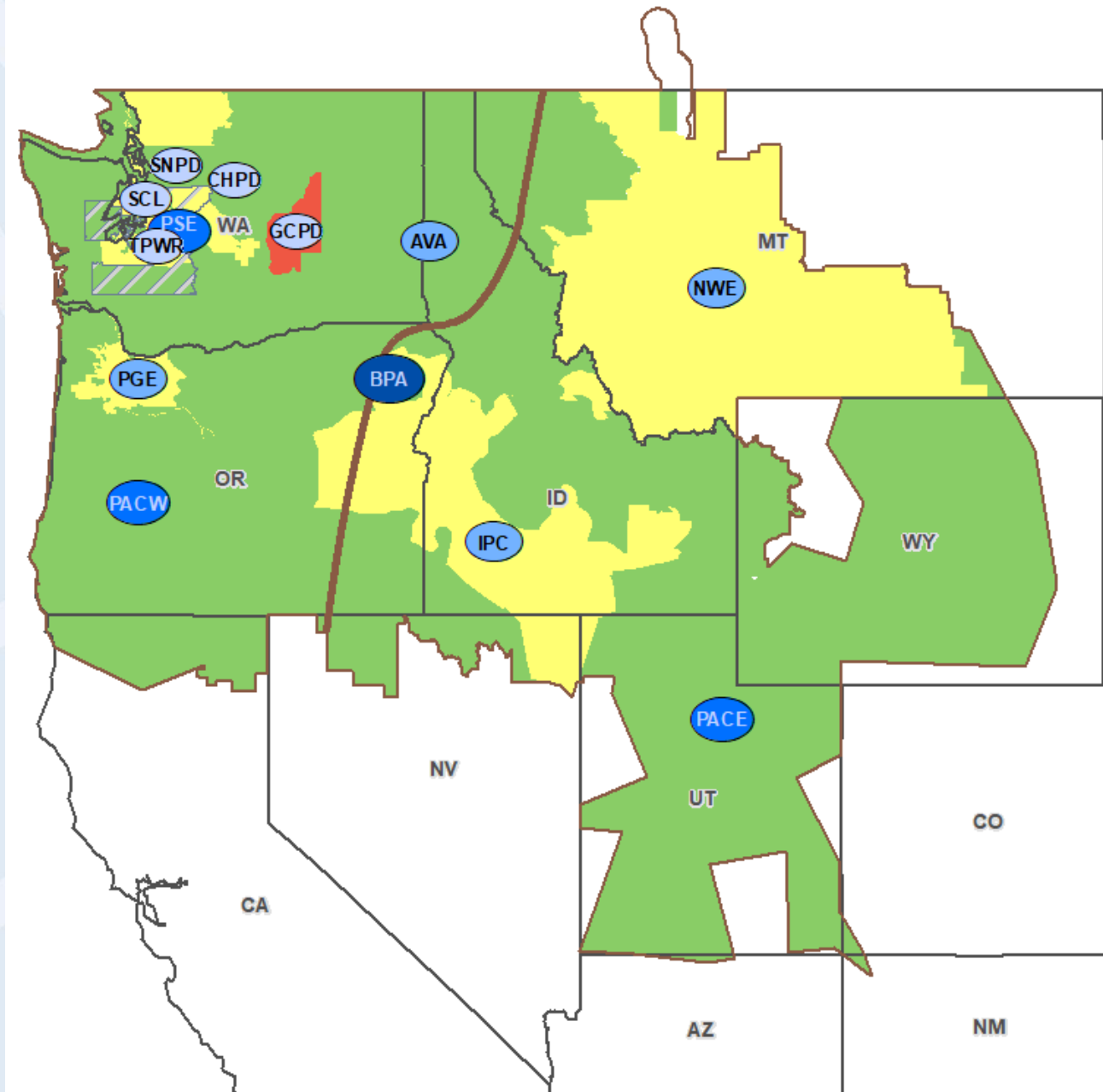
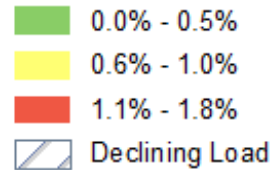
2024 - 2030

### Winter Peak Load



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### Annual Winter Load Growth



# 2030 Resource Retirements



Coal



Natural Gas



Wind

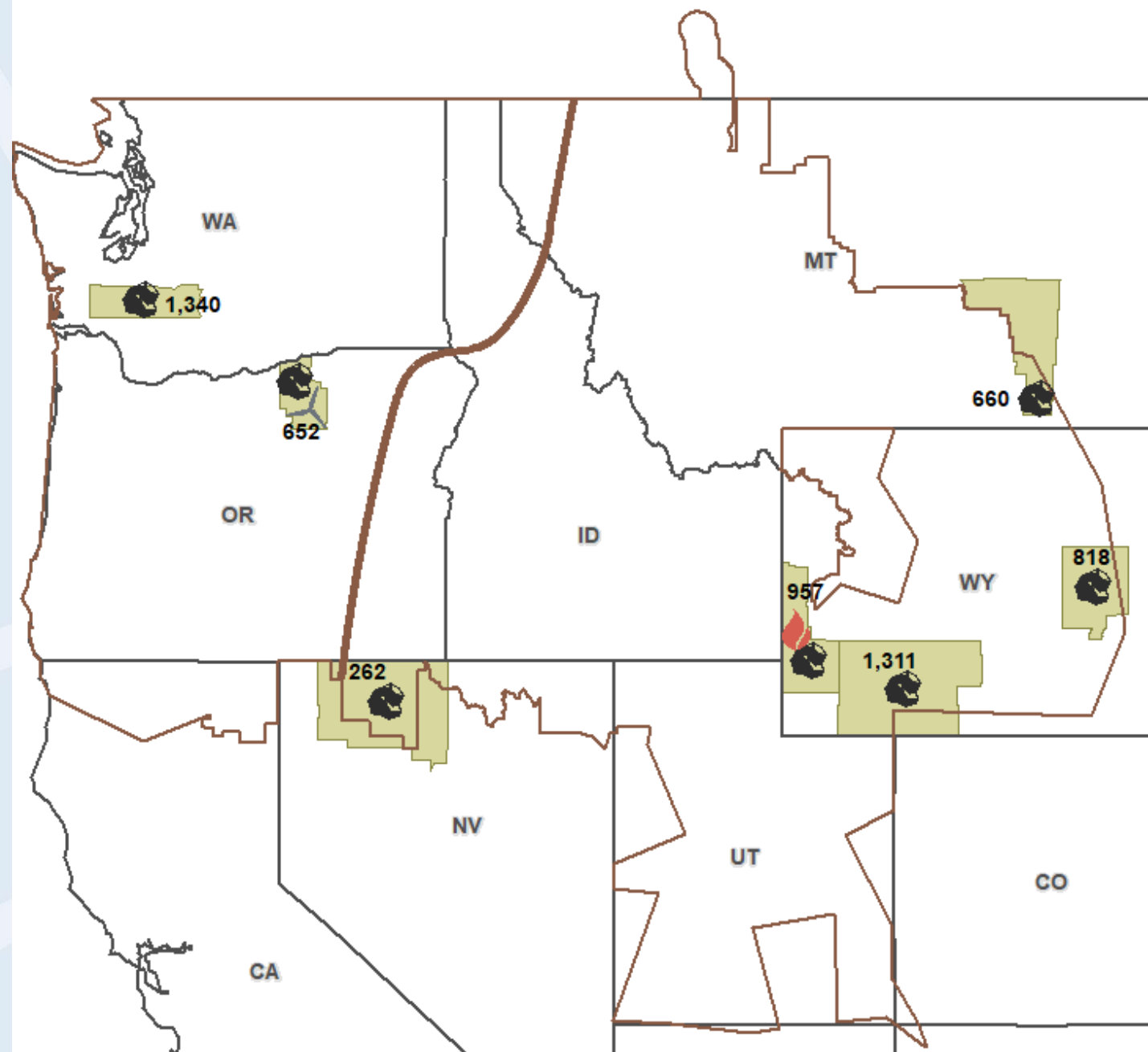


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County with Resource Retirement

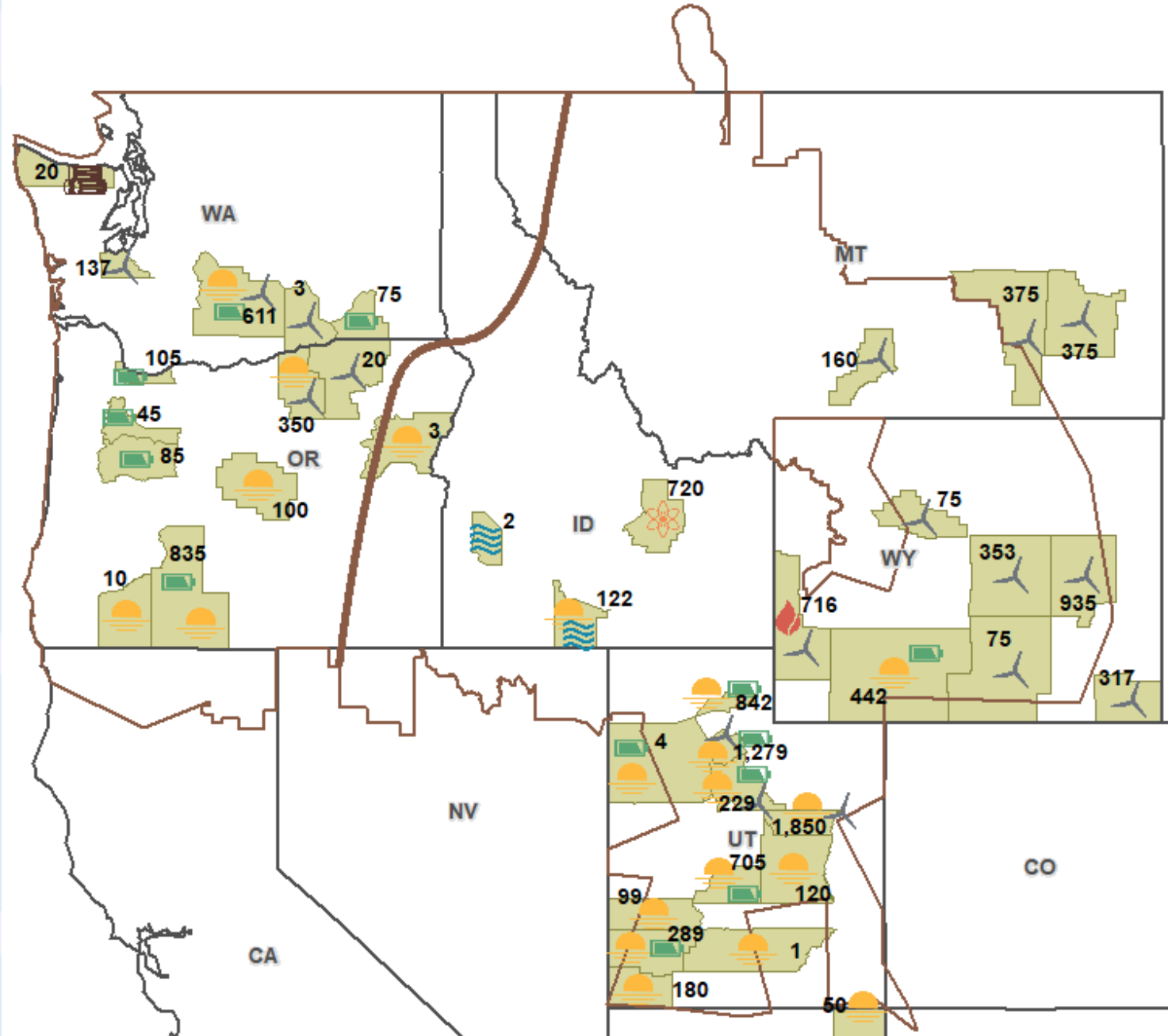
Numbers indicate total MW of retirement in the county







# 2030 Resource Additions

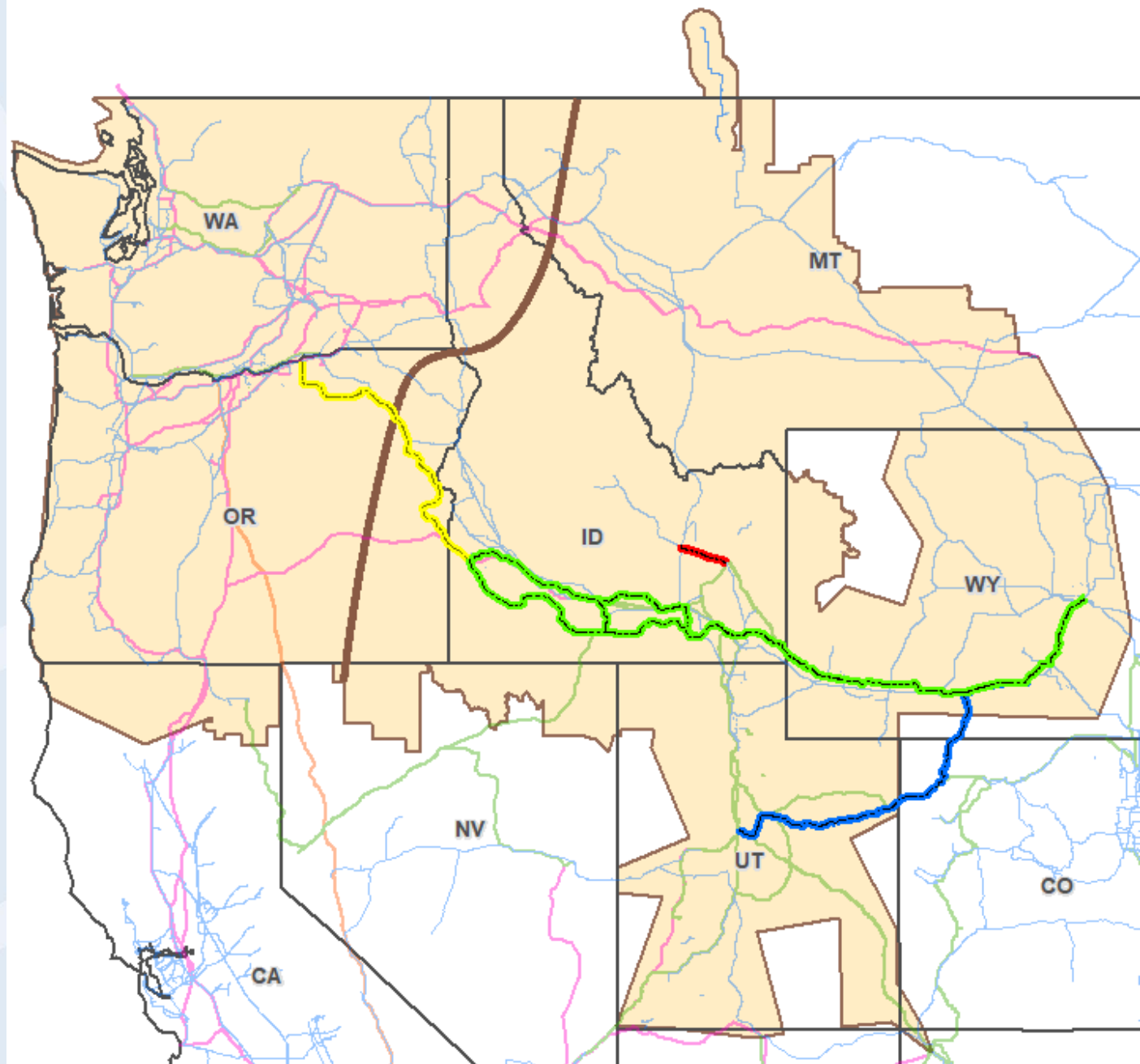
-  Hydro
-  Natural Gas
-  Nuclear
-  Solar
-  Storage
-  Wind
-  Wood Waste
-  NorthernGrid
-  County with Resource Addition

