

MISSOURI RAC UPDATE

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Chief, Readiness and Contingency
Operations

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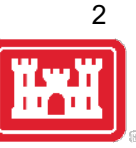


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LEVEE REHAB – 2019 & 2021 DAMAGES



Project Name	PIR Approved	Contract	Design Complete	Executed PCA	Real Estate Certified	Ready to Advertise	Comments
MO Valley Sections 1 and 2 *	05-Nov-2019	new	X				2019 damages
Tri-County (Kansas)	31-Aug-2021	new	X				2019 damages
Labadie Bottoms Sec 4	NA	existing					
MRLS 246-L	NA	existing					
Ray Carroll	NA	existing					
Henrietta Crooked River Sec 1	NA	existing					
Saline County Levee District No 2	NA	existing					
Garden of Eden Sec 1	NA	existing					
Whitam Drainage District	NA	existing					eligibility TBD
Brunswick	NA	existing					
Canon DD Holt Co	-	-					RFA denied 3-Dec-2021
West Glasgow Levee District of Saline	26-Oct-2021	new					
Lower Chariton	01-Dec-2021	existing					
Sugartree Levee District	08-Dec-2021	new					
Cambridge Levee Assoc	10-Dec-2021	new					
Saline Lafayette Drainage District	10-Dec-2021	new					
Wakenda (Farmers and Root)	10-Dec-2021	new					Breach
MRLS 476-L	20-Dec-2021	new					
North Kansas City	03-Jan-2022	new					



LEVEE REHAB – ONGOING CONSTRUCTION



Status of Levee Rehabilitation Construction Contracts							
Resident Office	Levee Unit/System	Construction Contractor	Notice to Proceed Date (CW440)	Contract Required Completion (CC830)	% Complete USACE Construction Contract	Levee Repairs Complete (CC820)	Notes
LVN	Holt Co. No. 9	BKM Construction	25-Feb-21	24-Aug-21	70%	15-Jan-22	Breach closed by 30-NOV-21 (if NFS provides RE)
LVN	Holt Co. No. 10	Medvolt	16-Nov-20	1-Jul-21	100%	Complete	
ROKC	246-L	ESI	27-Jul-20	16-Jan-23	94%	1-Dec-21	
ROKC	Lower Chariton	R&L Boone Construction Company	11-Mar-21	7-Sep-21	100%	Complete	
ROKC	Platte County Section 1, Rushville Sugarlake	Superior Excavating LLC	10-Mar-21	6-Oct-21	95%	29-Oct-21	Breach closed on 20-OCT-21
ROKC	385-L	Lexeco	8-Jun-21	5-Dec-21	15%	5-Dec-21	Stop work on rehab construction - DSC
ROKC	Ray Carroll	TriSmith	30-Nov-20	28-Jul-21	80%	30-Mar-22	
ROKC	Dewitt Section 2 & 1	Cody Martin Excavating LLC	9-Nov-20	13-Apr-21	100%	1-Oct-21	
ROKC	Whitham Drainage District, GOE Sec 1	Better by Design	20-Apr-20	14-Jan-21	100%	28-Dec-20	
ROKC	Ray-Lafayette District & HCR	Circle V Harvesting	18-May-20	13-May-21	100%	27-Apr-21	
ROKC	Saline County Levee District No 2	Academy Consulting	16-Jun-20	15-May-21	100%	30-Jun-21	
ROKC	Brunswick Levee District	Cody Martin Excavating LLC	18-Sep-20	17-Mar-21	100%	30-Jun-21	
ROKC	Sugartree Levee District	BHE, LLC TriSmith	22-Jun-18	17-Mar-21	100%	6-Jul-21	
FLW	Labadie Section 4, 5 & 6	Circle V Harvesting	31-Jan-20	31-May-21	100%	30-Jun-21	
FLW	Berger	Klocke, Inc	29-Jan-20	20-Jul-21	95%	15-Nov-21	
FLW	Tuque Creek Project	Omni Earthworks LLC.	31-Aug-21	18-Jan-22	90%	18-Jan-22	
	Levees with open breaches						Contracts to be modified for 2021 Repairs



