Lahontan Basin Area Office Water Supply Outlook

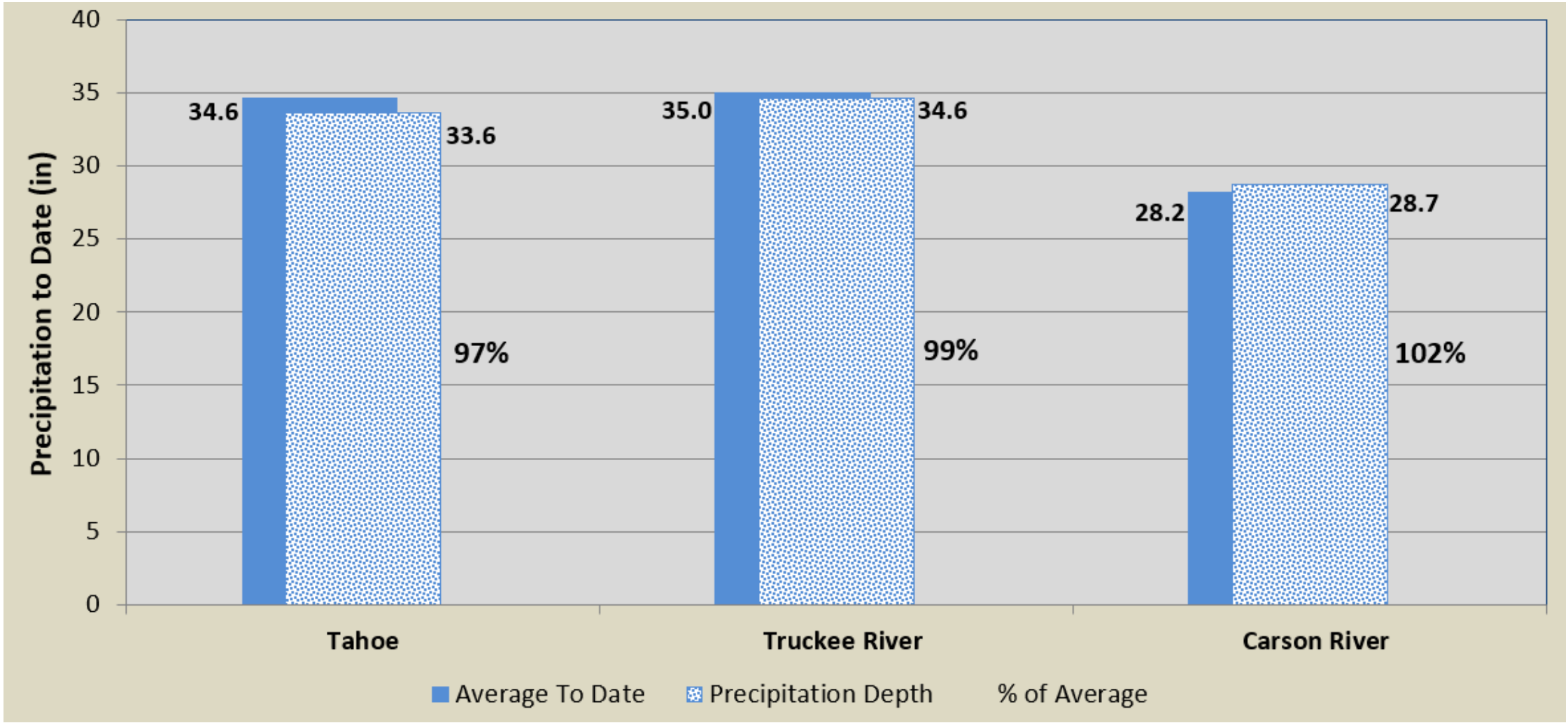
April 11, 2024

Katie Clancey
Special Studies Division
Lahontan Basin Area Office

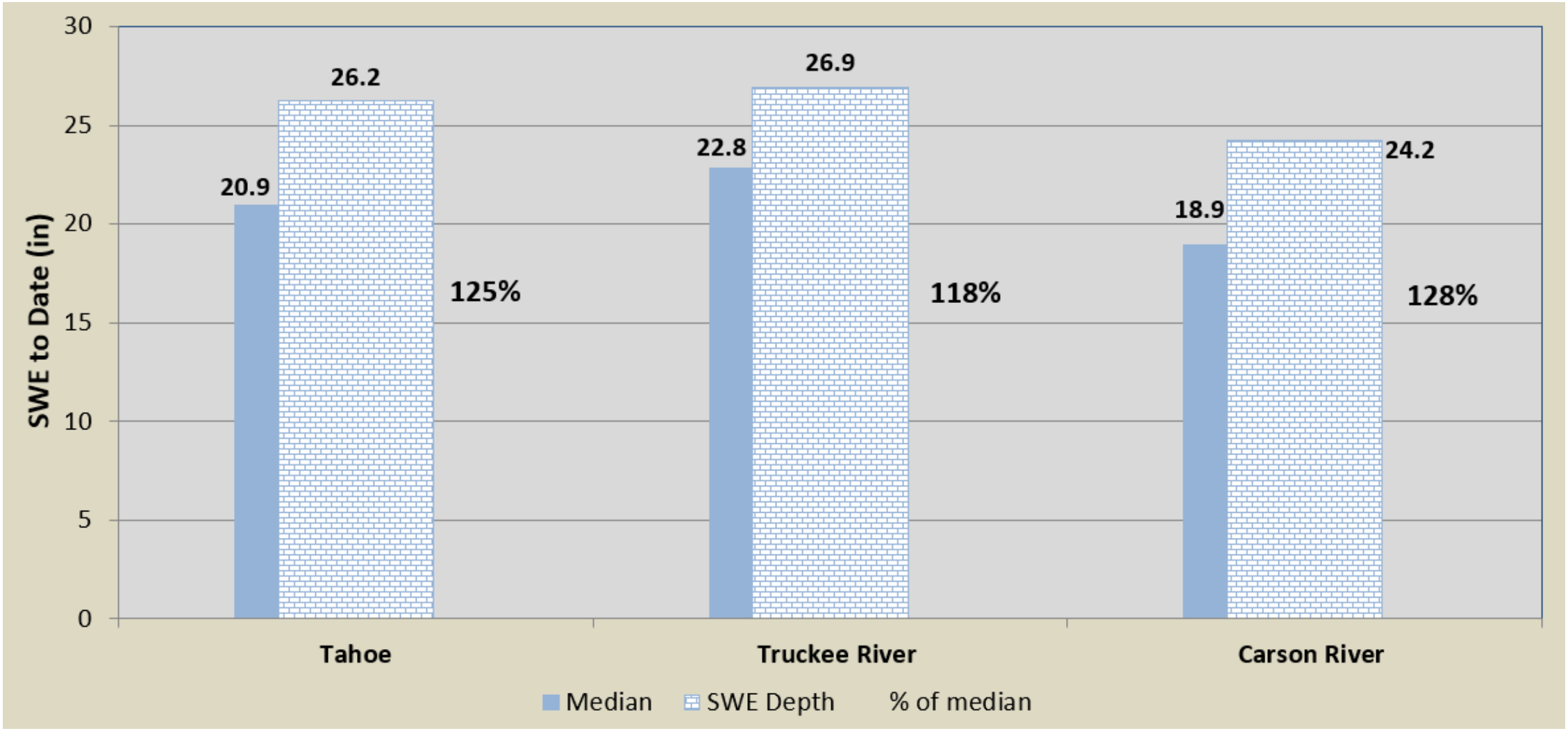
WY 2024 Outlook

- Current Data
- Forecasted Flows Using NRCS Forecasts
- Forecasted Lahontan Storage
- Airborne Snow Observatory Data
- Projected Operations