Numbers indicate total MW of addition in the county

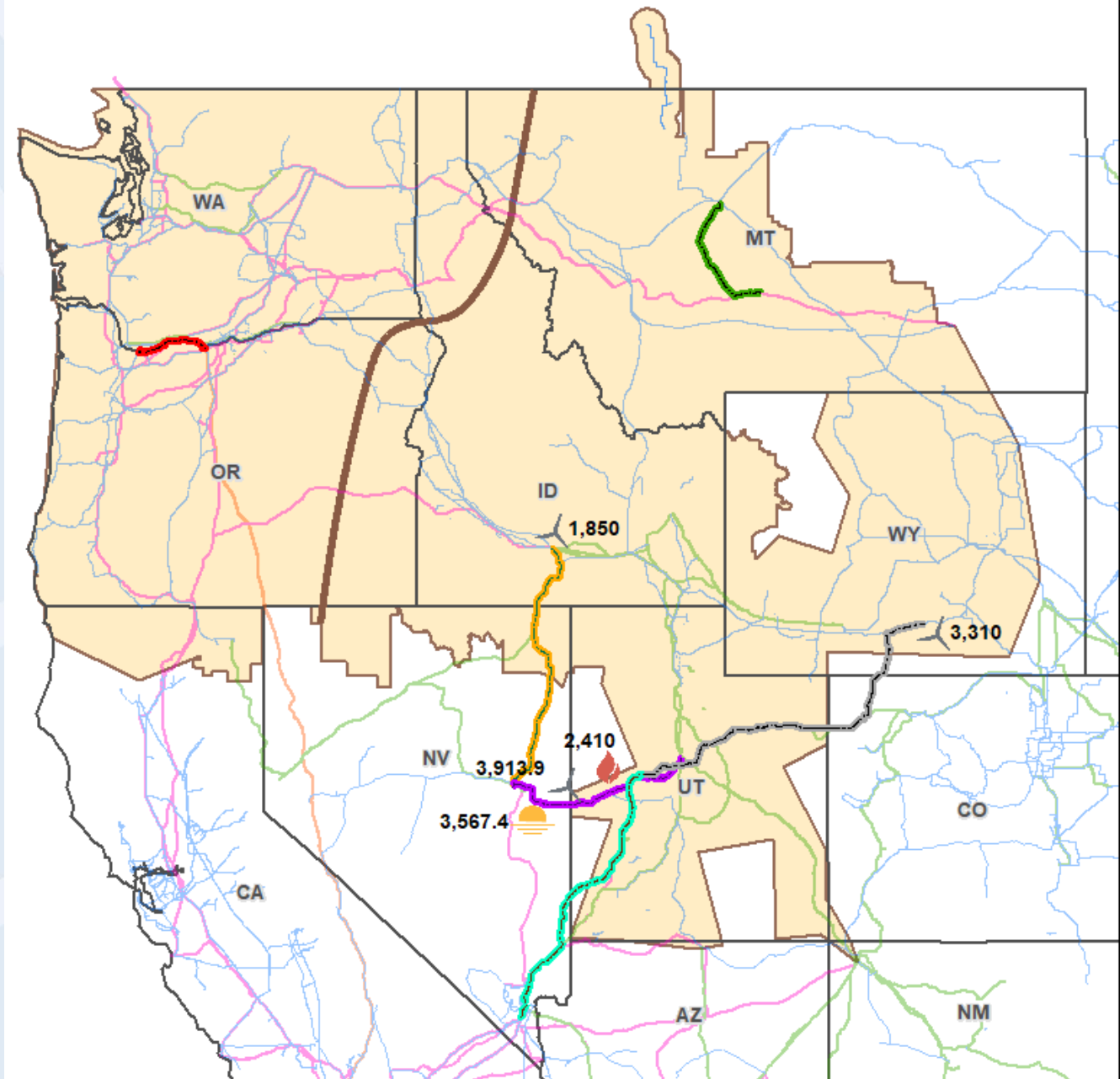
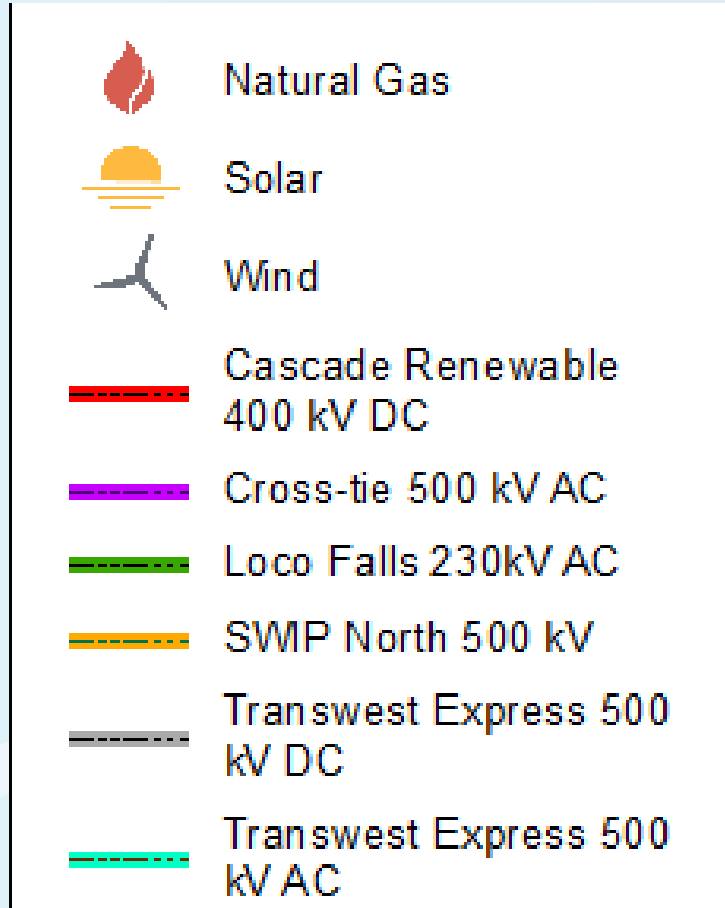


# 2030 Member Transmission Projects

-  Antelope 345 kV AC\*
-  Boardman to Hemingway 500 kV AC
-  Gateway South 500 kV AC
-  Gateway West 500 kV AC



# 2030 Regional and Interregional Projects



# Past, Present and Potential Future Flows





# AC plus DC Intertie Daily Transfers

4/19/1998



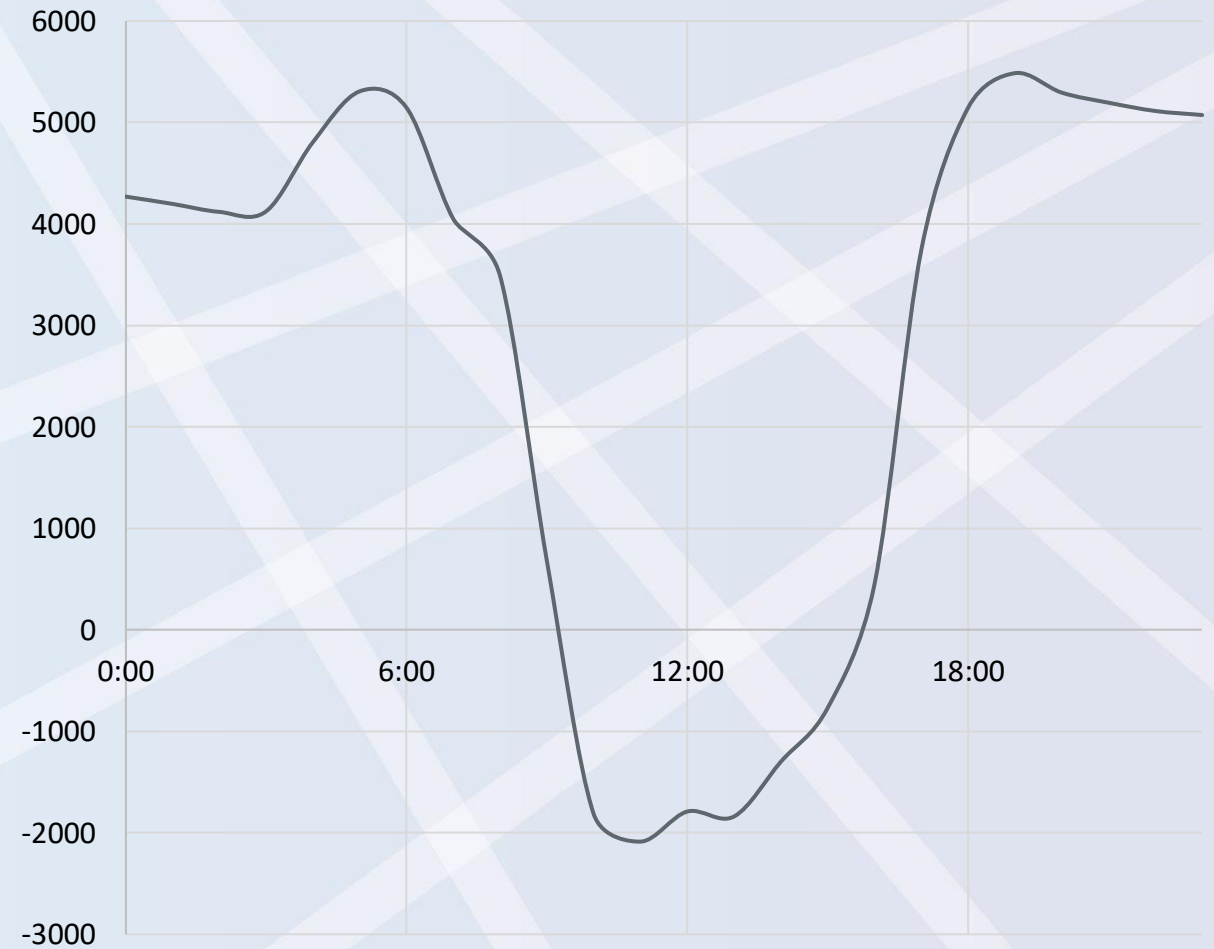
4/19/2020



# AC plus DC Intertie Daily Transfers

4/19/2020

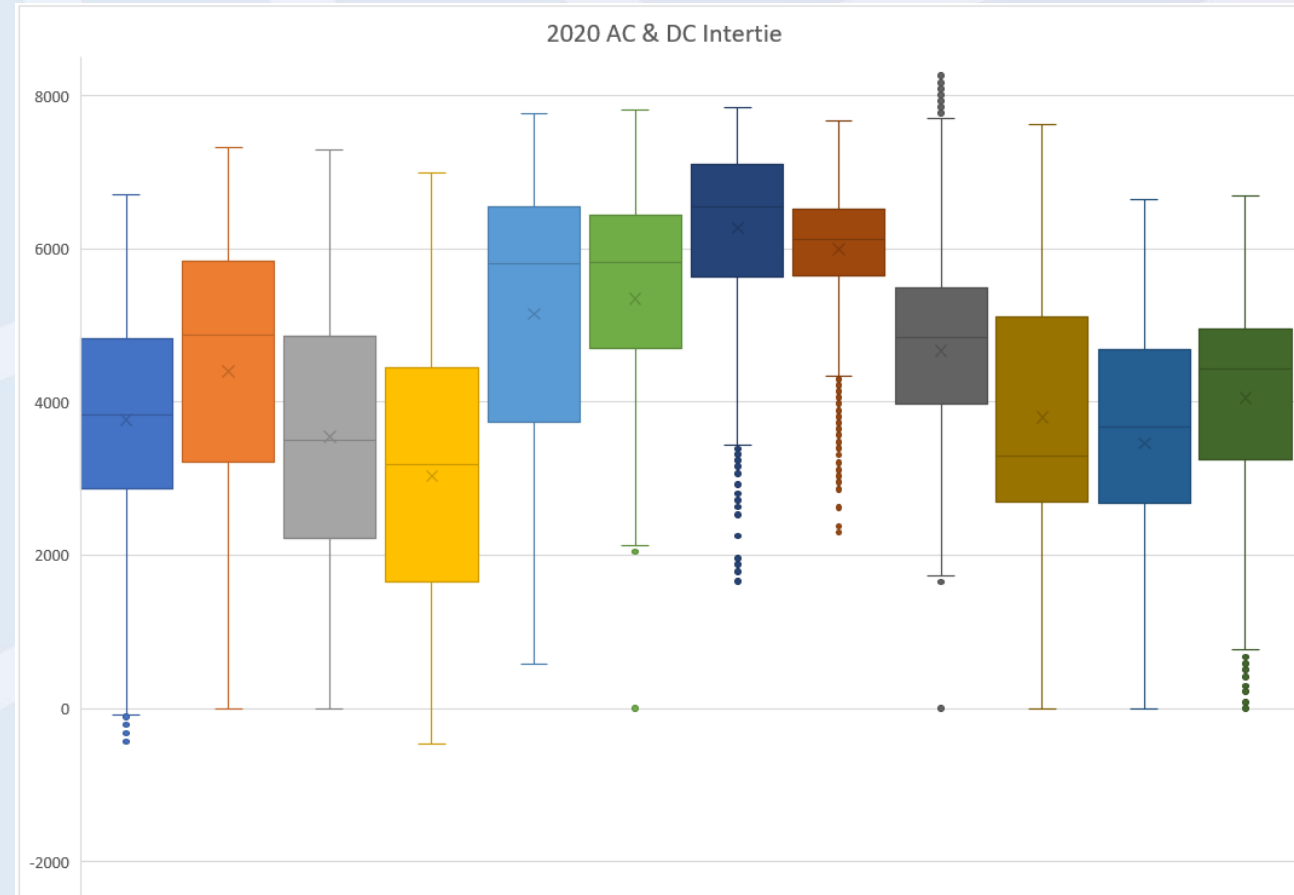
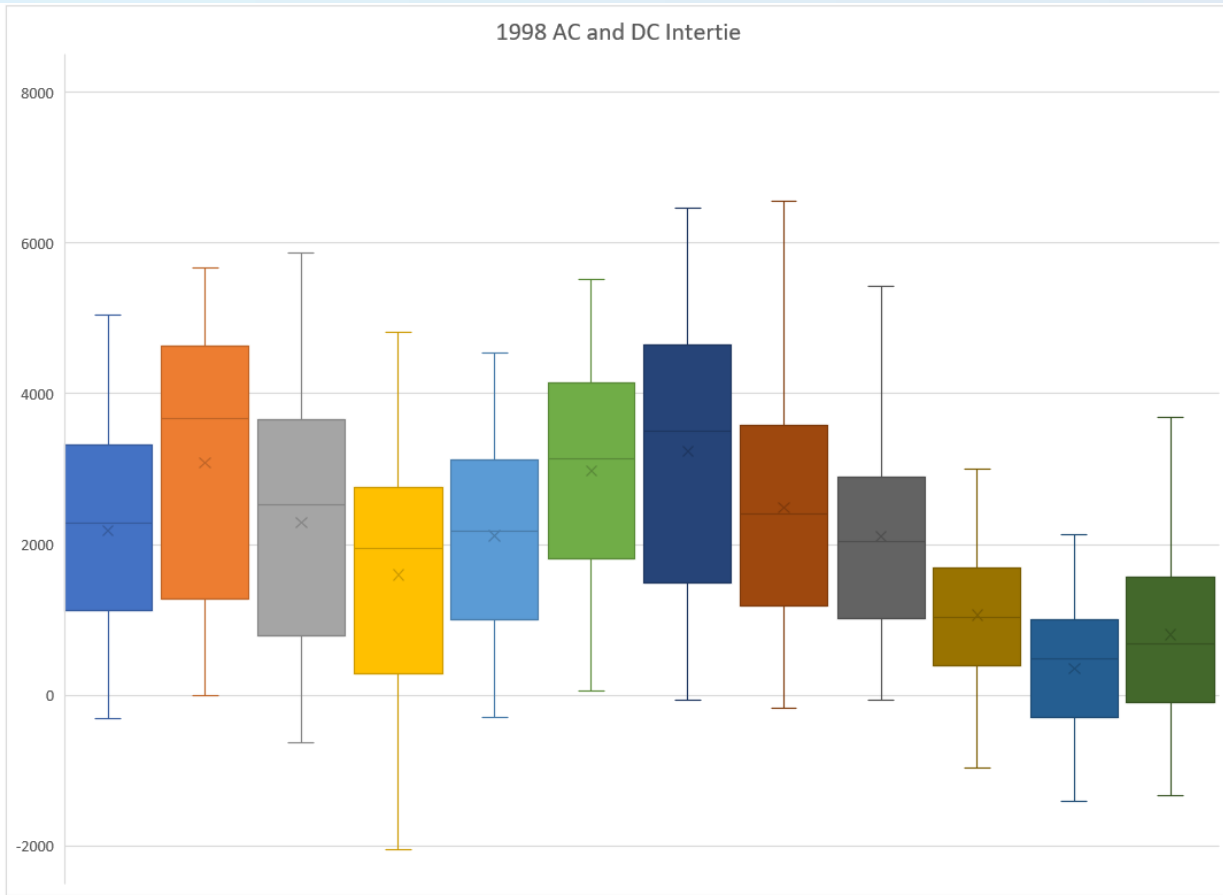
4/19/2030