Current WY Precipitation To Date

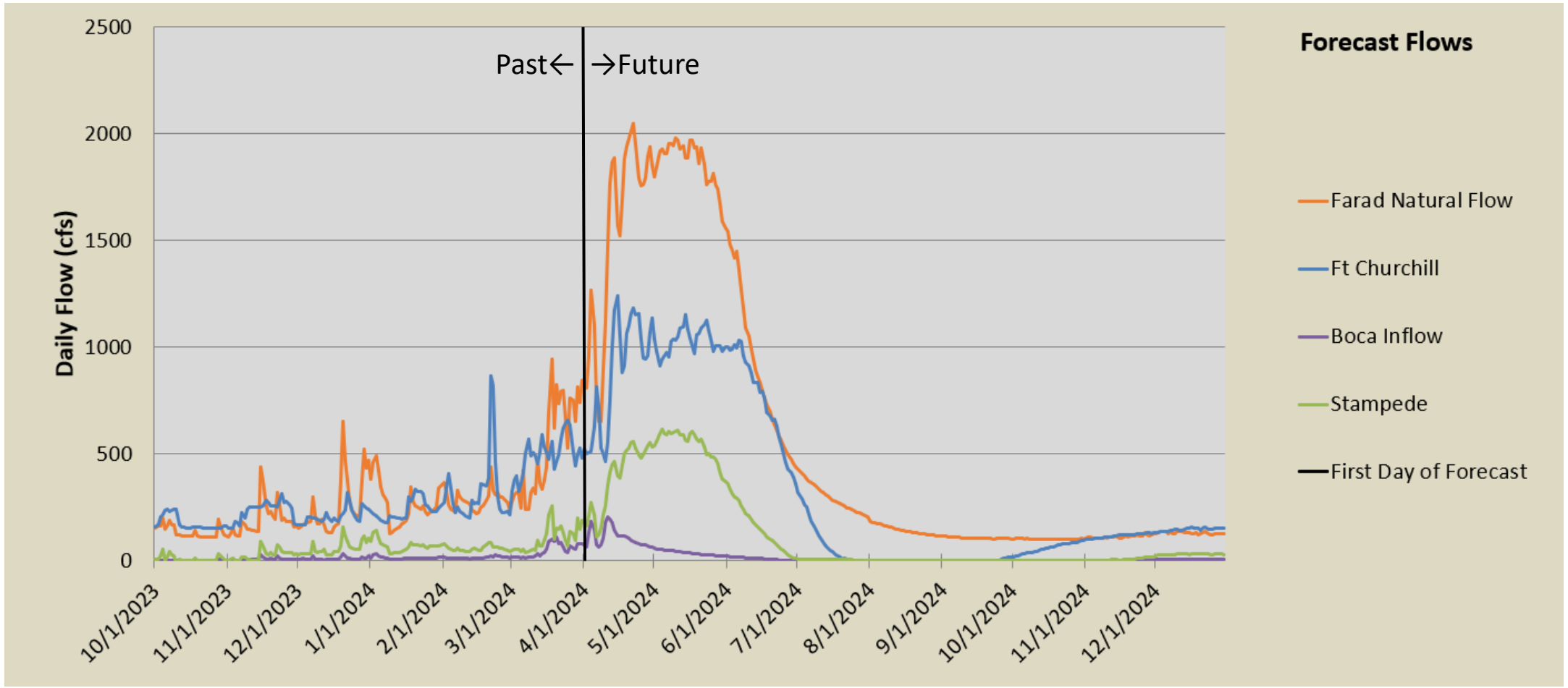


Current Snowpack

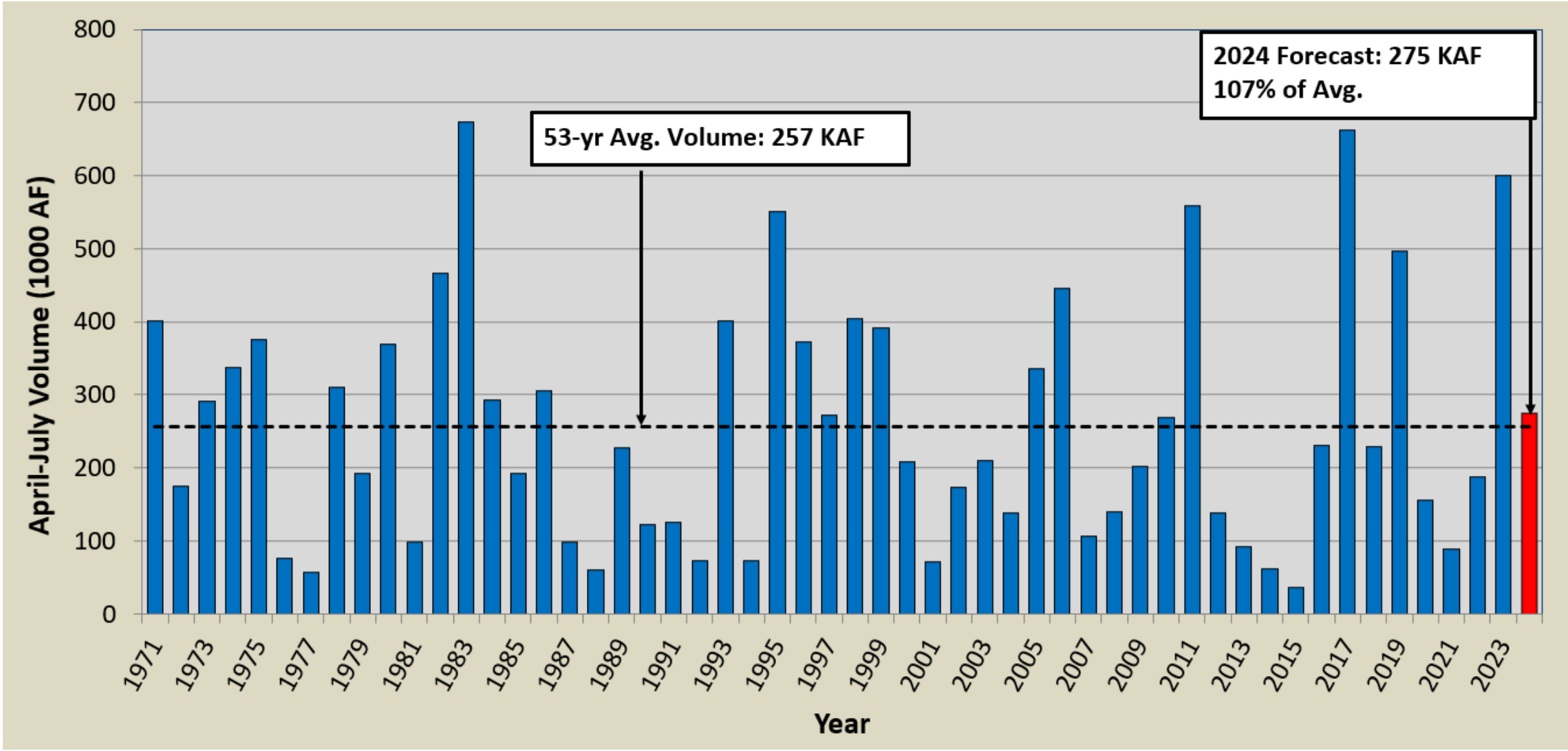


WY 2024 April 1 NRCS Forecast - Hydrograph

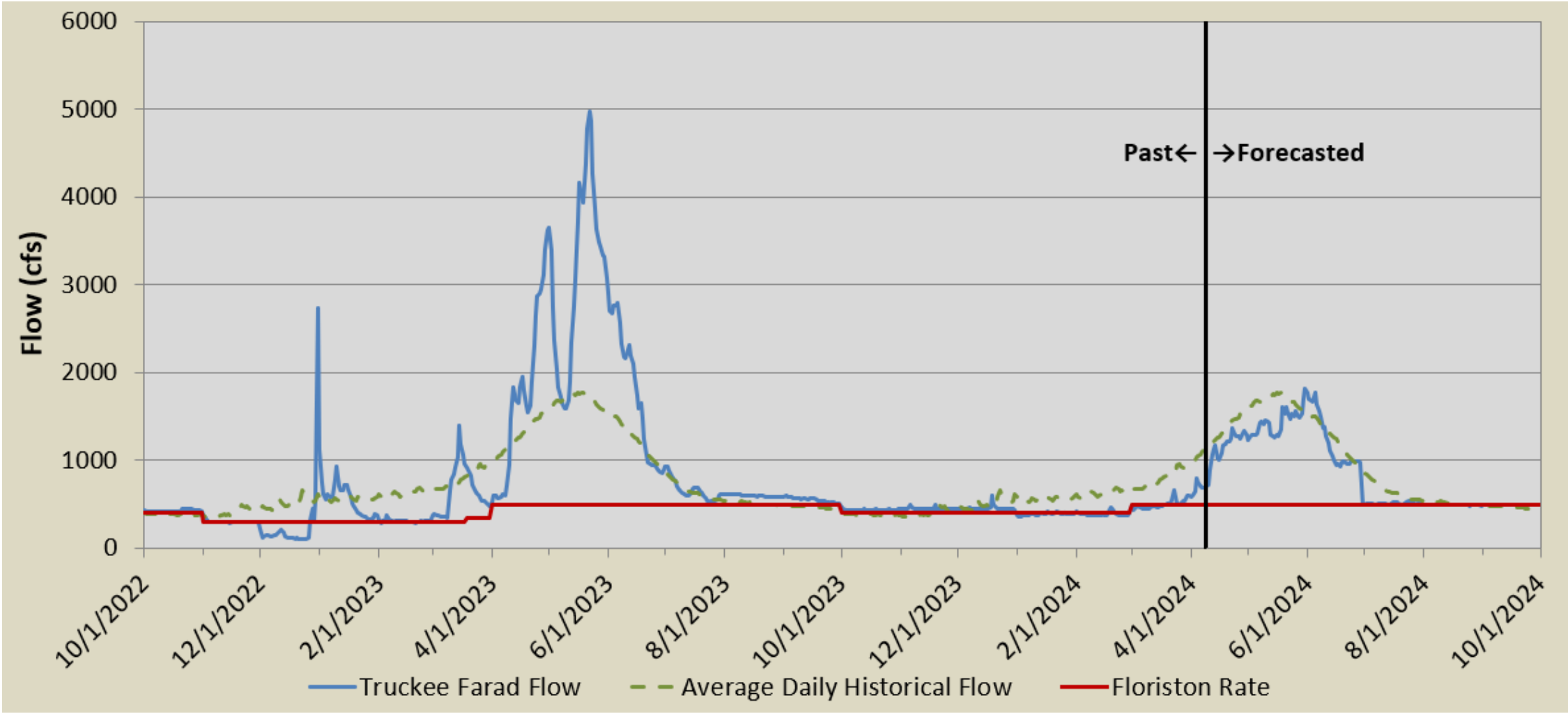
	Farad AJ Vol (KAF)	Carson AJ Vol (KAF)	Tahoe Gate Closed Rise (ft.)
30% (W)	295	195	1.65
50% (M)	**275**	**165**	**1.40**
70% (D)	255	150	1.20



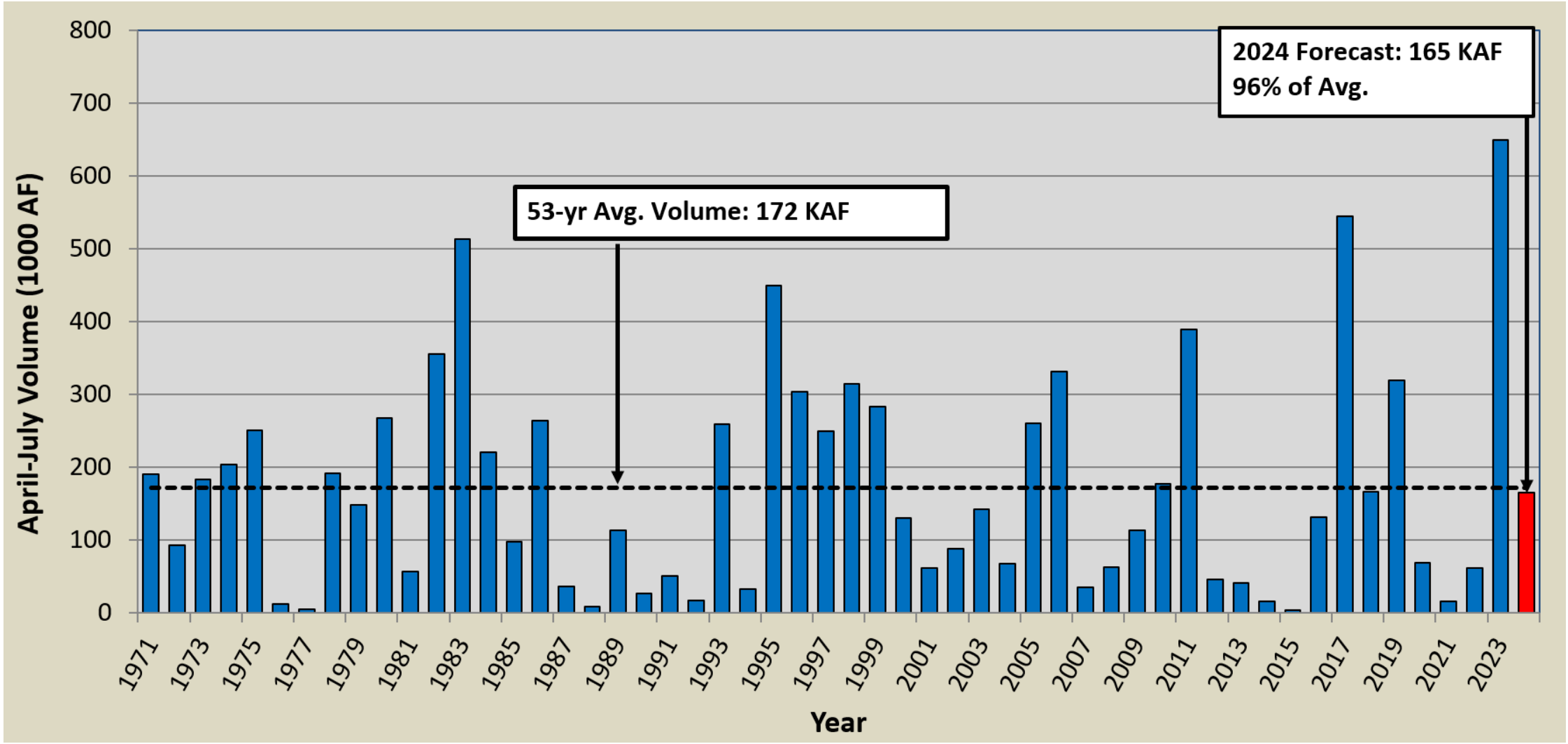
Historical & Forecasted A-J Runoff – Farad



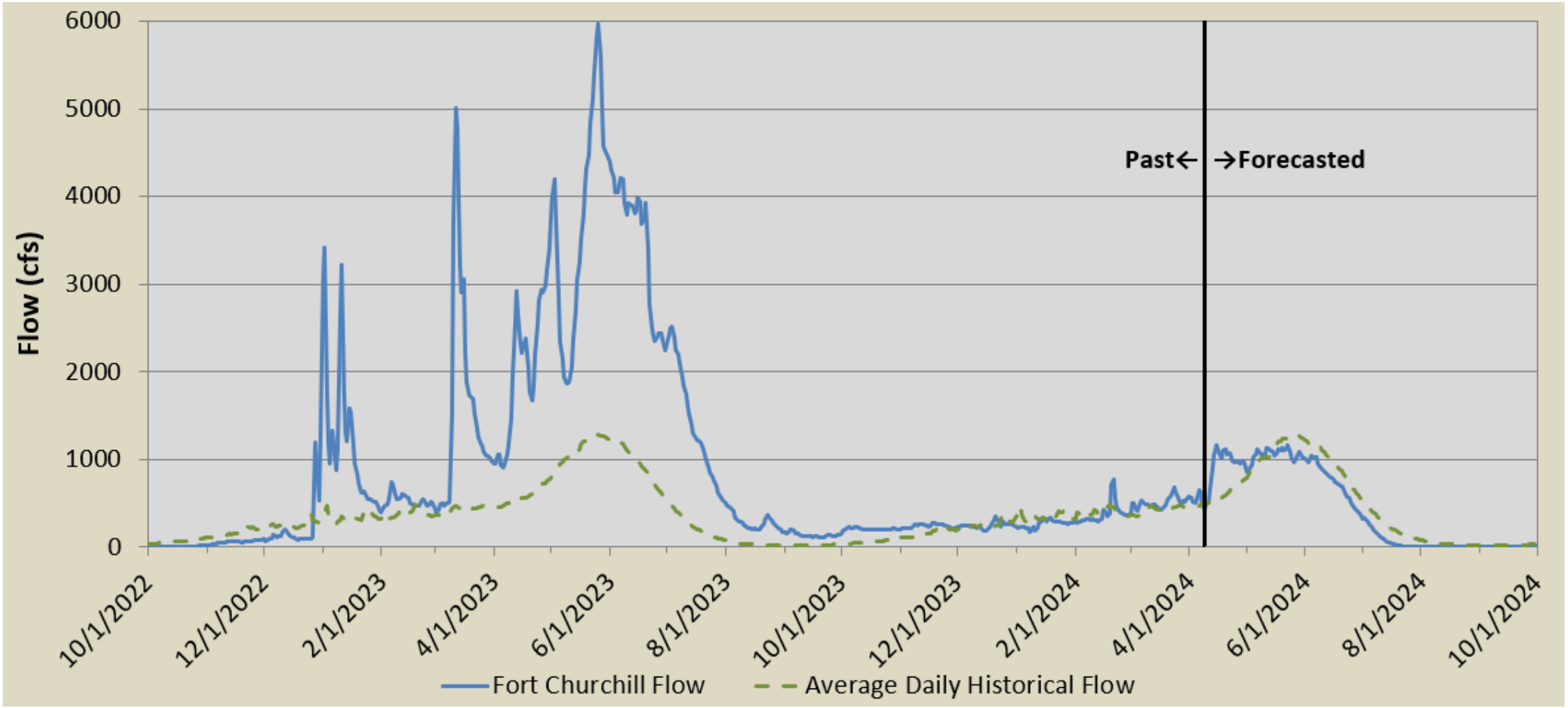
Average, Historic & Forecasted Farad Flow