# AC plus DC Intertie Monthly Transfers

1998

2020



■ January ■ February ■ March ■ April ■ May ■ June ■ July ■ August ■ September ■ October ■ November ■ December



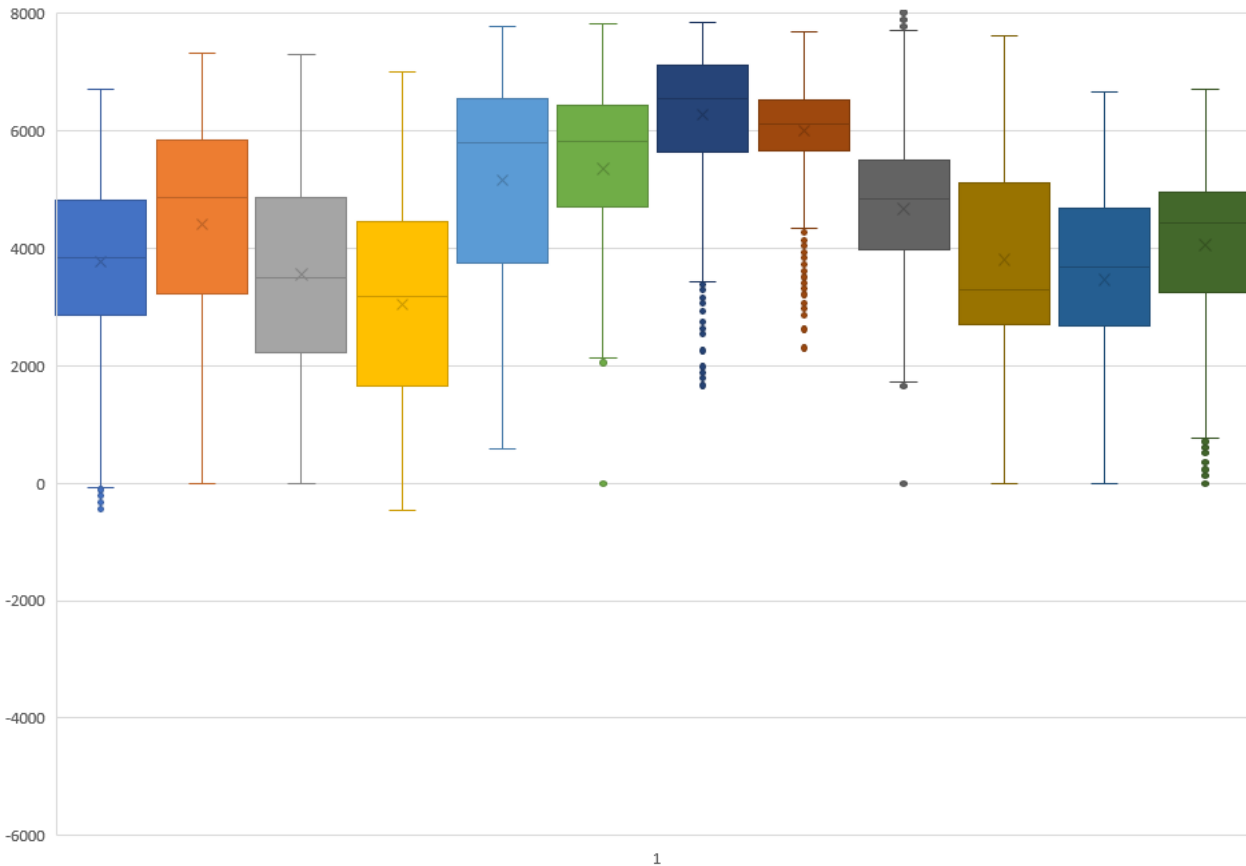
NorthernGrid

# AC plus DC Intertie Monthly Transfers

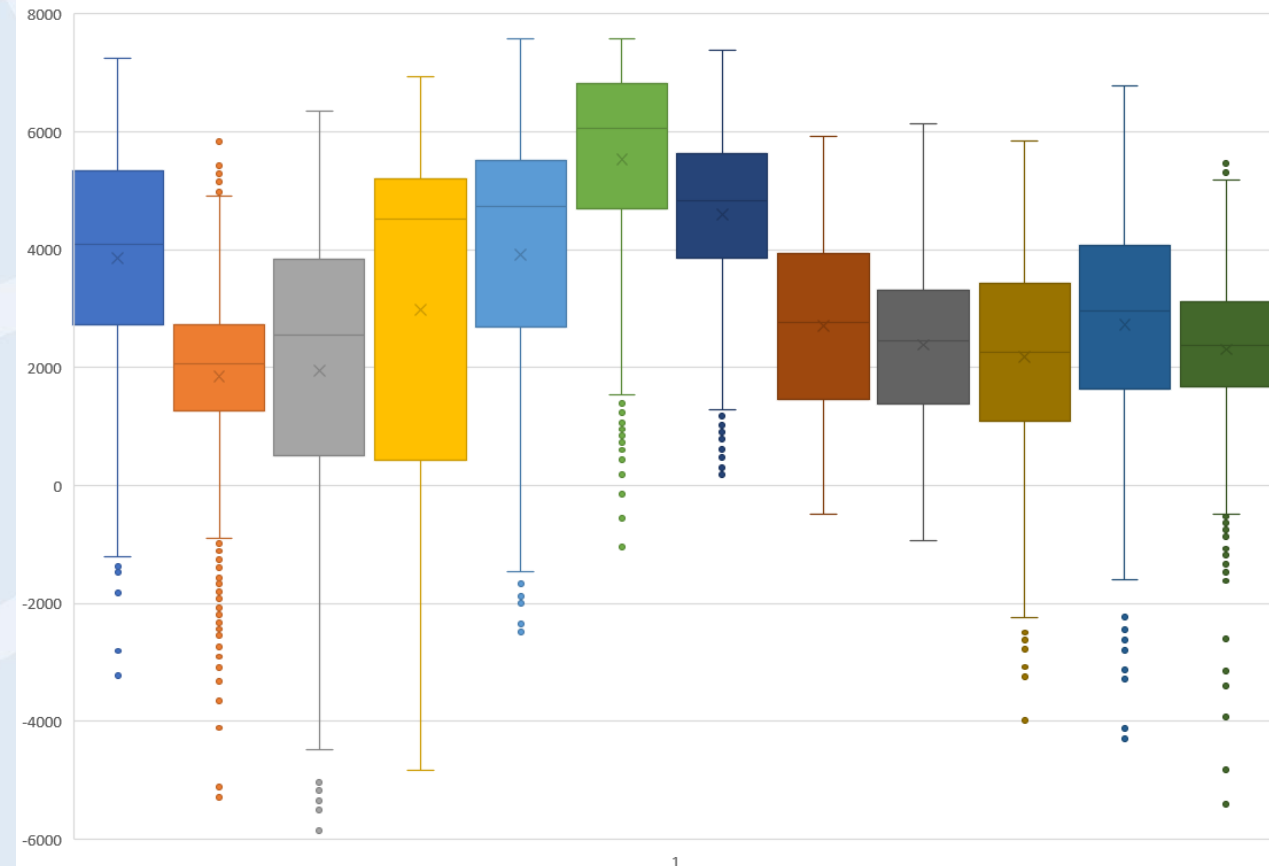
## 2020

## 2030

2020 AC & DC Intertie



AC & C Intertie 2030



■ January ■ February ■ March ■ April ■ May ■ June ■ July ■ August ■ September ■ October ■ November ■ December



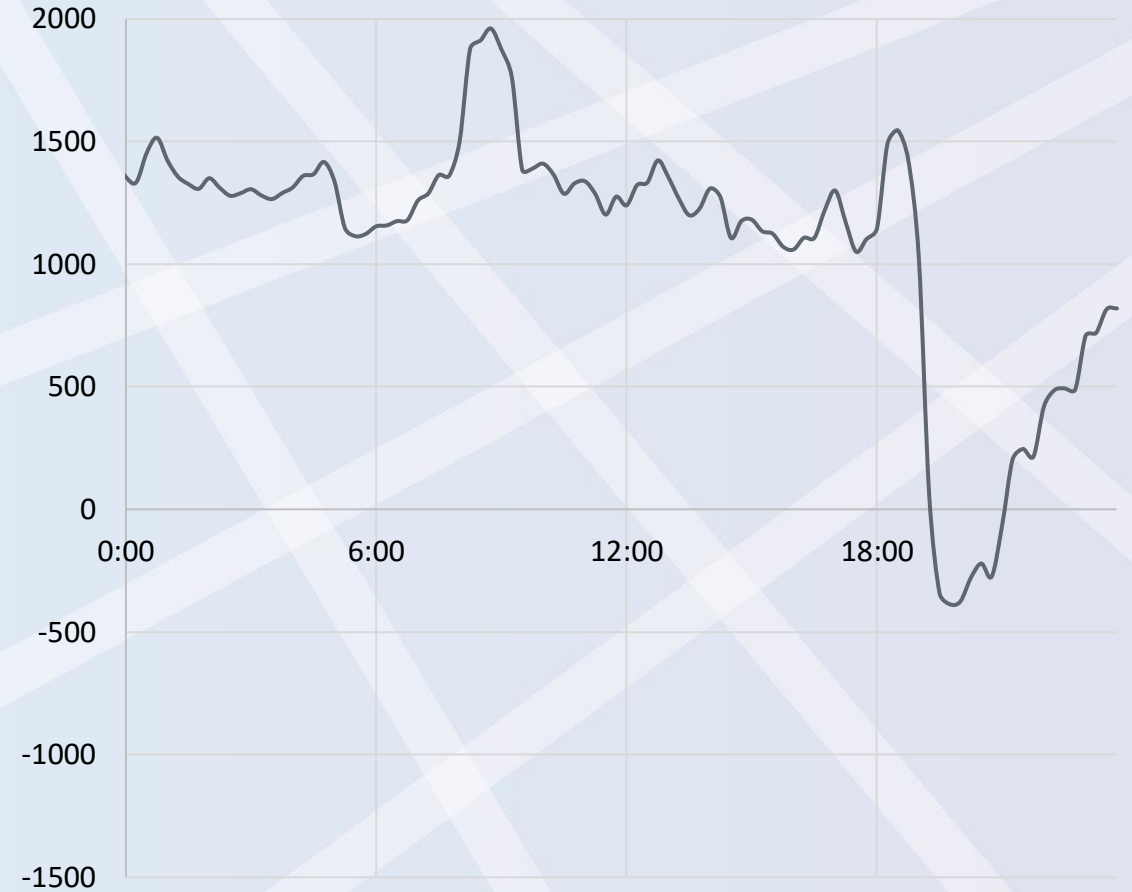
**NorthernGrid**

# Northwest to British Columbia Daily Transfers

**4/19/1998**



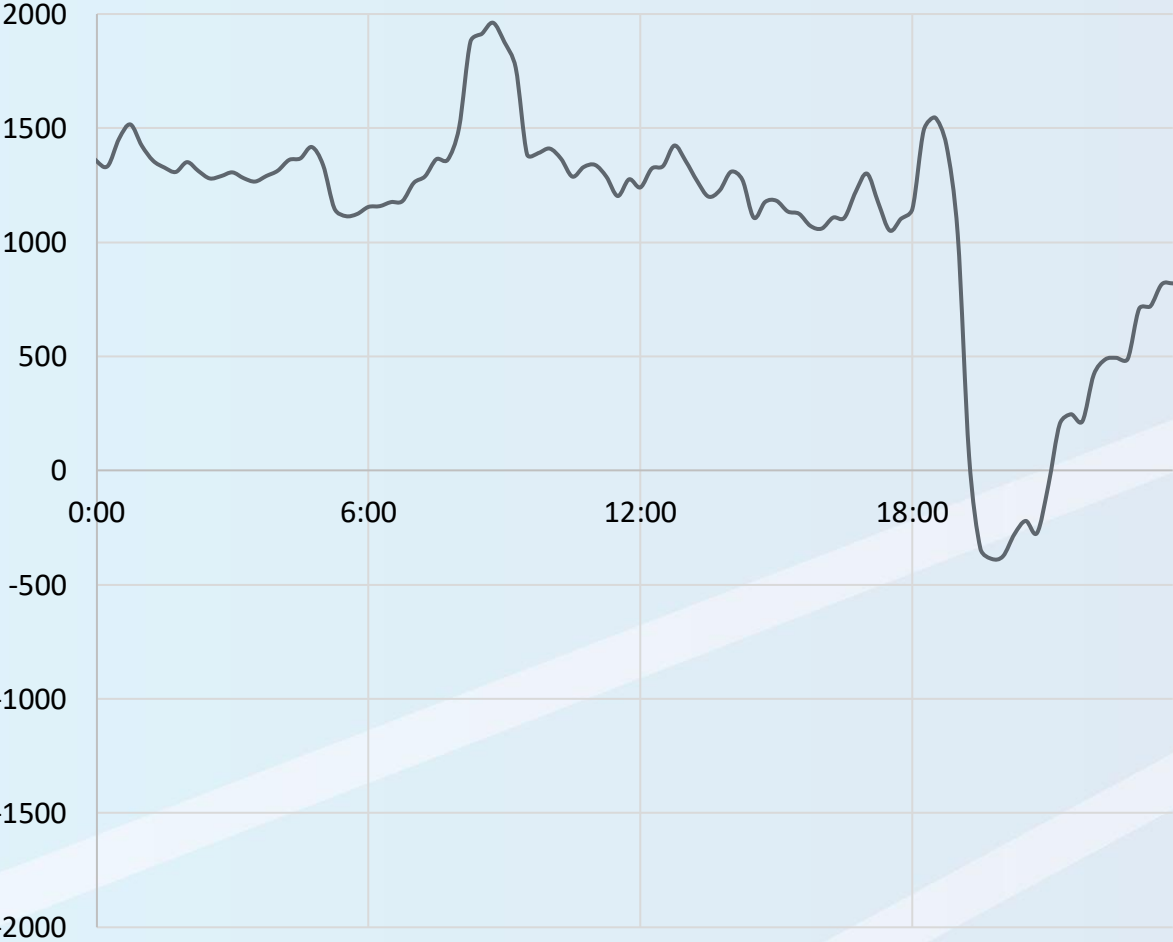
**4/19/2020**



# Northwest to British Columbia Daily Transfers

4/19/2020

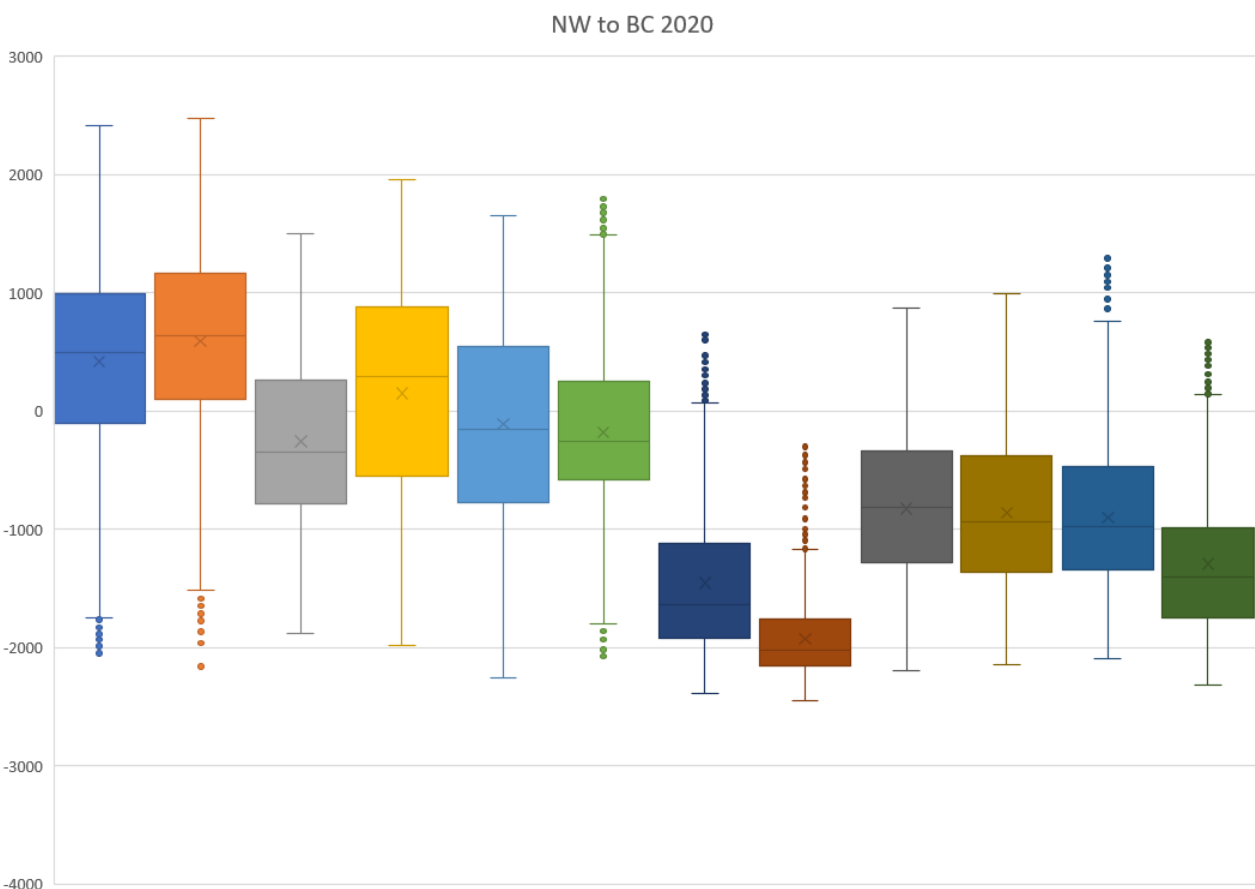
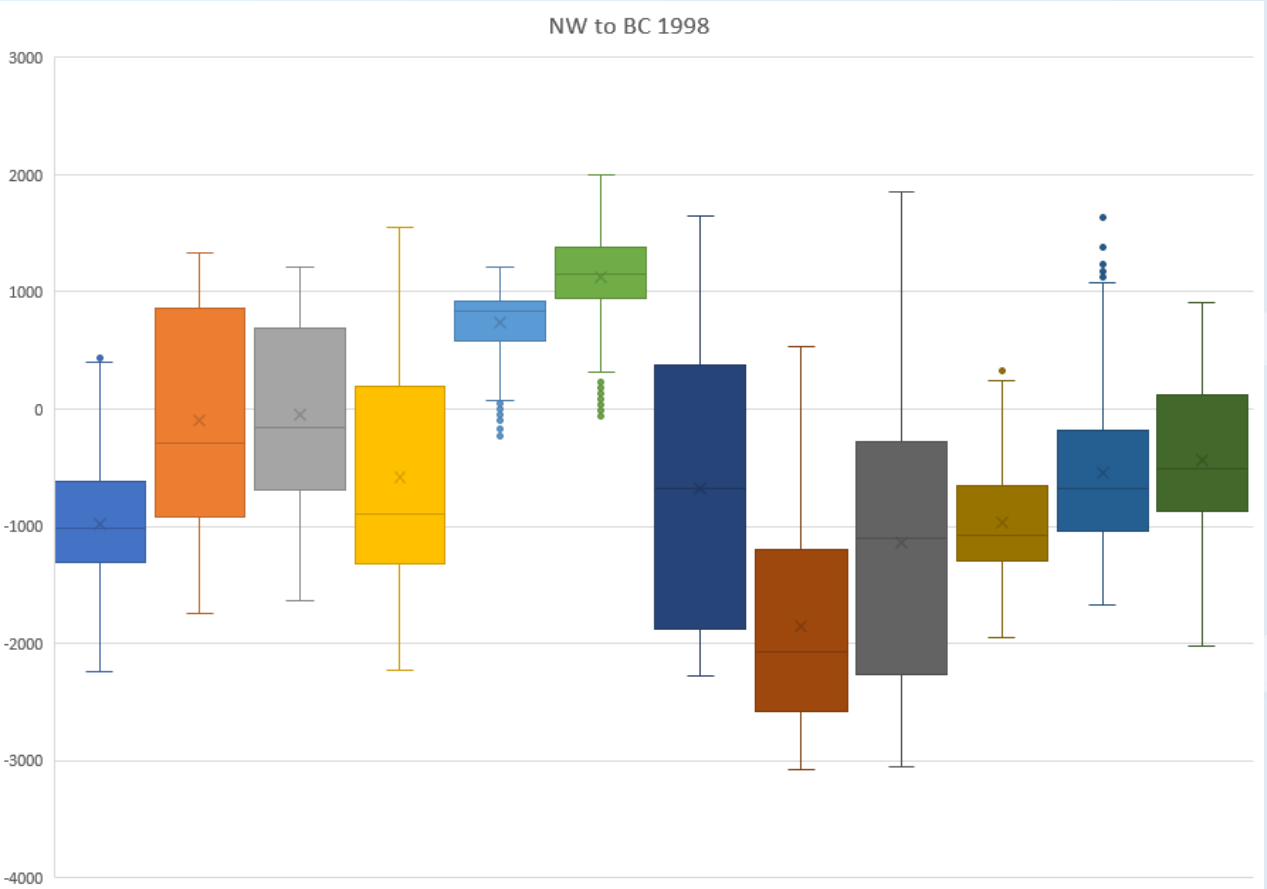
4/19/2030



# Northwest to British Columbia Monthly Transfers

## 1998

## 2020



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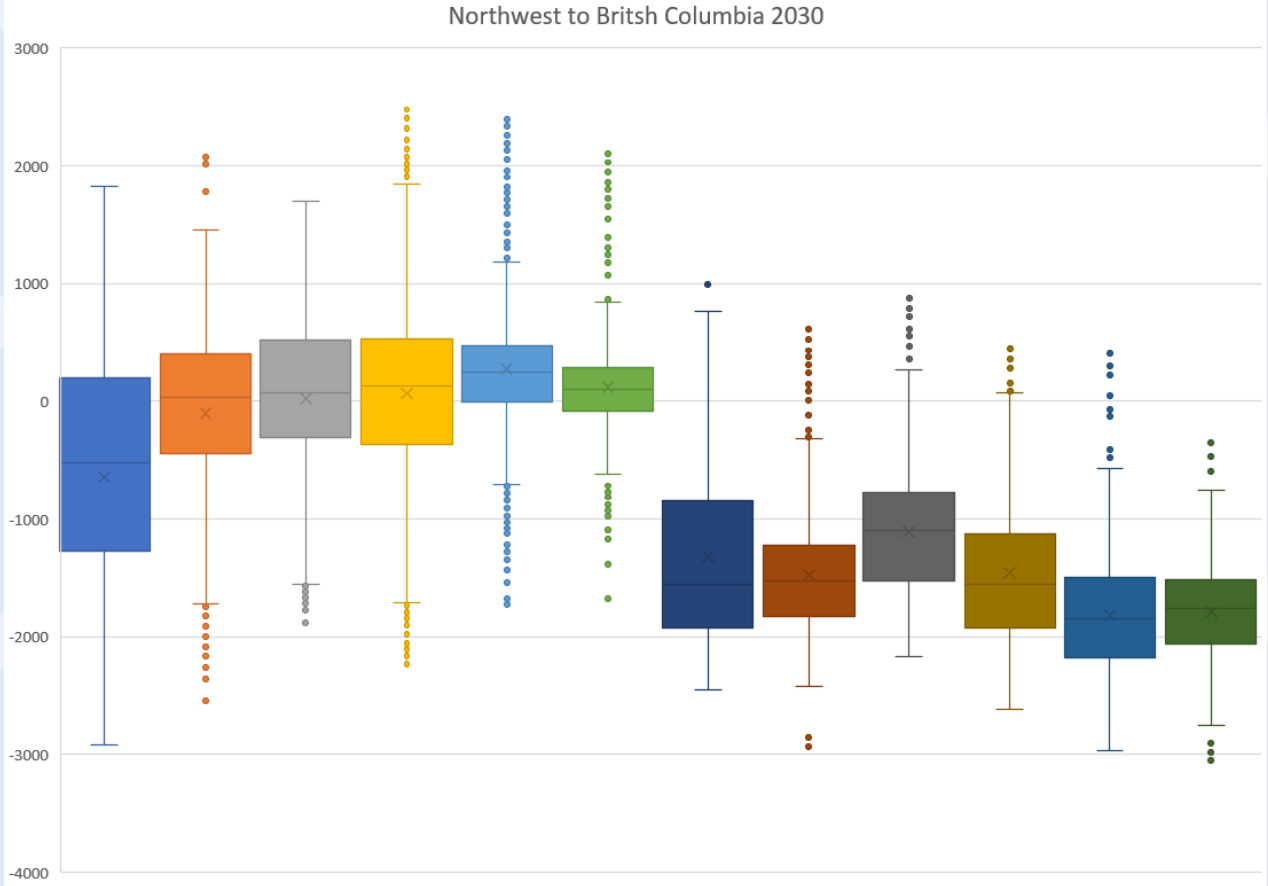
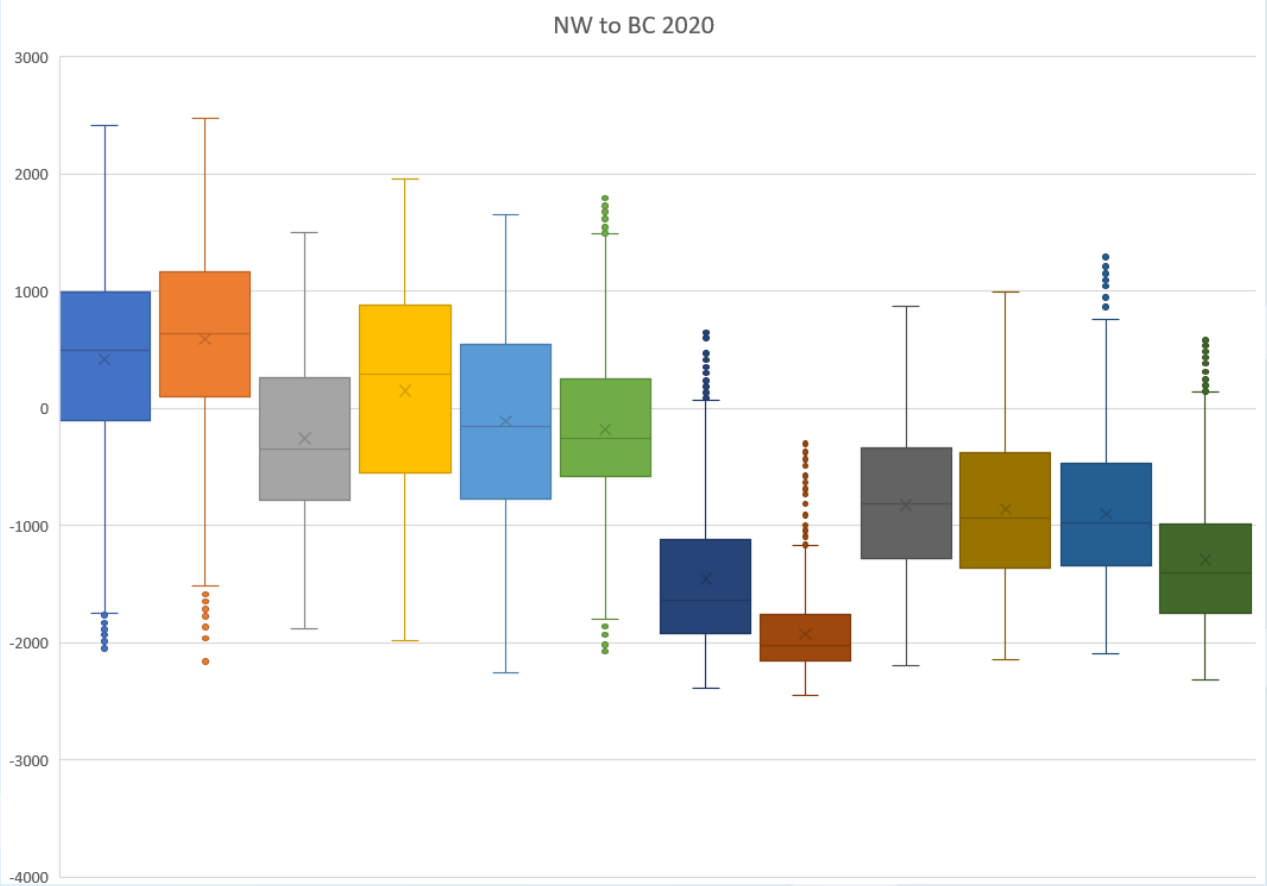


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# Northwest to British Columbia Monthly Transfers

## 2020

## 2030



■ January ■ February ■ March ■ April ■ May ■ June ■ July ■ August ■ September ■ October ■ November ■ December