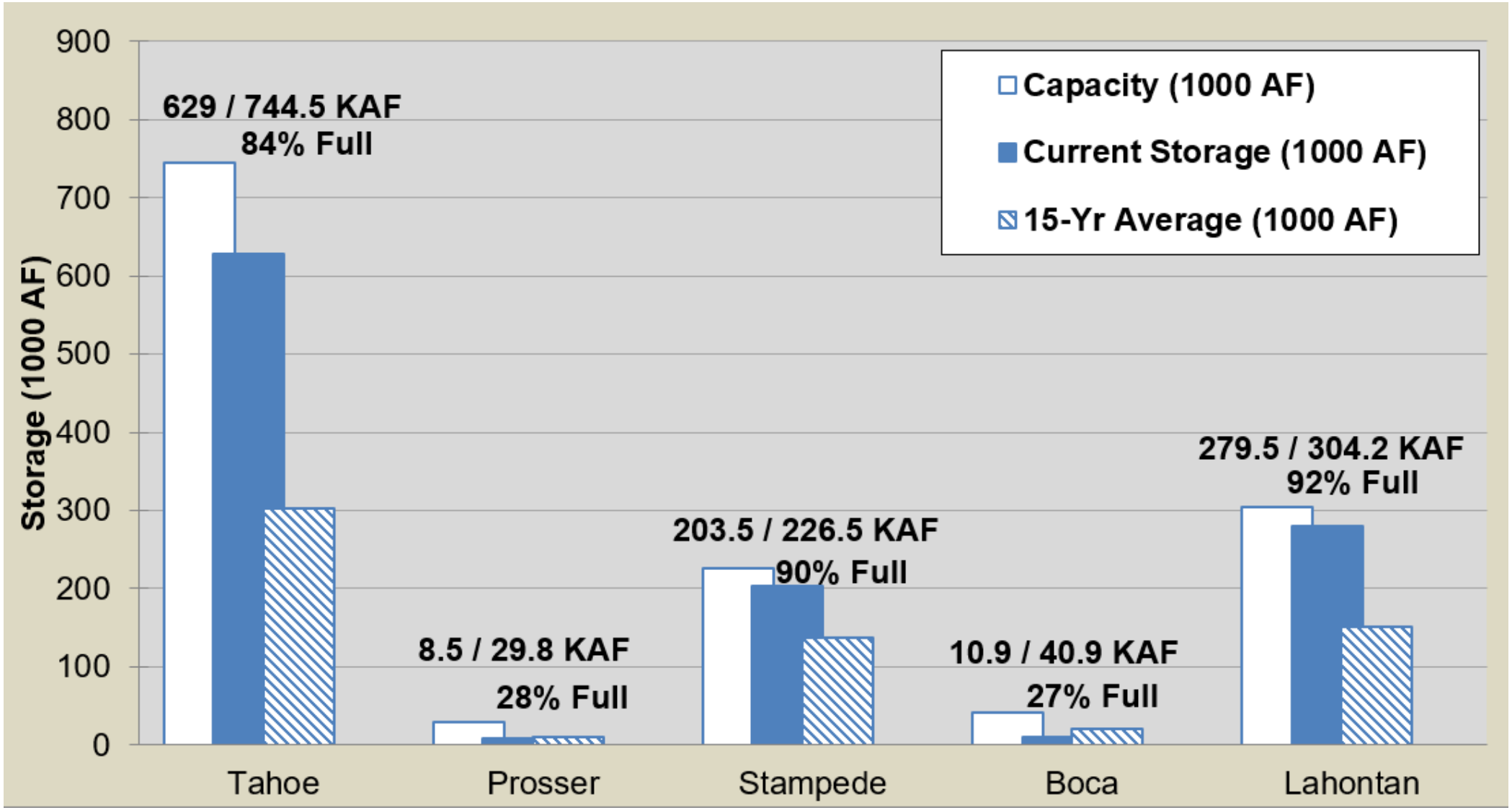
Historical & Forecasted A-J Runoff–Ft Churchill



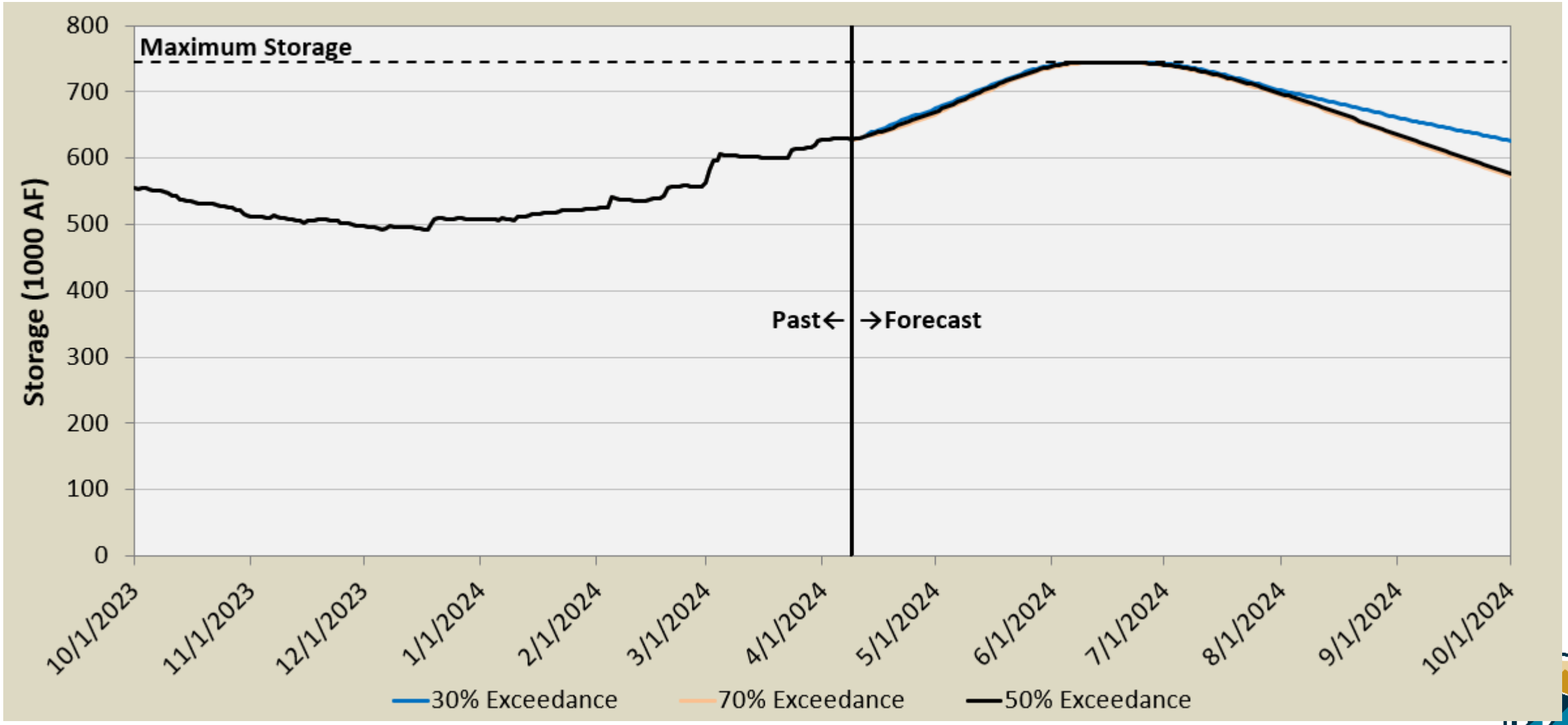
Average & Forecasted Ft. Churchill Flow



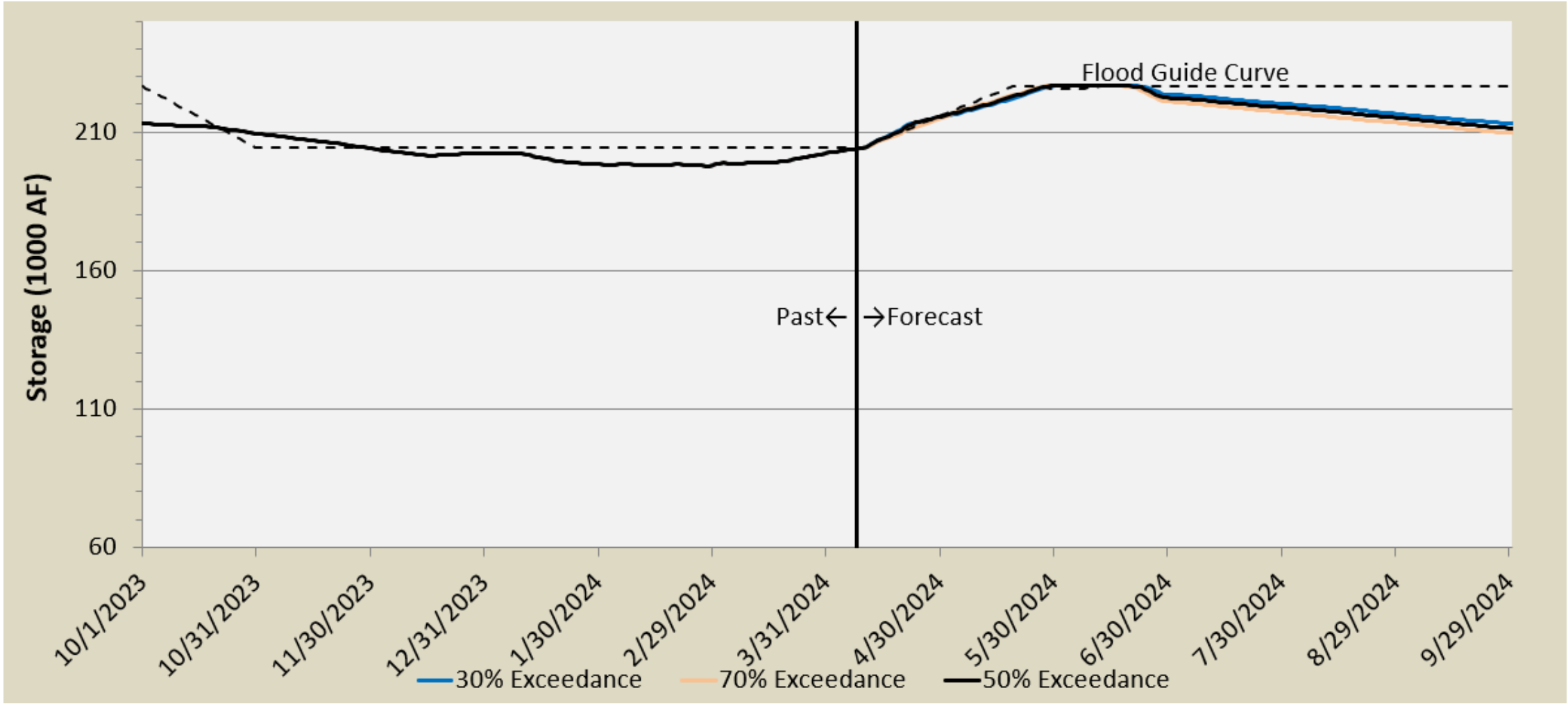
Current Reservoir Storage



Lake Tahoe Storage Forecast

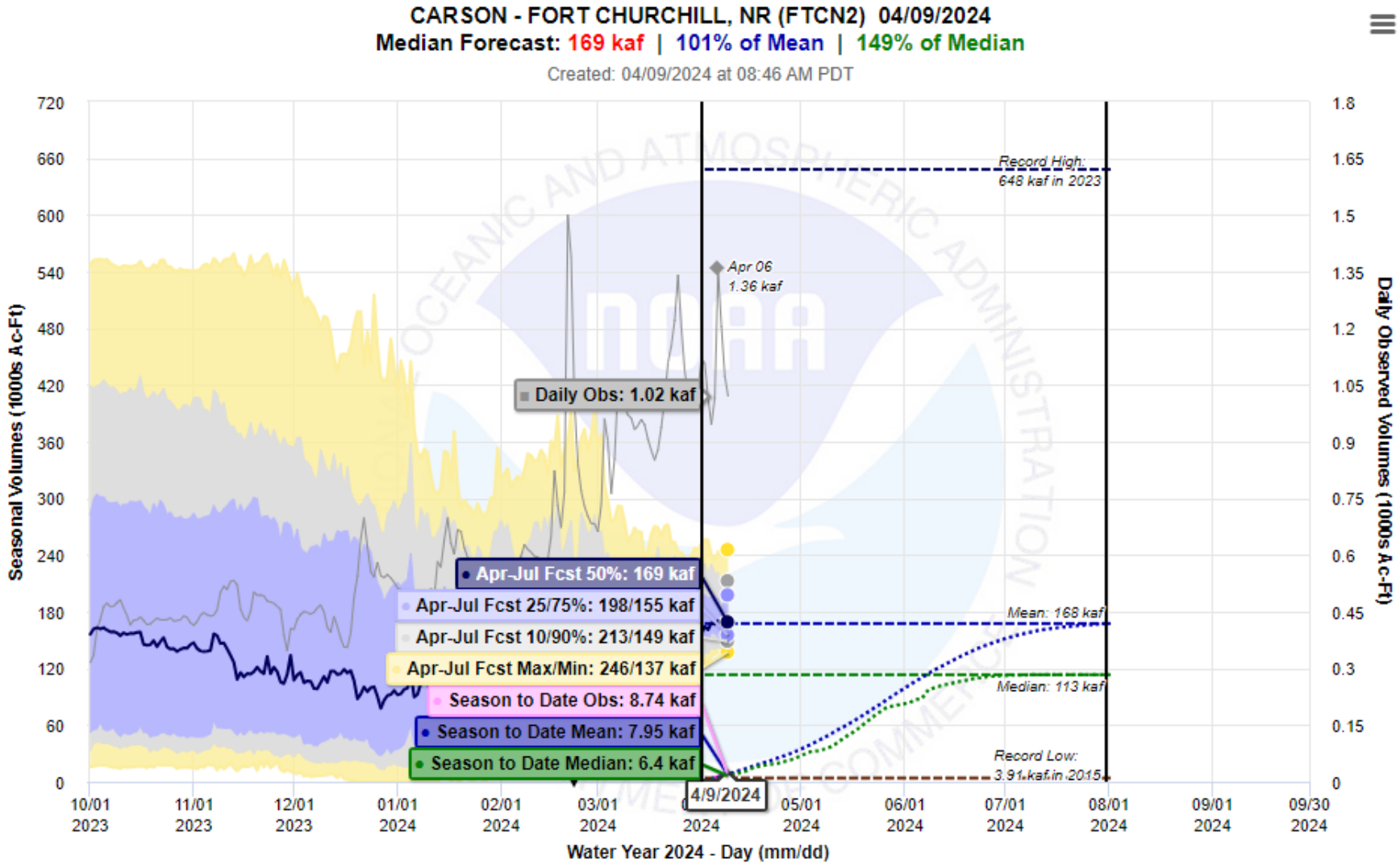


Stampede Reservoir Storage Forecast

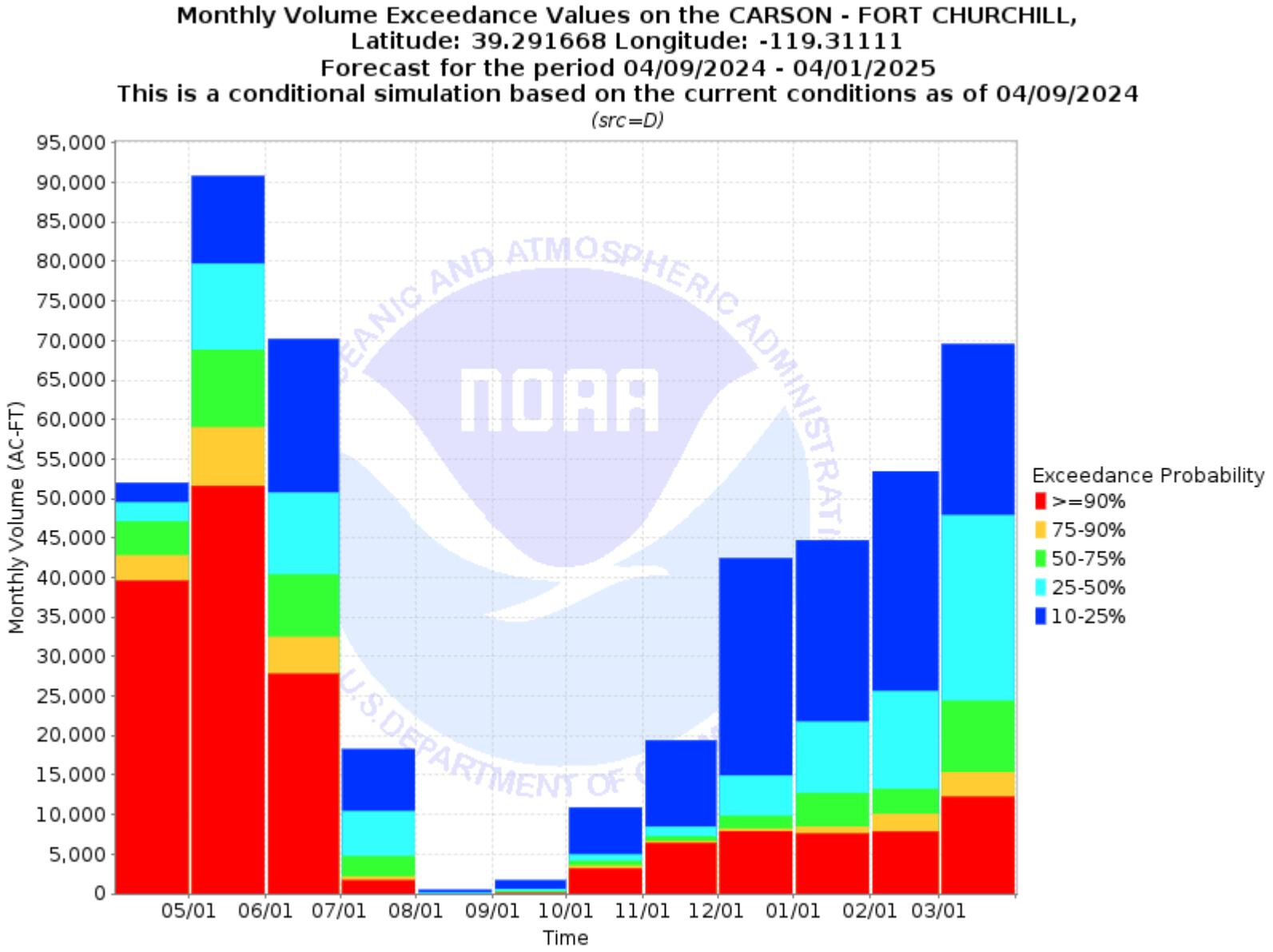


- USACE recently notified us that our proposed deviation for 2024 has been approved, which will allow filling slightly earlier.