# NorthernGrid



# Northwest to Montana Daily Transfers

4/19/1998

4/19/2020



# Northwest to Montana Daily Transfers

4/19/2020

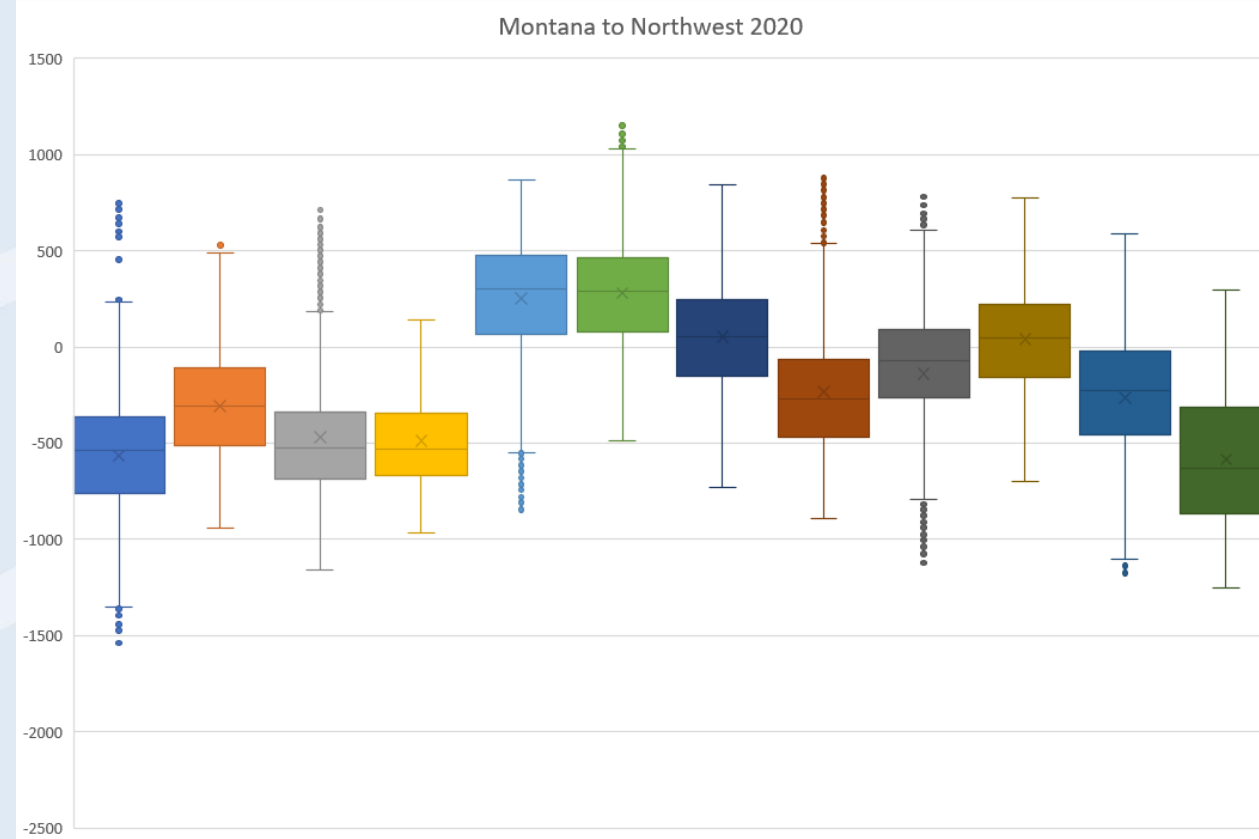
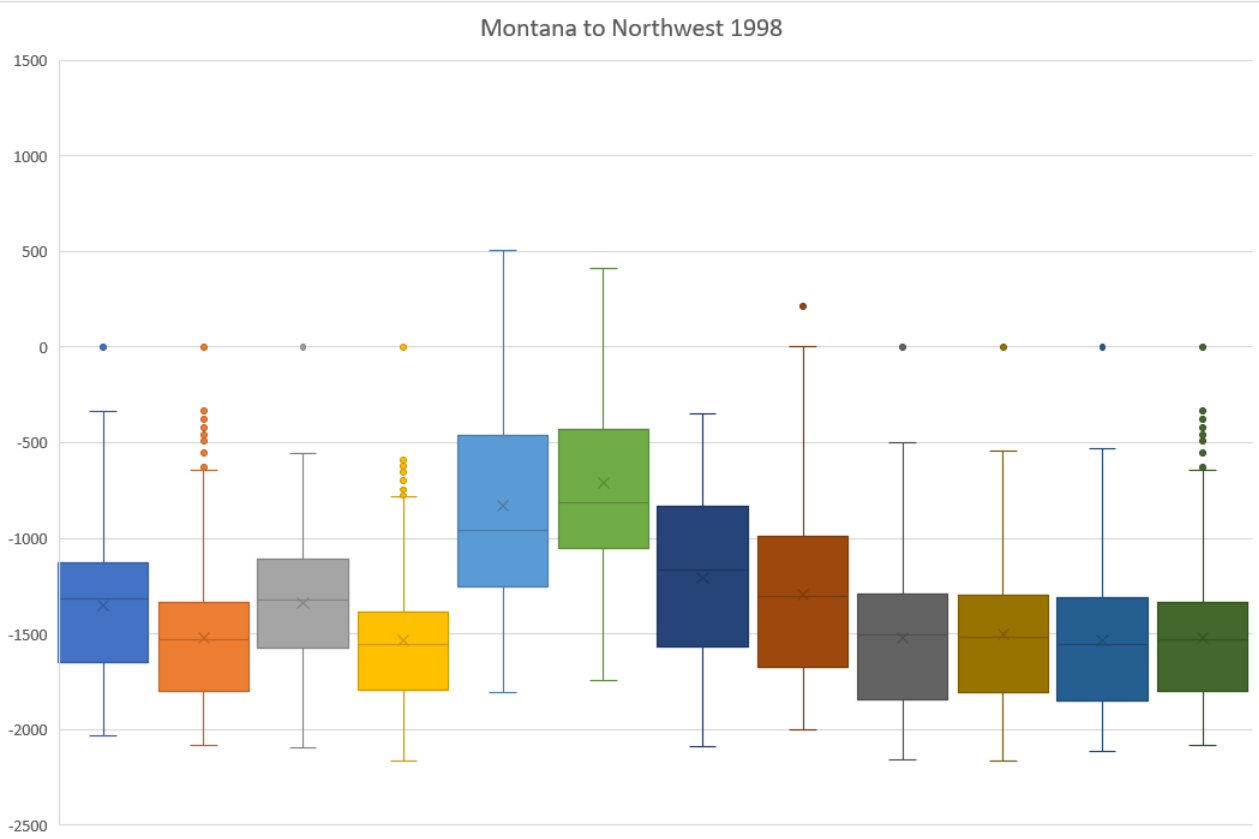
4/19/2030



**NorthernGrid**

# Northwest to Montana Monthly Transfer

**1998** **2020**



■ January ■ February ■ March ■ April ■ May ■ June ■ July ■ August ■ September ■ October ■ November ■ December

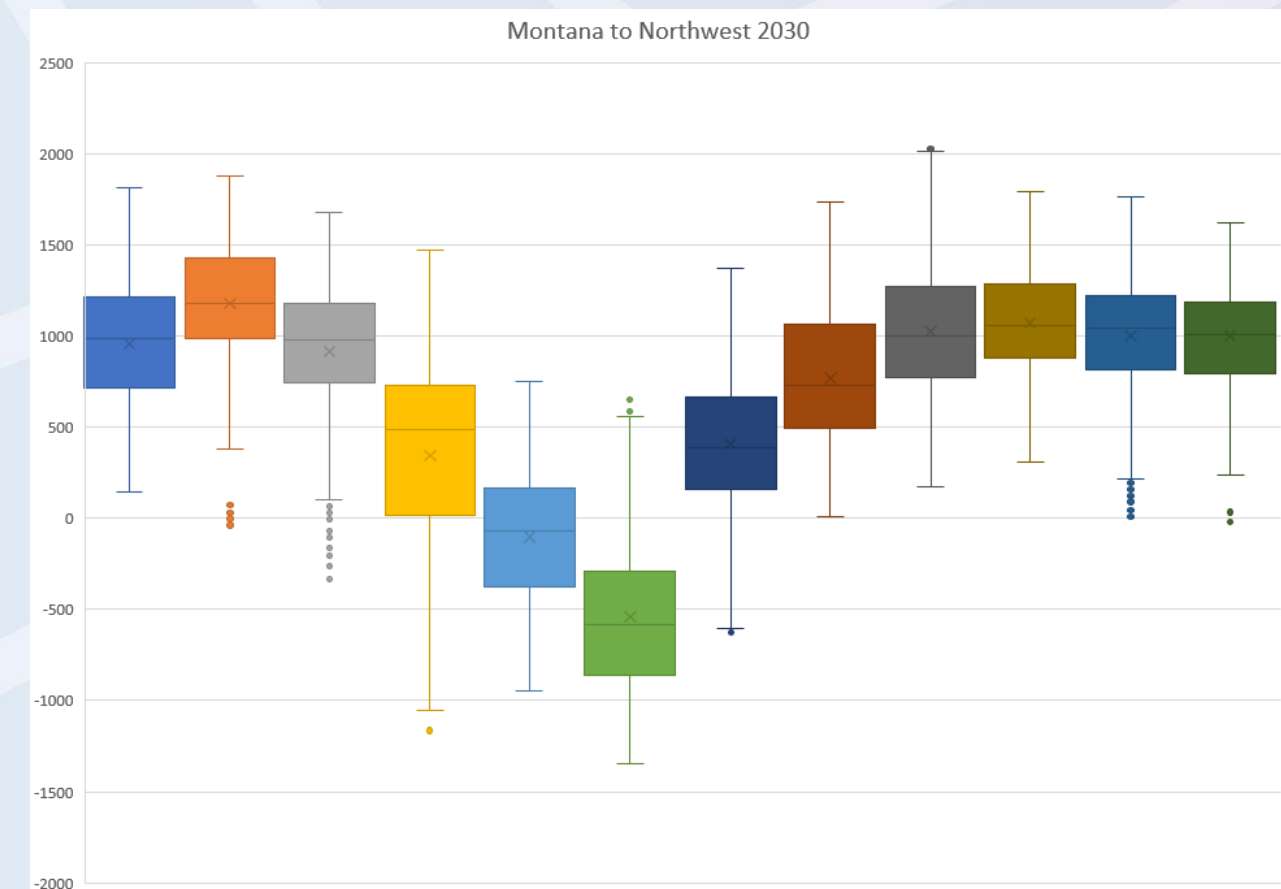
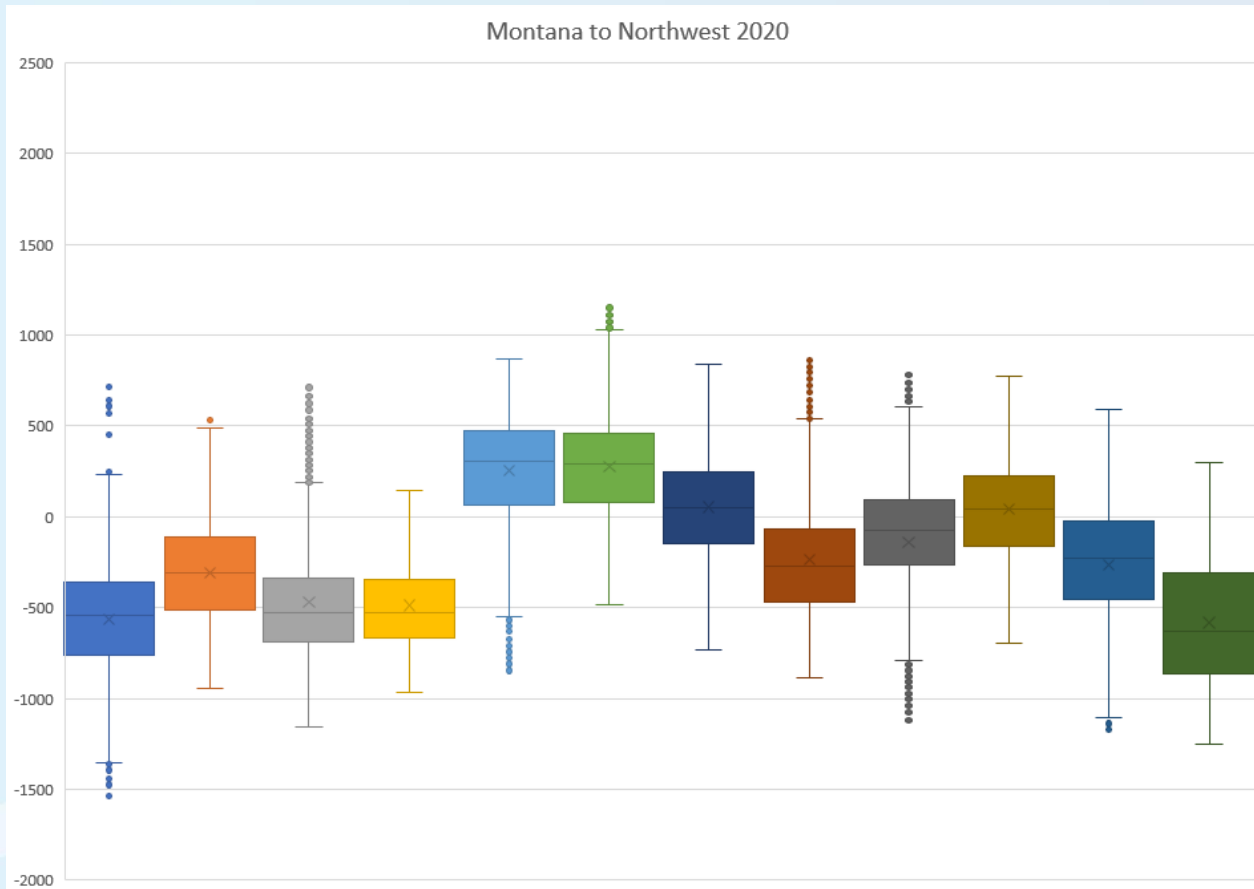


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# Northwest to Montana Monthly Transfer

## 2020

## 2030



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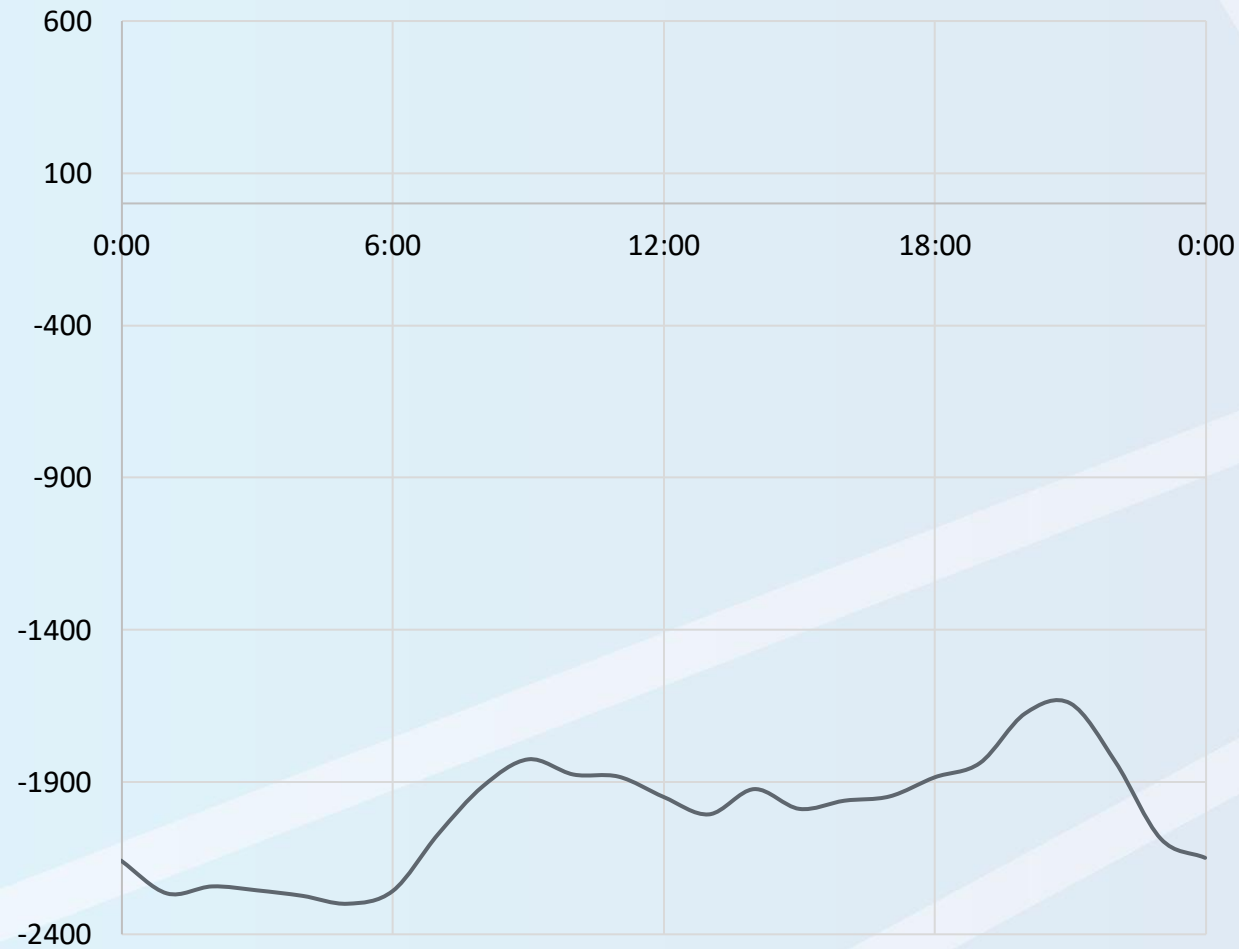


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# Northwest to Idaho Daily Transfers

4/19/1998

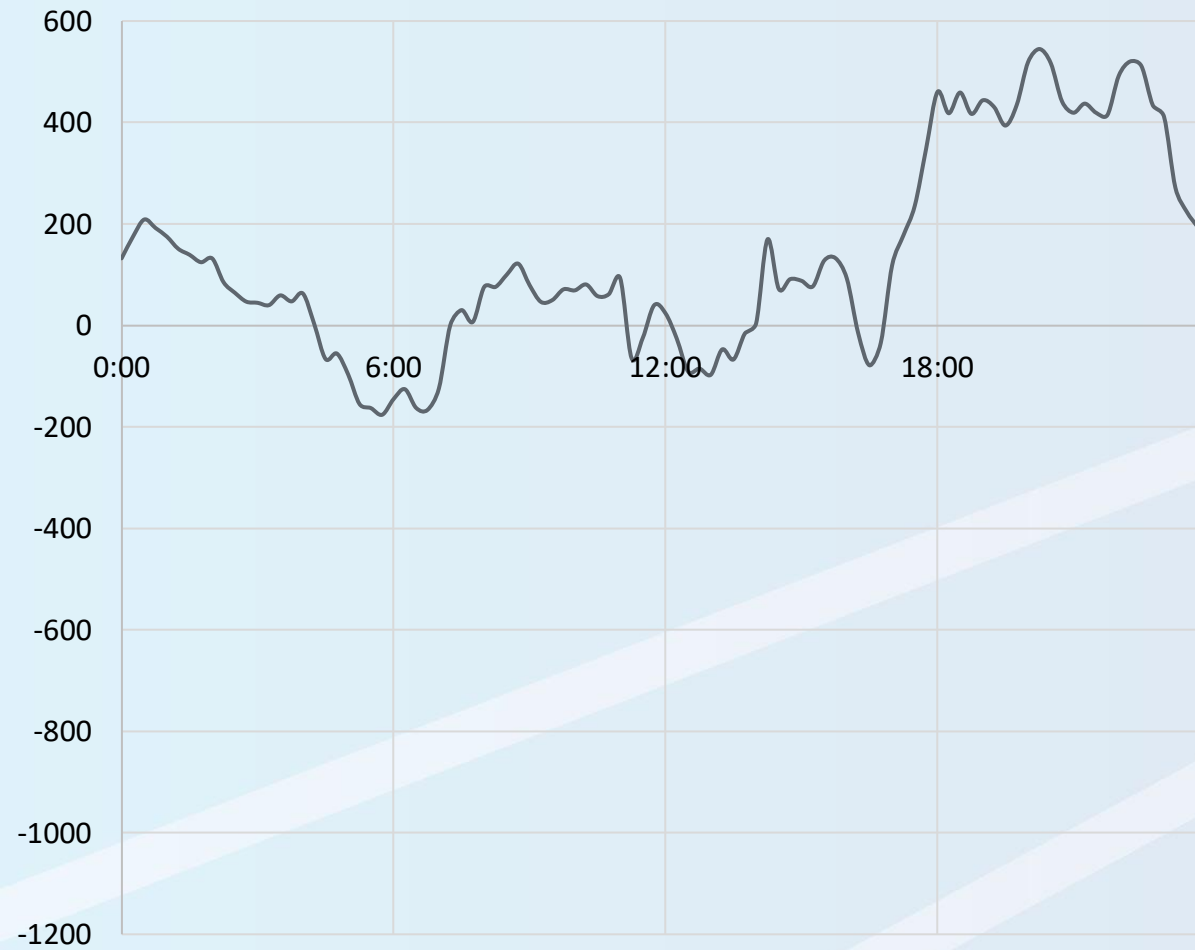
4/19/2020



# Northwest to Idaho Daily Transfers

4/19/2020

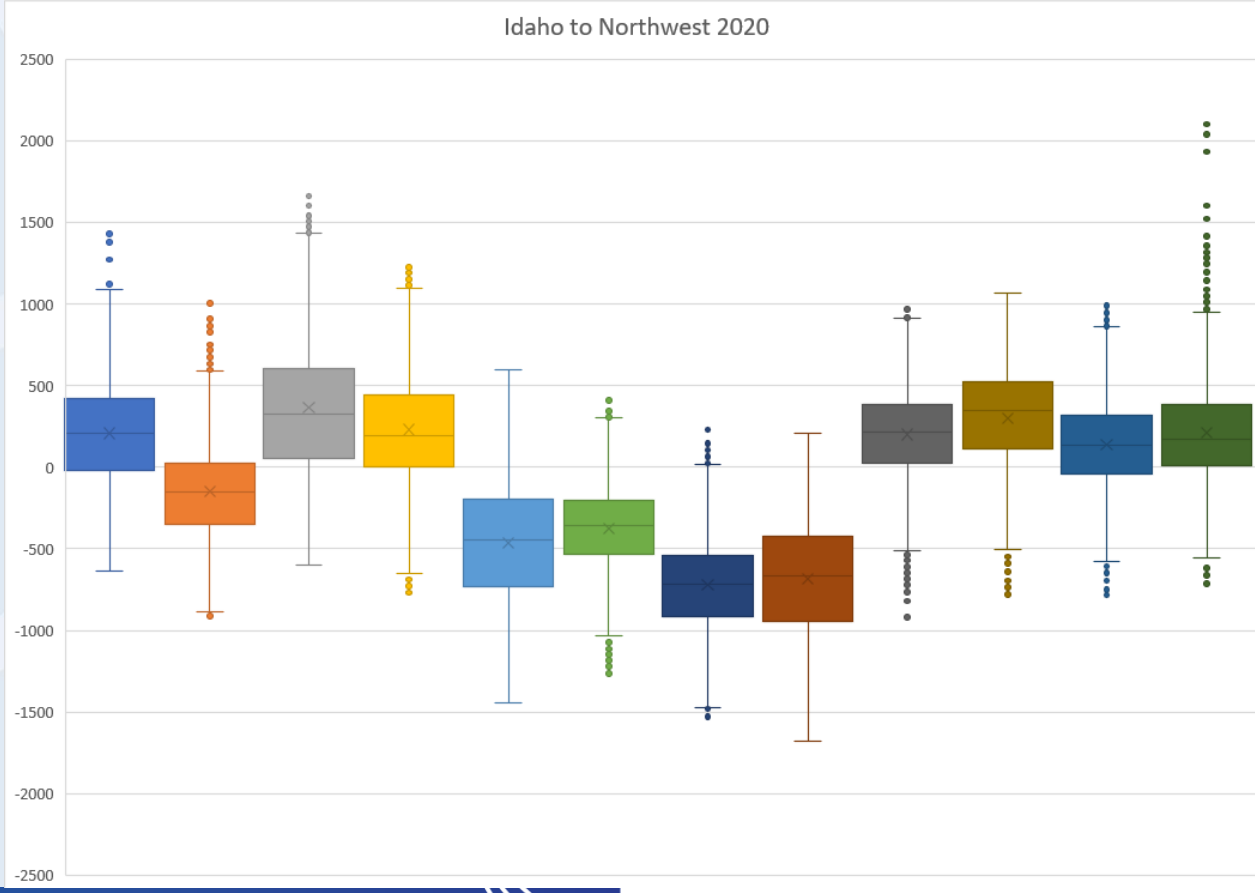
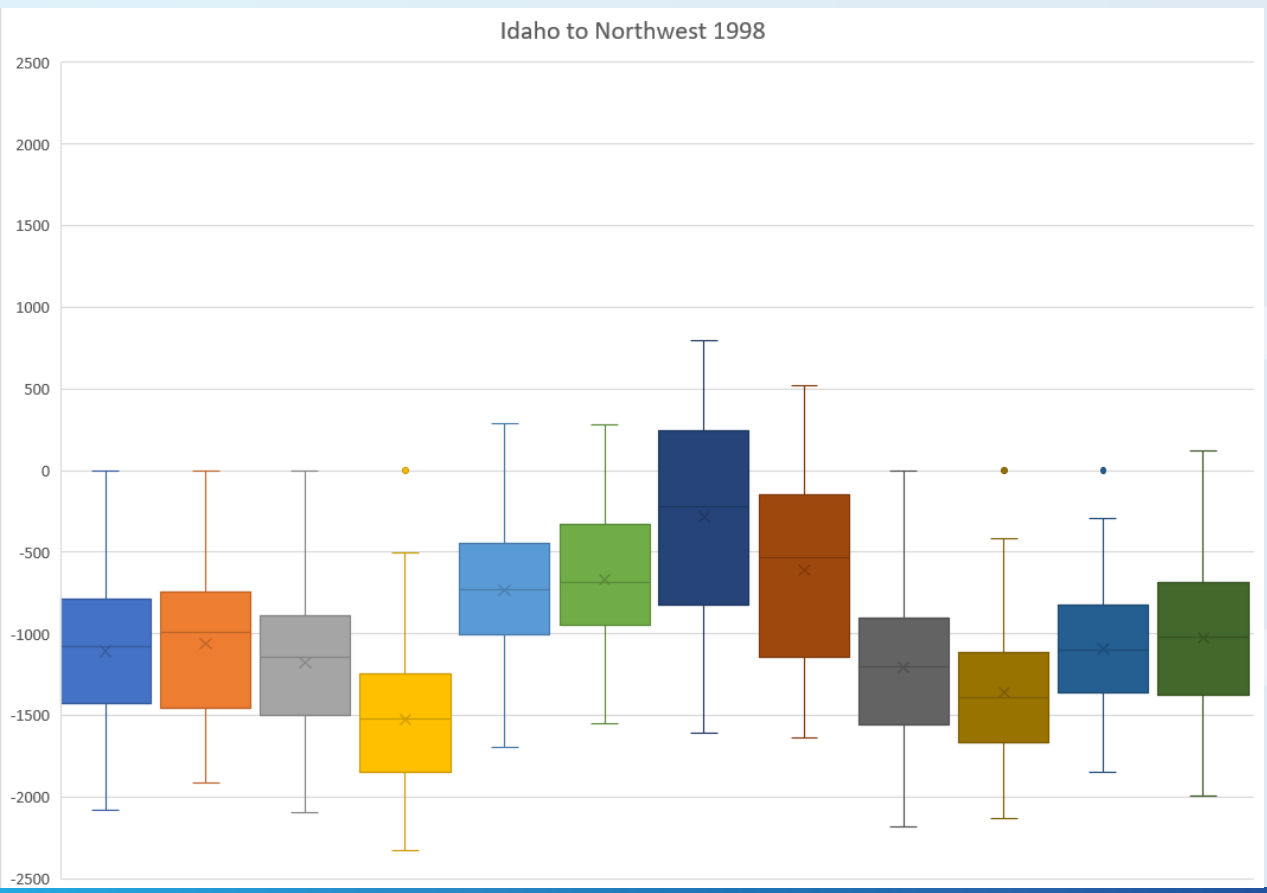
4/19/2030



# Northwest to Idaho Monthly Transfers

## 1998

## 2020



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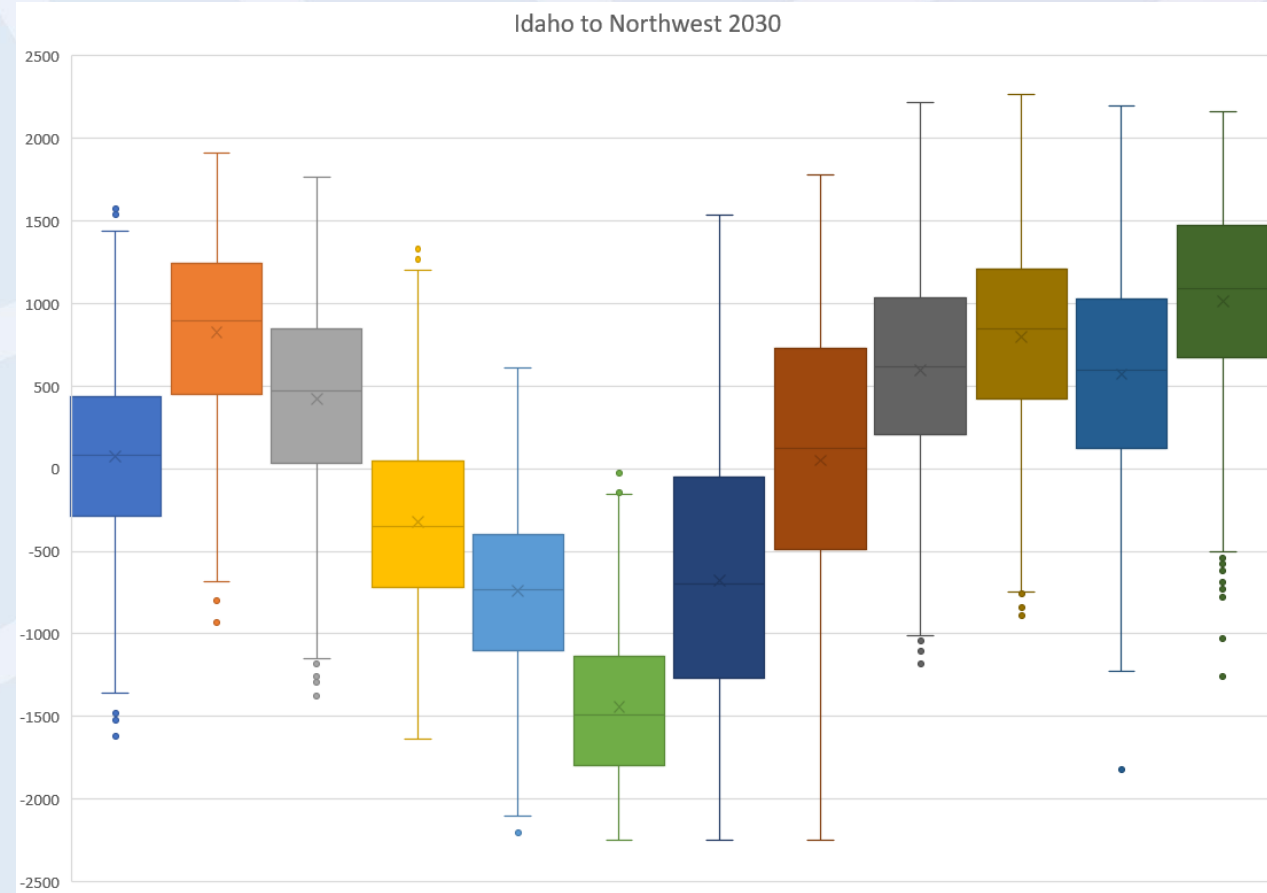
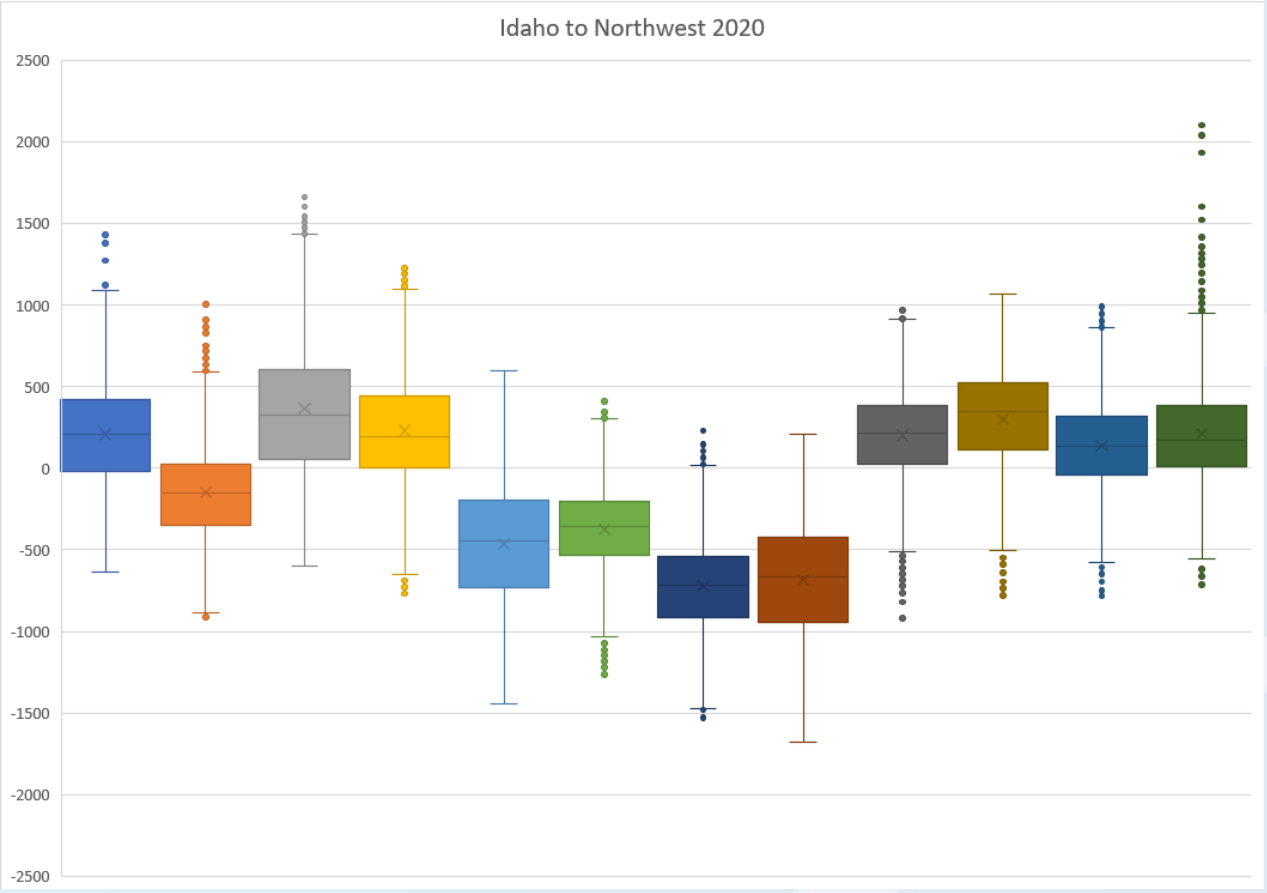