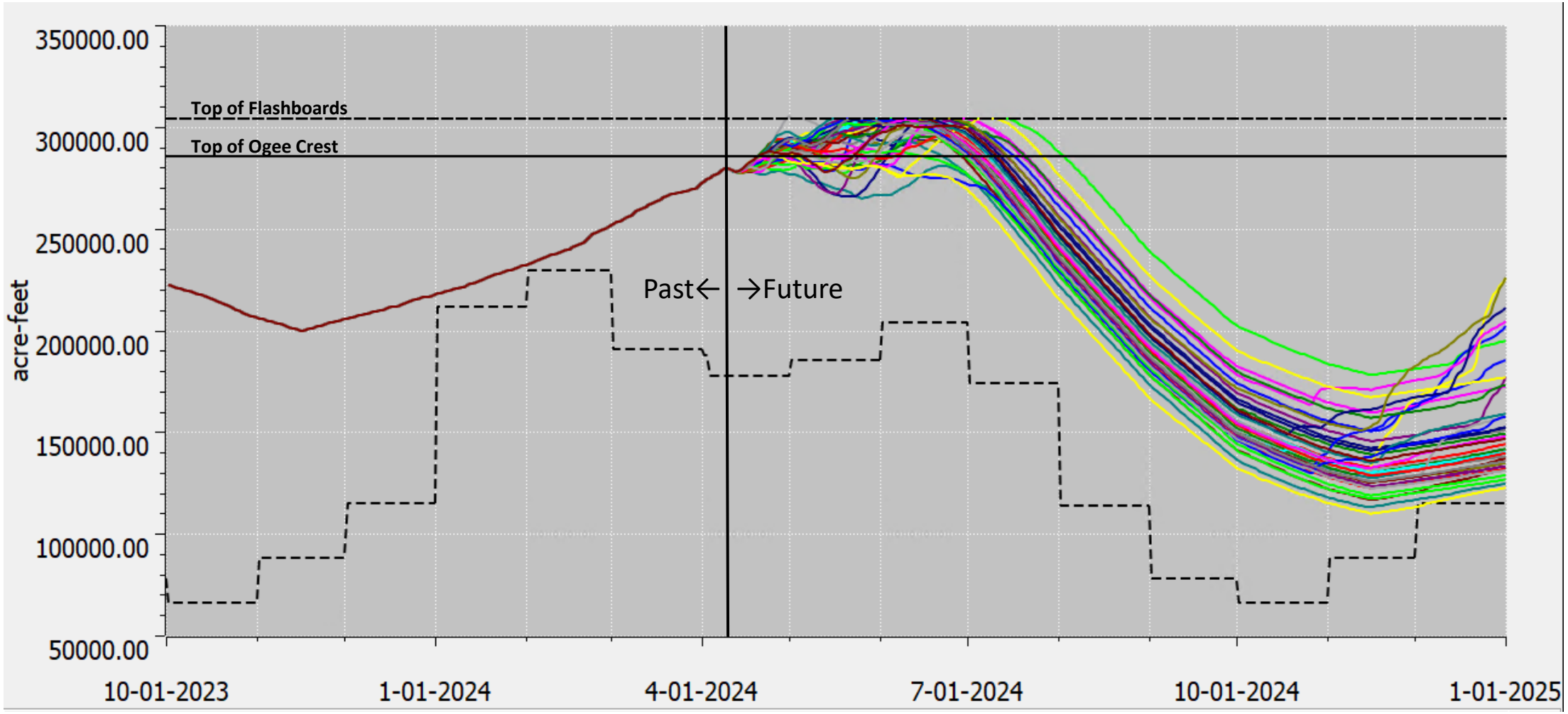
Forecasted Lahontan Inflows



Forecasted Lahontan Inflows



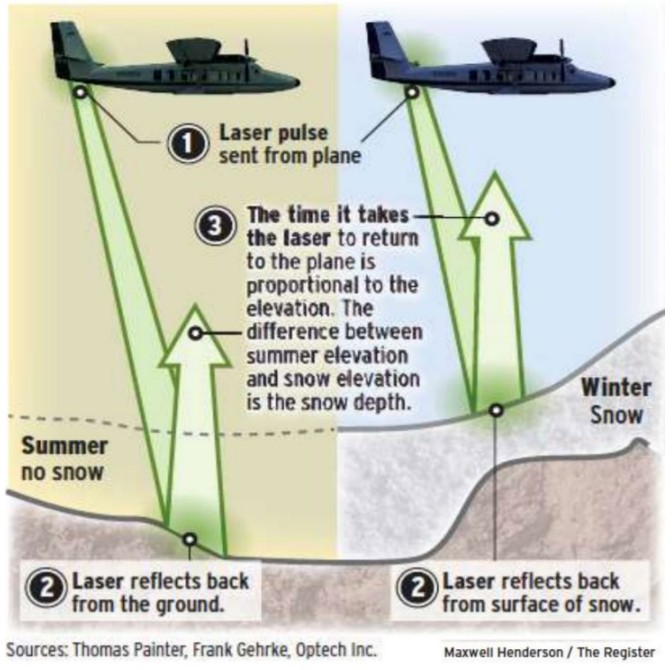
Lahontan Reservoir Storage Forecast

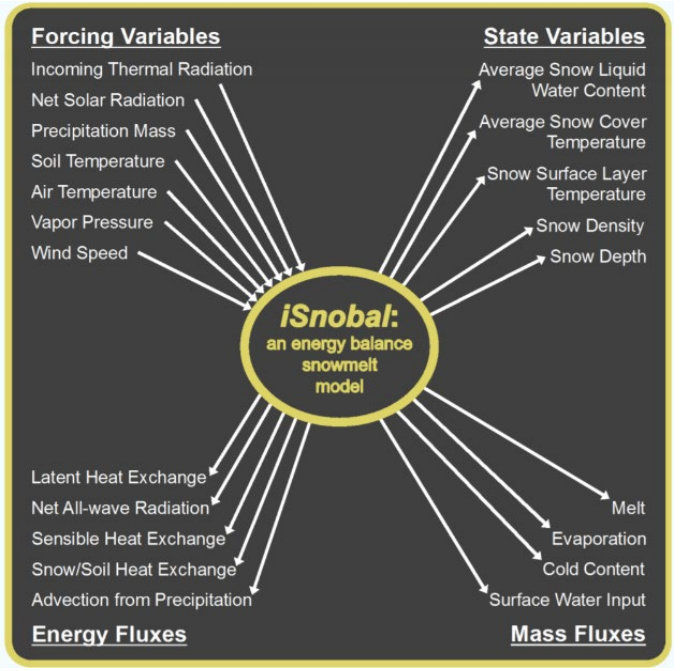


- All traces meet LSOCM for rest of water year
- Precautionary release began this week

Airborne Snow Observatory in the Truckee/ Carson Basins

ASO Process





- Flights/Modeling will provide spatially distributed estimates of SWE
- 2024: 2 flights funded by CA DWR. TCID and Water Master awarded a Reclamation grant, funding 1 additional flight and development of WRF-Hydro model

Carson Airborne Snow Observatory Flight

CARSON RIVER
MARCH 21-22, 2024 SURVEY

Survey date: March 21-22, 2024
Survey # of Water Year 2024: 2
Report delivery date: March 28, 2024

Full domain SWE: 322 ± 10 TAF
Δ SWE since previous survey: +84 TAF
Estimated snowline: 6300 ft