# NorthernGrid

# Northwest to Idaho Monthly Transfers

## 2020

## 2030



■ January ■ February ■ March ■ April ■ May ■ June ■ July ■ August ■ September ■ October ■ November ■ December



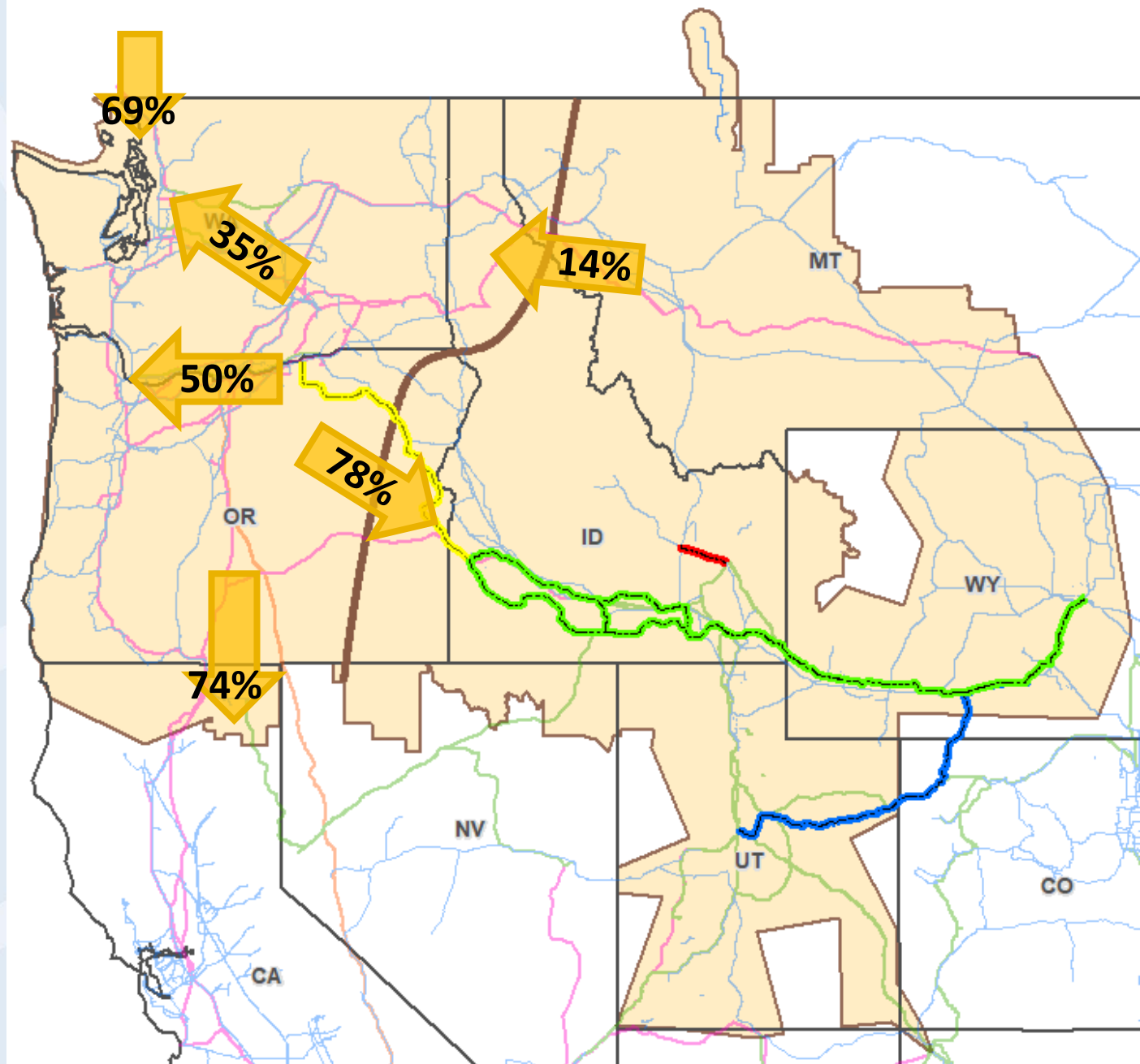
# NorthernGrid



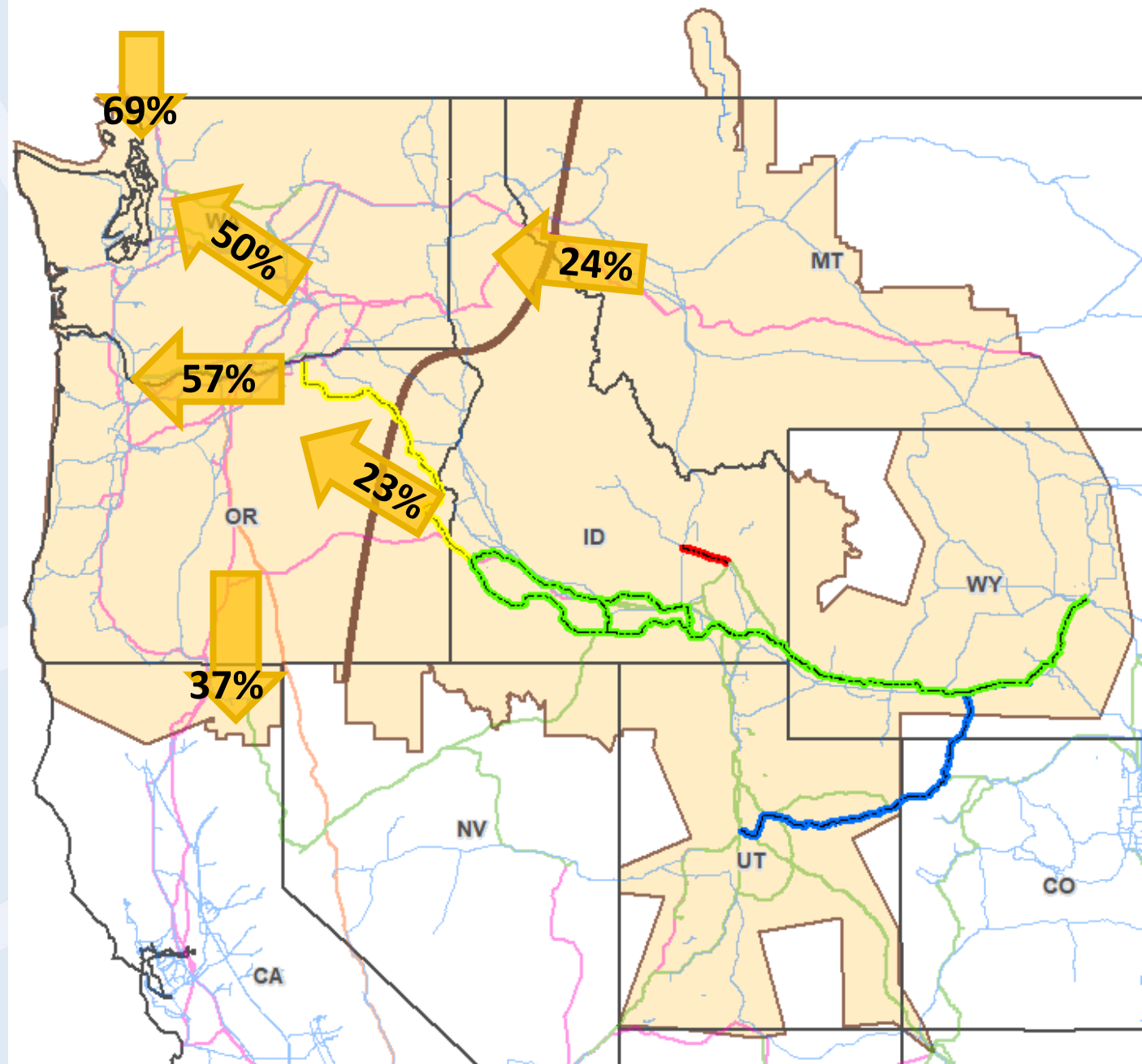
# Unpacking the 2030 Flows for Analysis



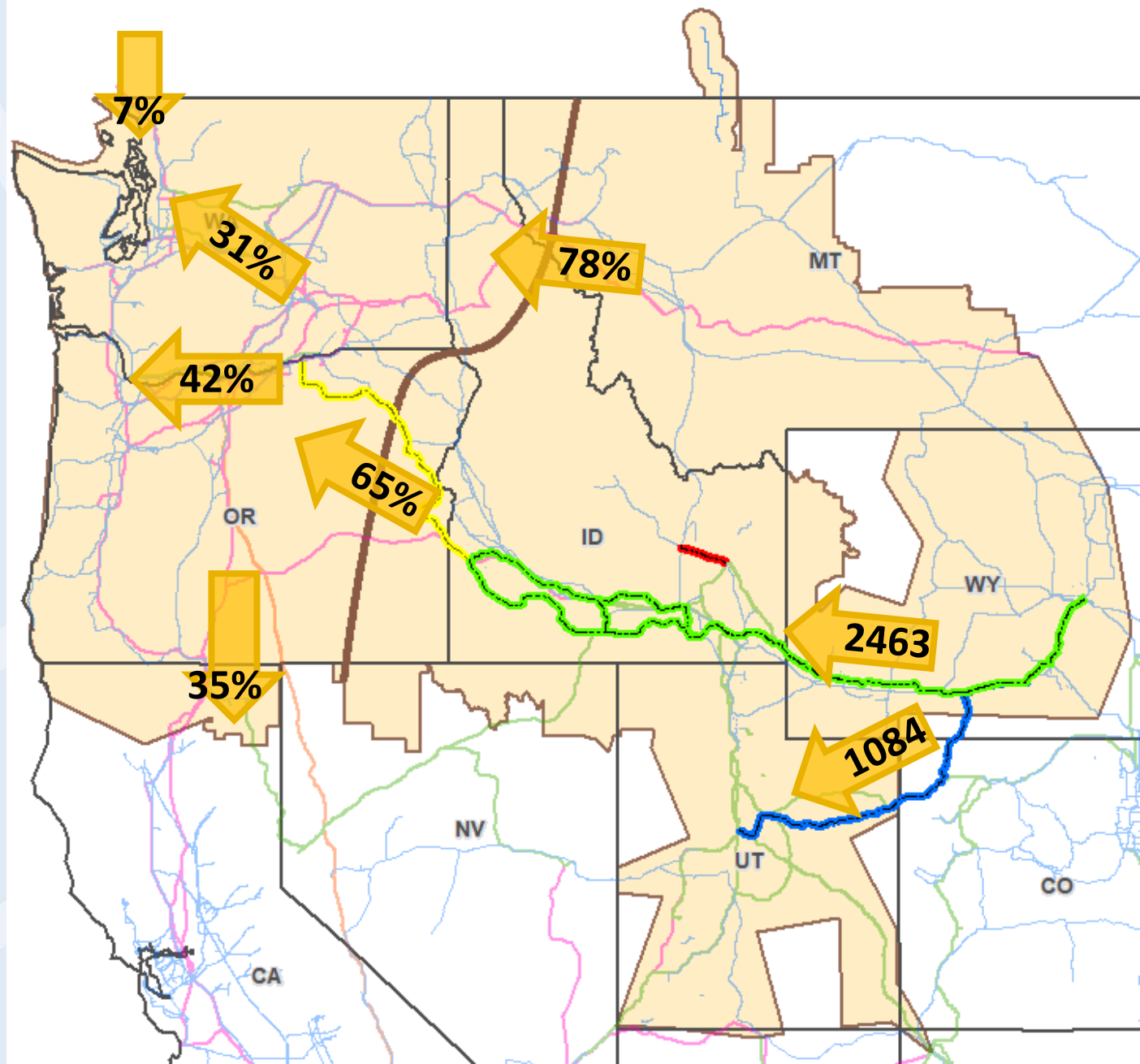
1) Heavy Summer  
Load  
July 30<sup>th</sup>  
Hour ending 16:00



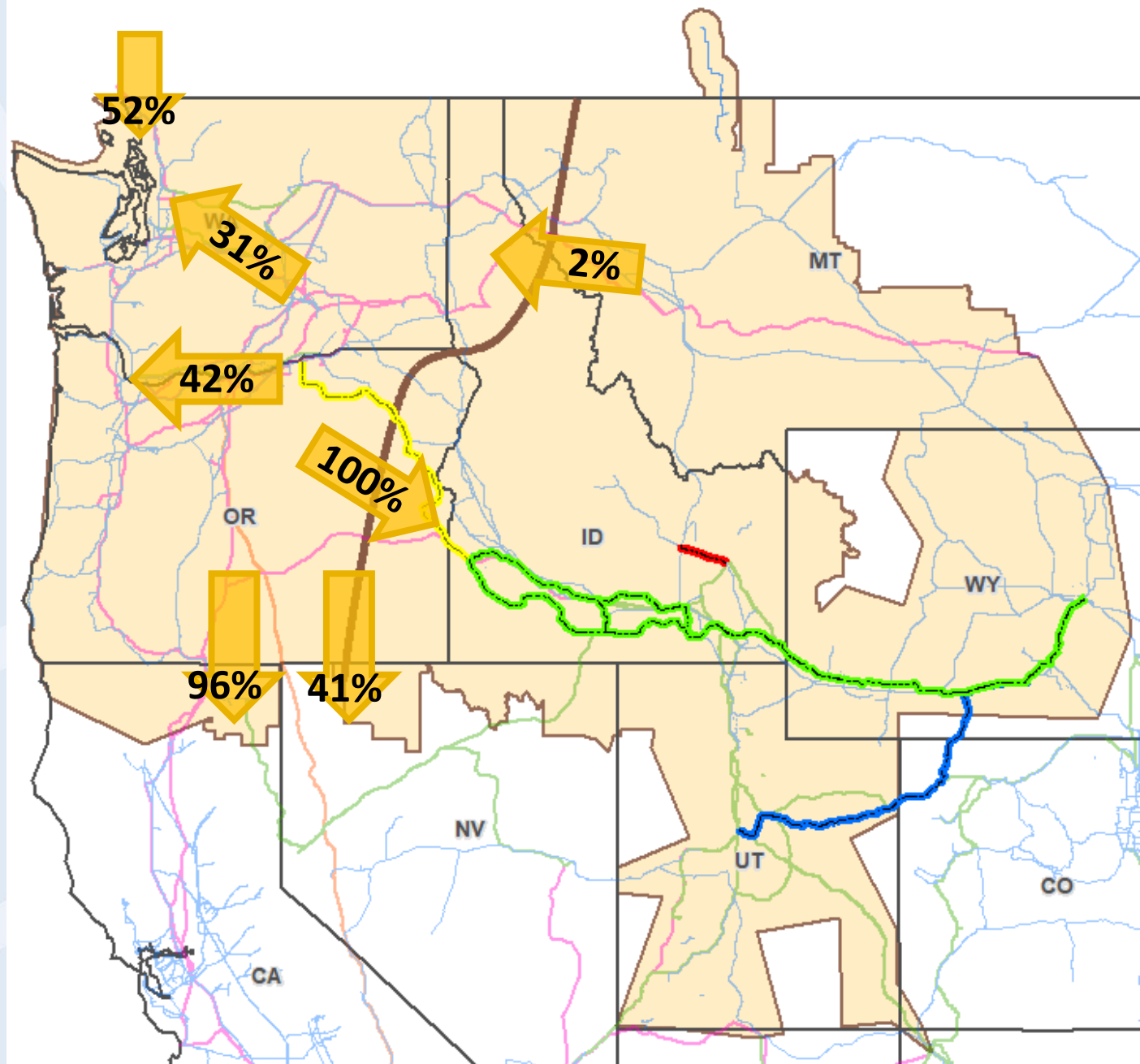
2) Heavy Winter  
Load  
December 19<sup>th</sup>  
Hour ending 12:00