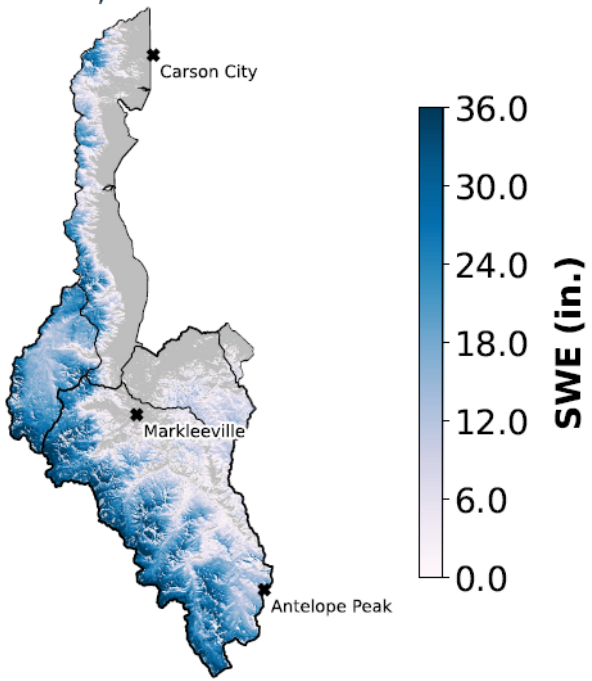


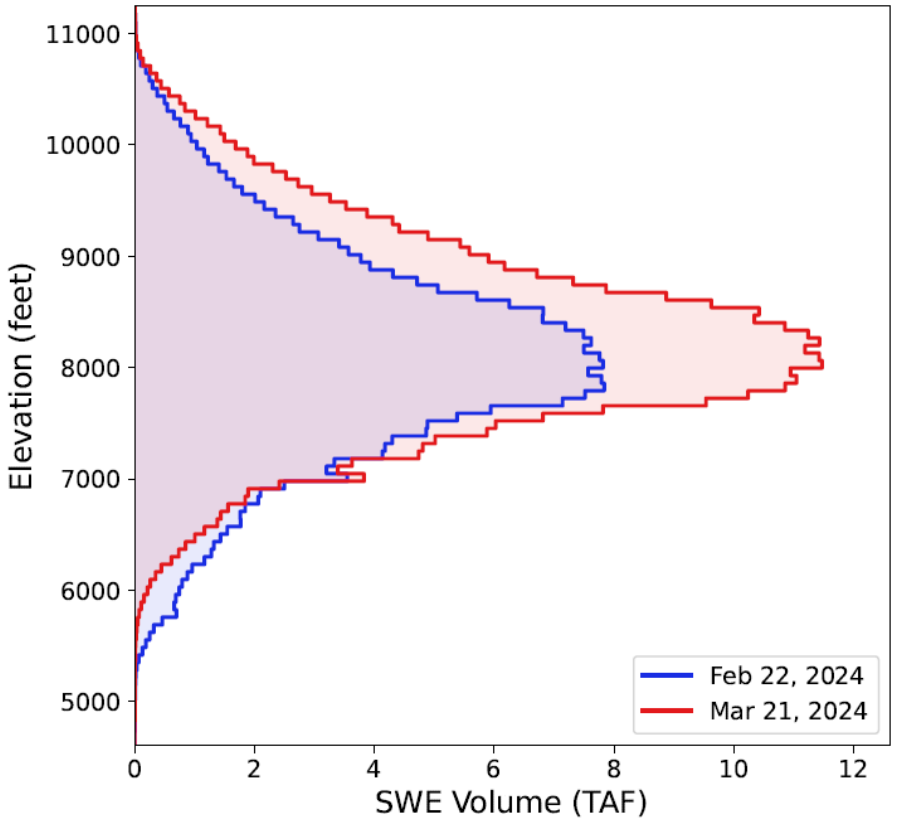
Figure 1. Spatial distribution of Snow Water Equivalent (SWE) depth (in).

Table 1. Estimated SWE volume in Thousand Acre Feet (TAF) for the full Carson basin and subbasins for the March 21-22 survey. Note: subbasins may be overlapping and/or not fully cover the survey domain, therefore TAF values may not add up to the full-domain SWE. We also do not report SWE values for subbasins that extend beyond the boundary of the survey domain.

Basin	Estimated SWE (TAF) February 22	Estimated SWE (TAF) March 21-22
Full domain	238	322
Uncertainty range	*232 - 244*	*312 - 332*
East Fork near Markleeville	148	207
West Fork near Woodfords	50	67
East Fork near Gardnerville	159	217

Distribution of SWE from March 21-22 ASO flight

2.a.



2.b.

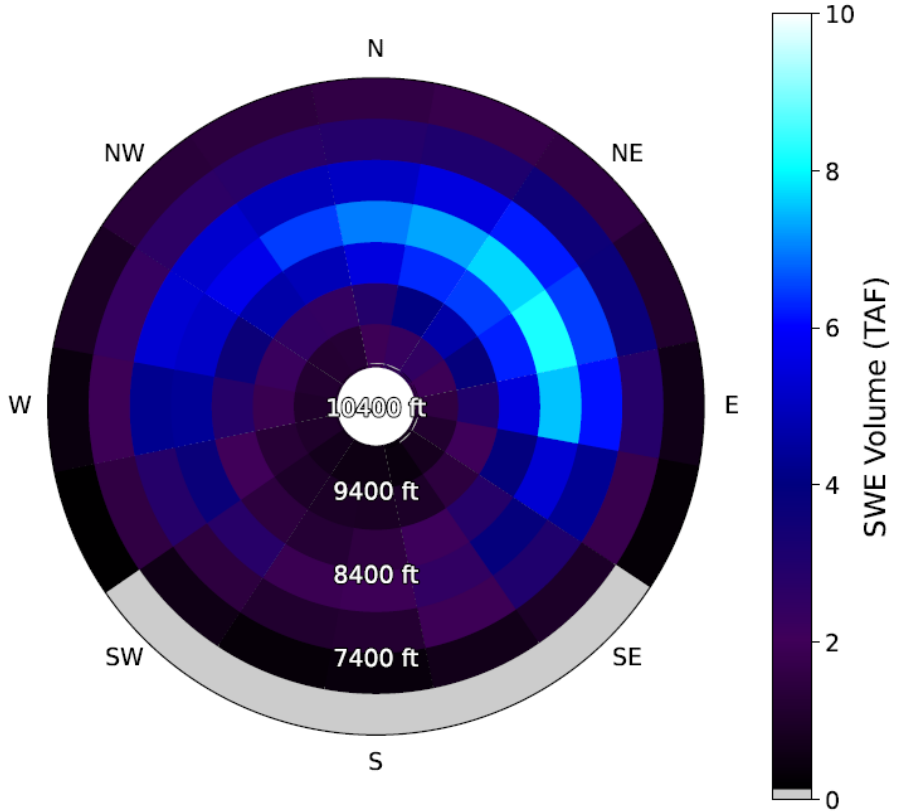


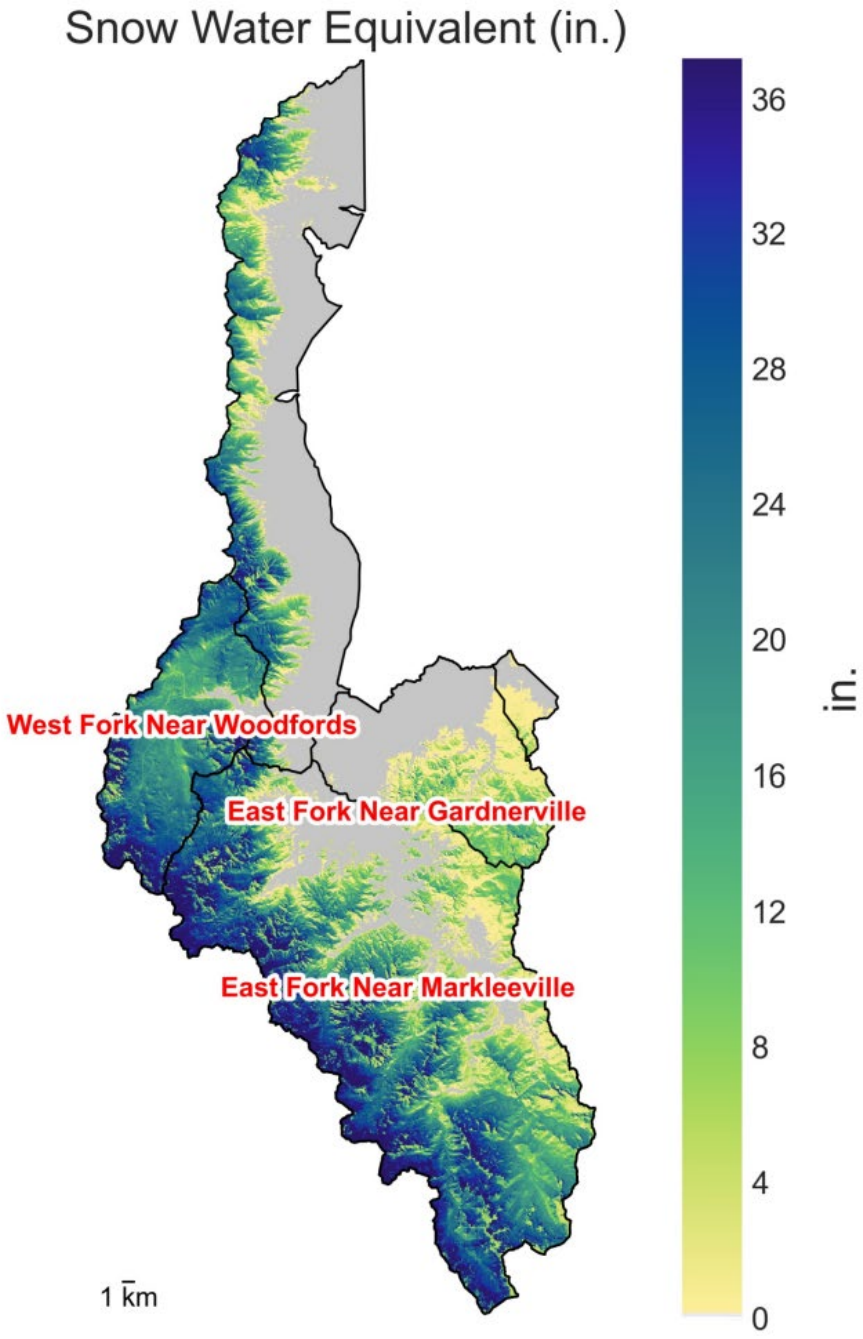
Figure 2.a. Distribution of SWE volume (TAF) by elevation for the March 21-22 survey. Red repesents the March 21-22 survey, blue represents the February 22 survey. **2.b.** Distribution of SWE volume (TAF) by aspect and elevation for the March 21-22 survey. See Figure 8 and Figure 9 for more descriptive plots.