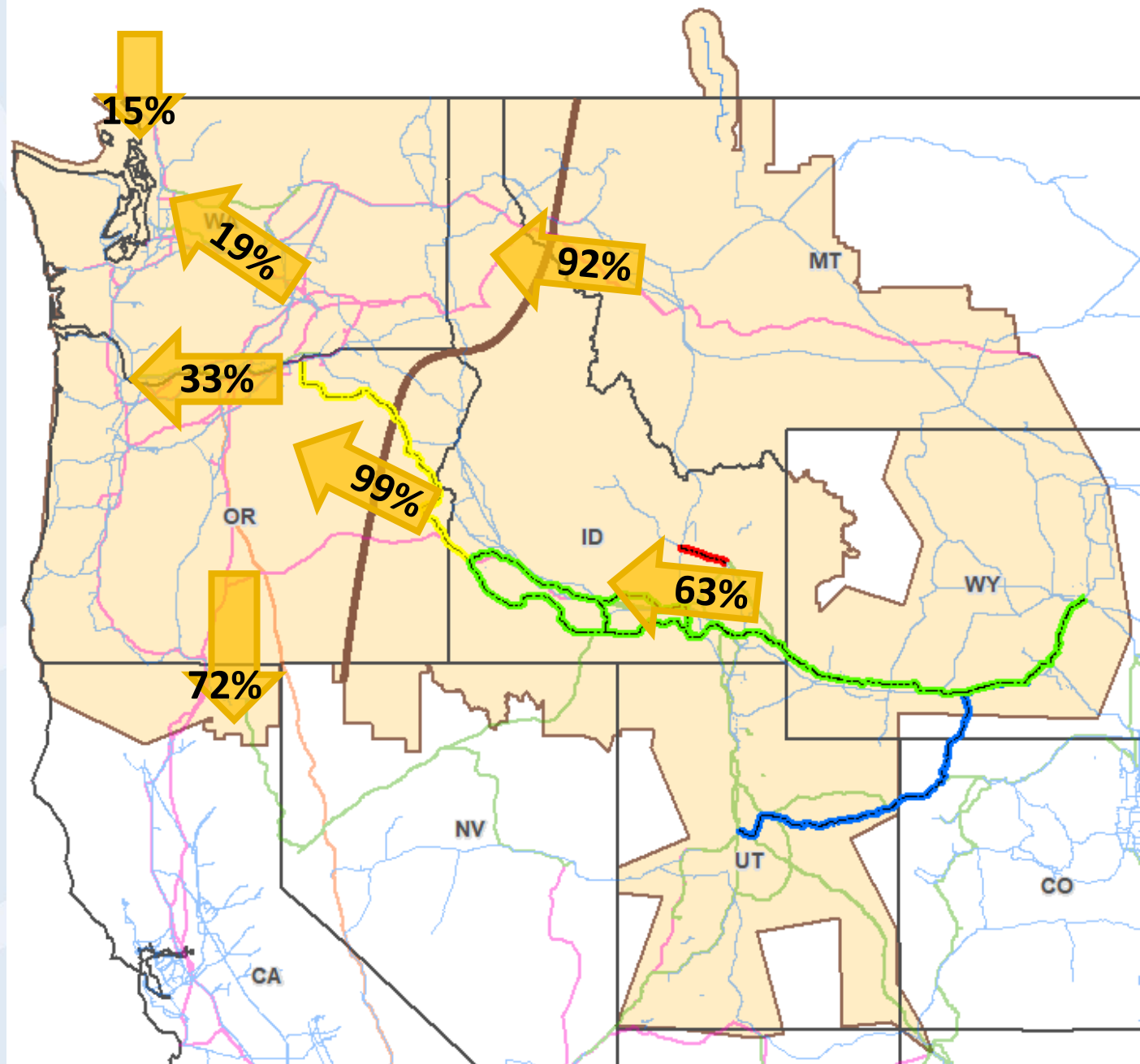
### 3) High Wyoming Wind Generation Output February 1<sup>st</sup> Hour ending 1:00



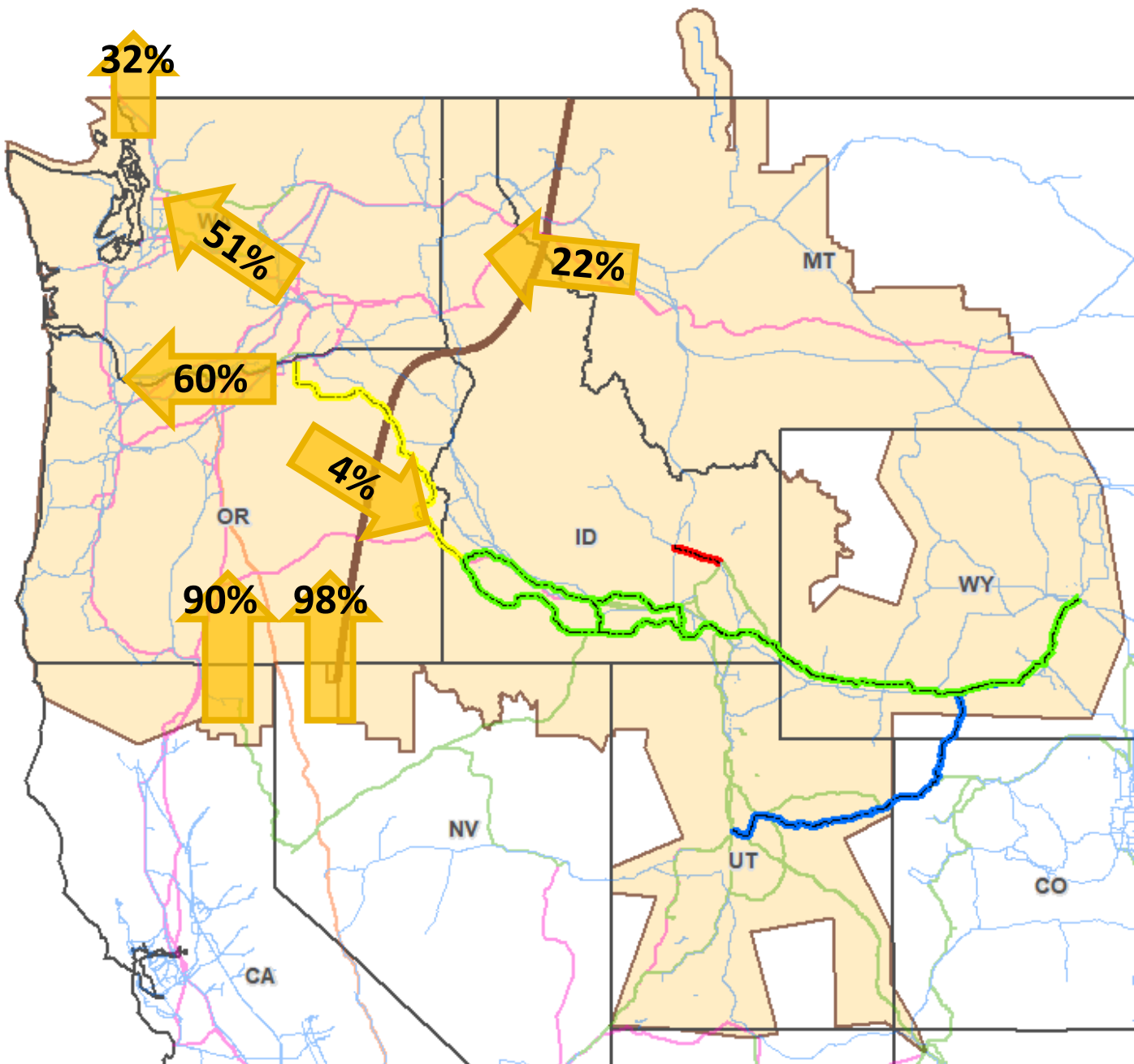
4) High Northwest  
to Idaho Transfer  
July 20th  
Hour ending 17:00



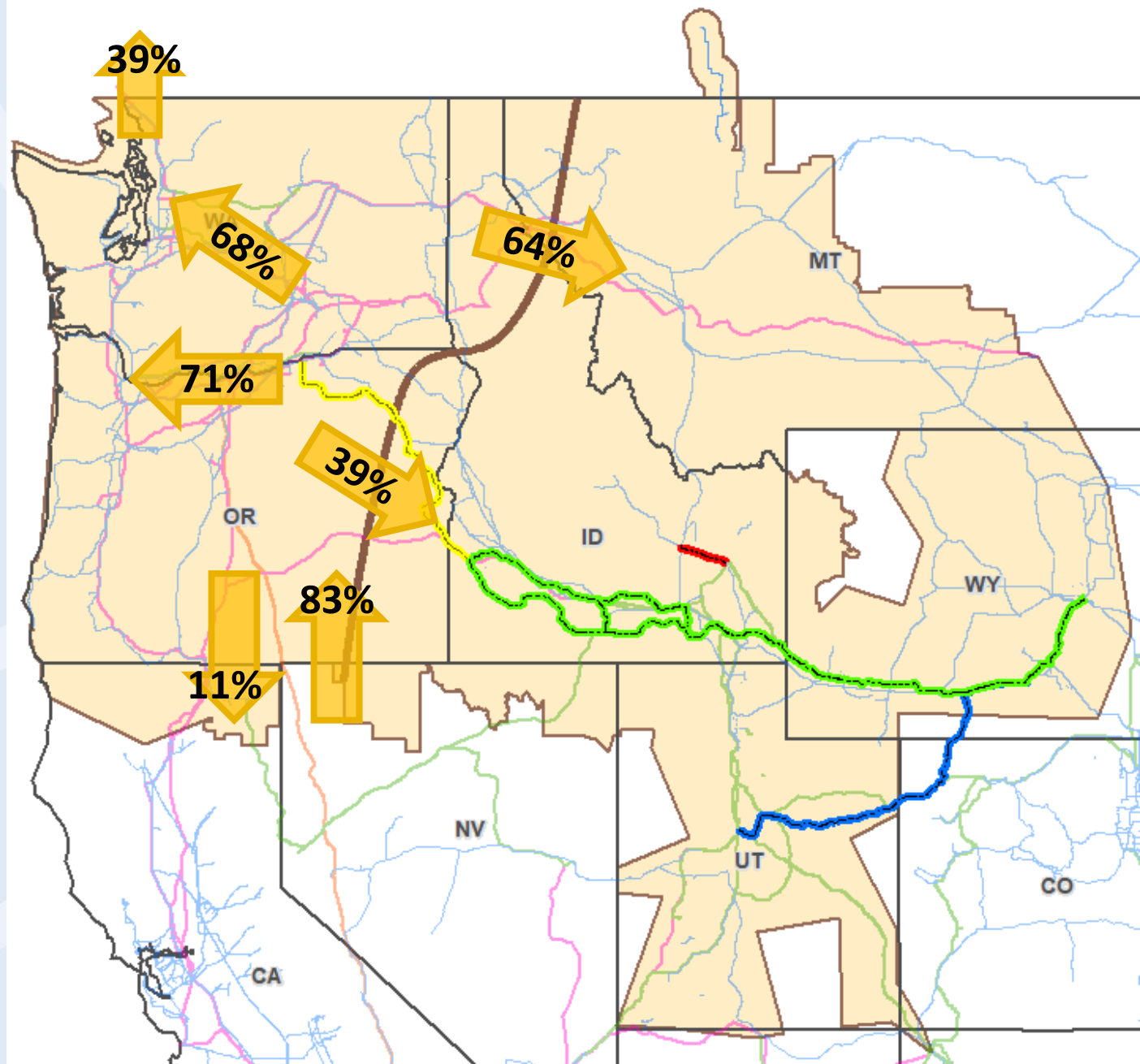
5) High Transfer  
Across Idaho  
September 29<sup>th</sup>  
Hour ending 1:00



6) High California to Northwest Transfer  
March 10<sup>th</sup>  
Hour ending 15:00

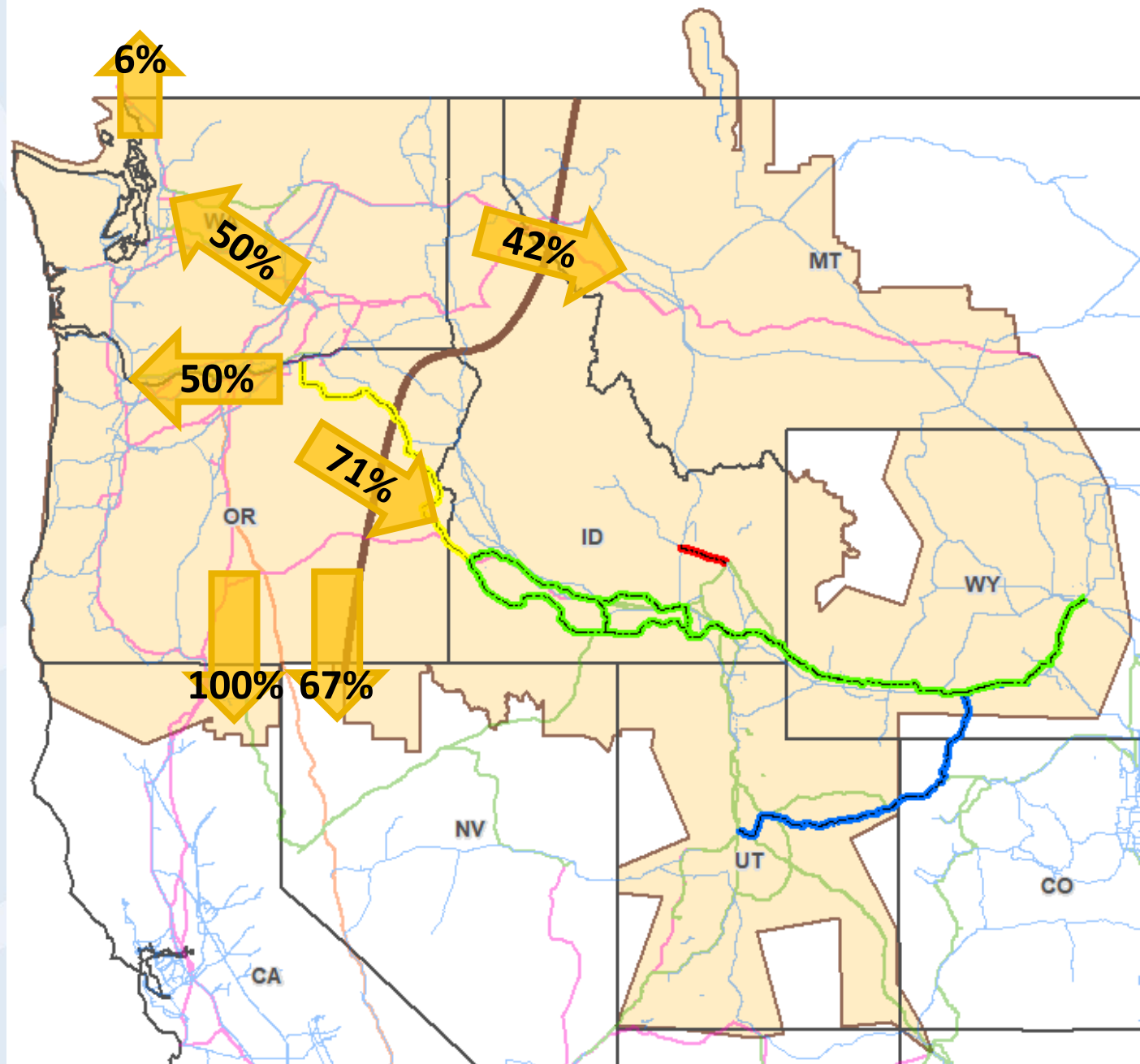


7) High West of Cascades Transfer  
April 3<sup>rd</sup>  
Hour ending 11:00





8) High Northwest  
Hydro  
June 4<sup>th</sup>  
Hour ending 18:00



# Thank you!

Dave Angell

Vice President

Regional Transmission Activities

[dave.angell@nwpp.org](mailto:dave.angell@nwpp.org)