Carson ASO+M3

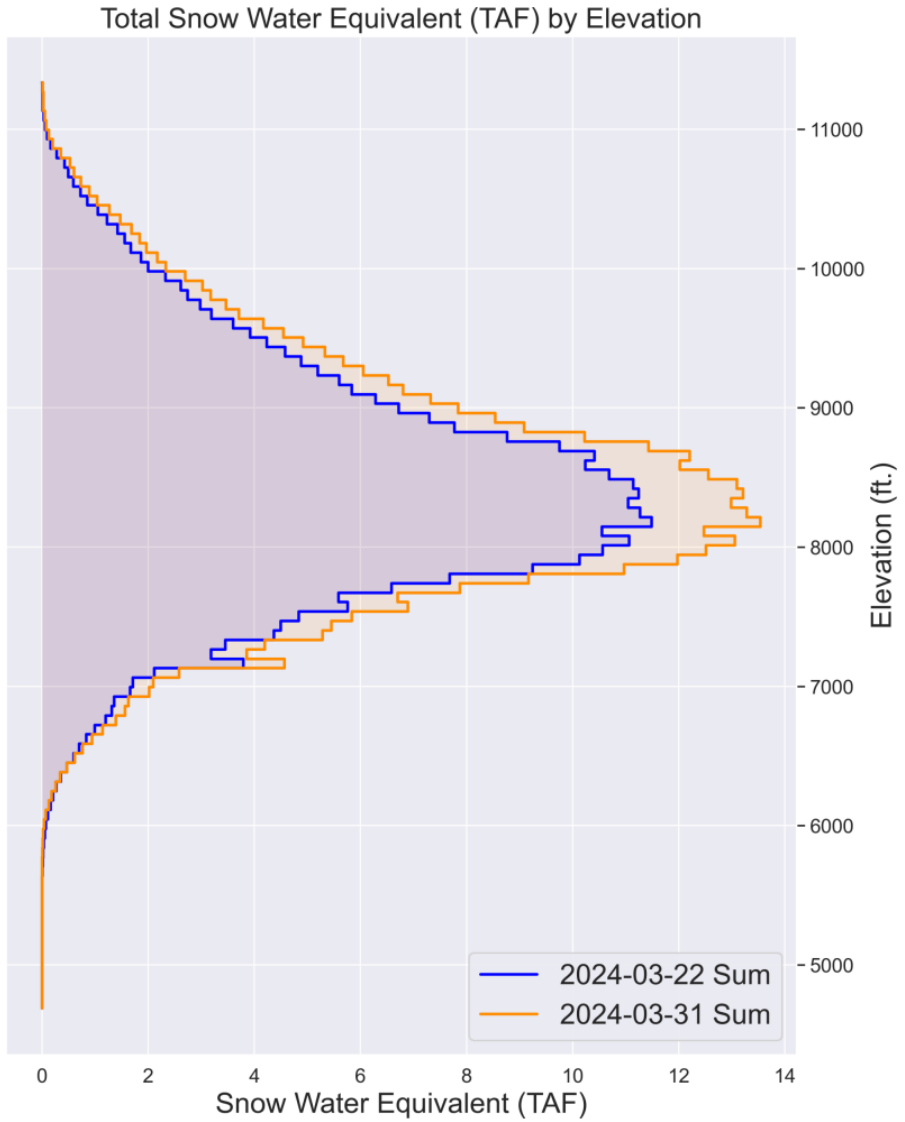
CARSON RIVER, CA
MARCH 31, 2024 MODELING REPORT

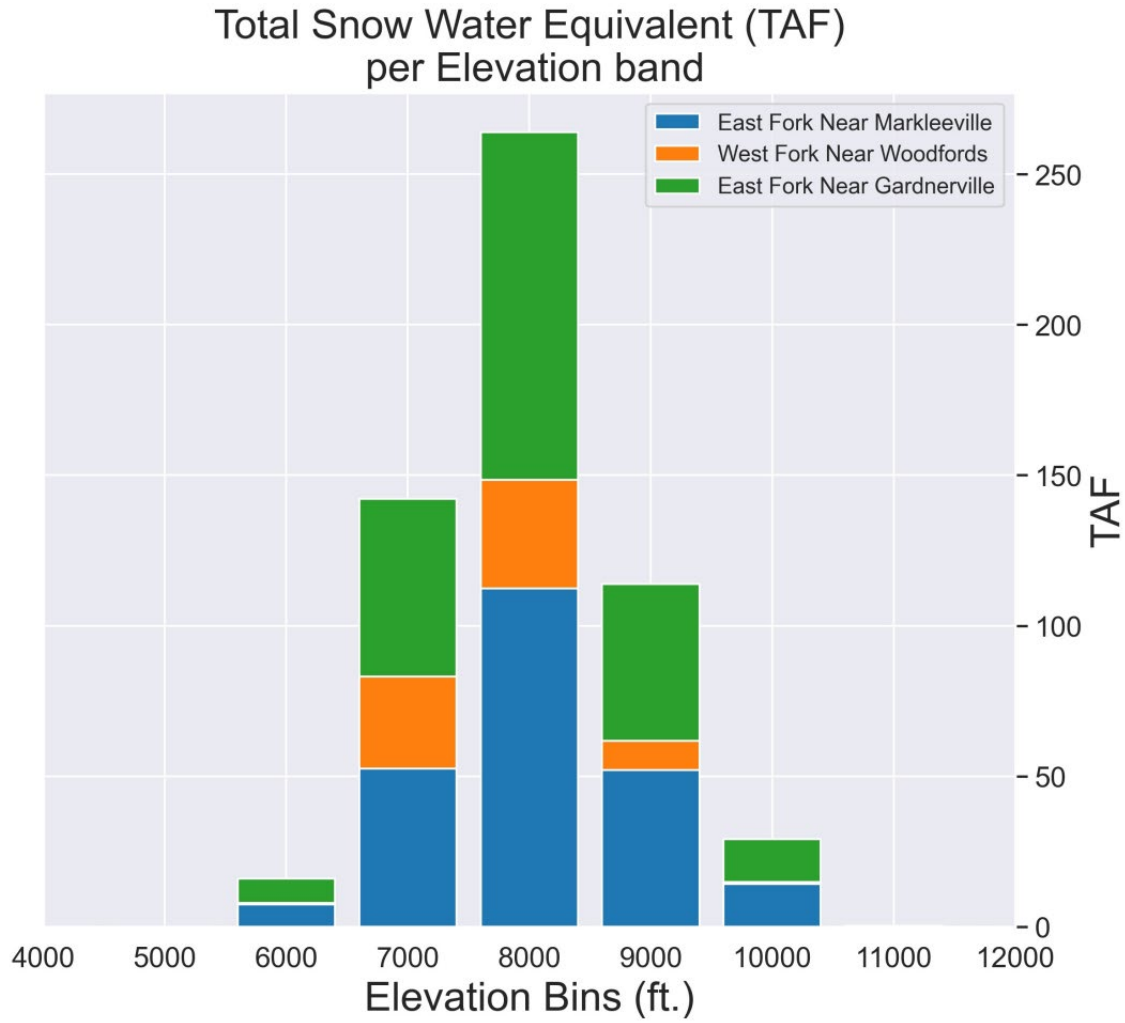
Current model date: March 31, 2024
Model Total Snow Water Equivalent: 372.0 TAF
Model Mean Snow Water Equivalent: 12.2 in.
Model Mean Cold Content: -1.1 MJ/m^2

Model reporting period: March 22 - March 31, 2024
Change in Total Snow Water Equivalent: 56.1 TAF
Change in Mean Snow Water Equivalent: 1.8 in.
Accumulated Total Surface Water Input: 32.8 TAF
Accumulated Total Precipitation: 91.7 TAF
Change in Mean Cold Content: -0.9 MJ/m^2



Carson ASO+M3 SWE by Elevation





WY2024 Summary

- Lahontan precautionary drawdown initiated this week
- Truckee Canal Public Safety Improvement Project outage is completed
- ASO data is improving estimates of Truckee-Carson Snowpack

Comments or Questions?

Katie Clancey

Lahontan Basin Area Office

kclancey@usbr.gov

775-884-8369