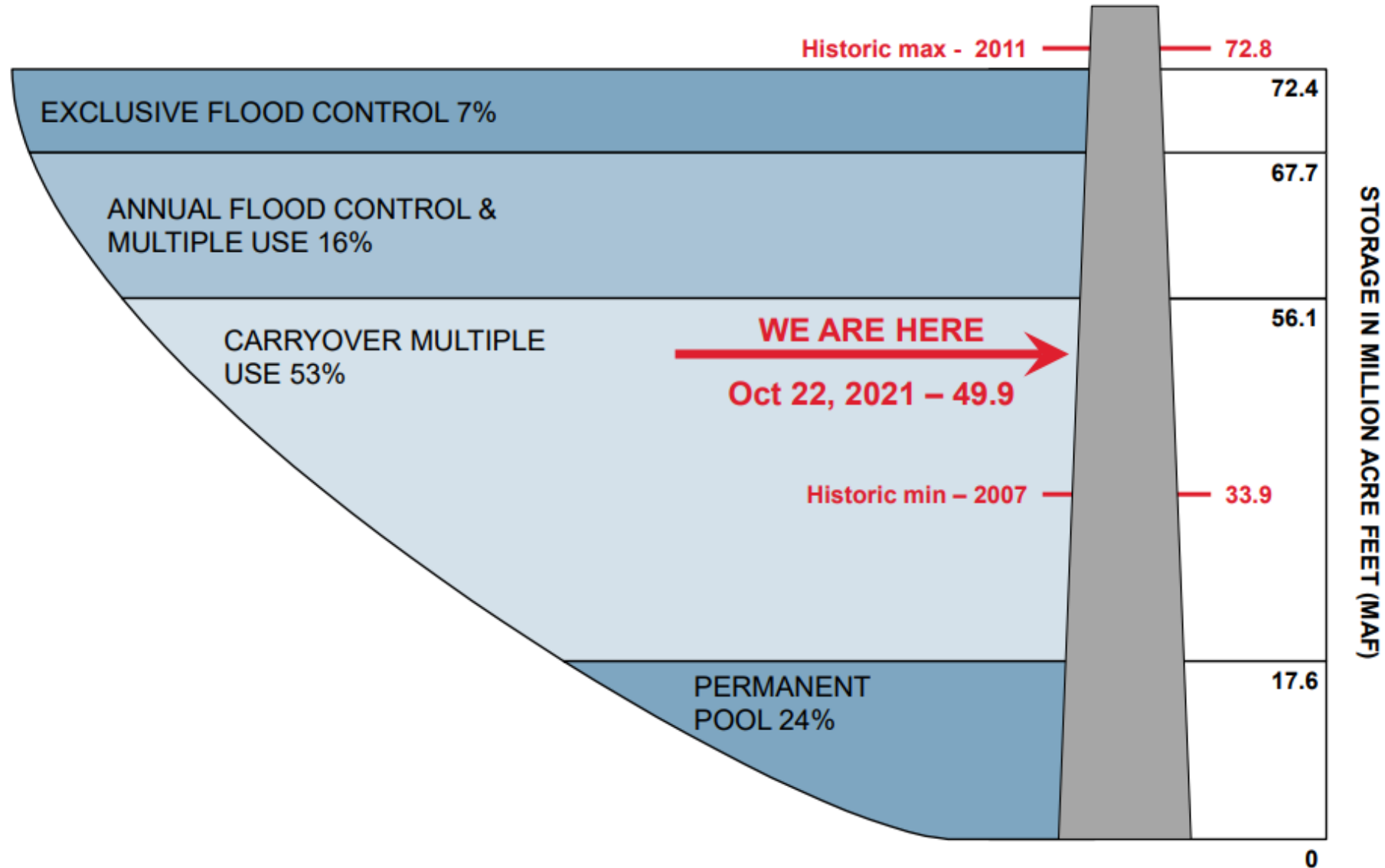
WINTER WEATHER OUTLOOK



- **A very dry and warm year has led to soil moisture deficits and a persistent drought.**
- **Warmer-than-normal temperatures are expected to continue into January for at least the southern half of the basin. Not sure about what temperature trends will be for the northern half.**
- **While chances do favor a wet winter for the northern Rockies, there is no good signal to indicate precipitation trends over the majority of the basin over the next 3 months.**
- **NOAA's 2021-2022 U.S. Winter Outlook calls for La Nina conditions to prevail again this winter. For the Missouri River basin, La Nina's typically leads to colder-than-normal in the northern tier of States and an above-normal snowpack in Wyoming and Montana. No guarantees though!**
- **National Weather Service will issue Spring Flood Outlooks beginning in February 2022.**



MO RIVER MAINSTEM STORAGE ZONES AND ALLOCATIONS





RUNOFF COMPONENTS

PLAINS SNOWPACK

MOUNTAIN SNOWPACK

RAINFALL



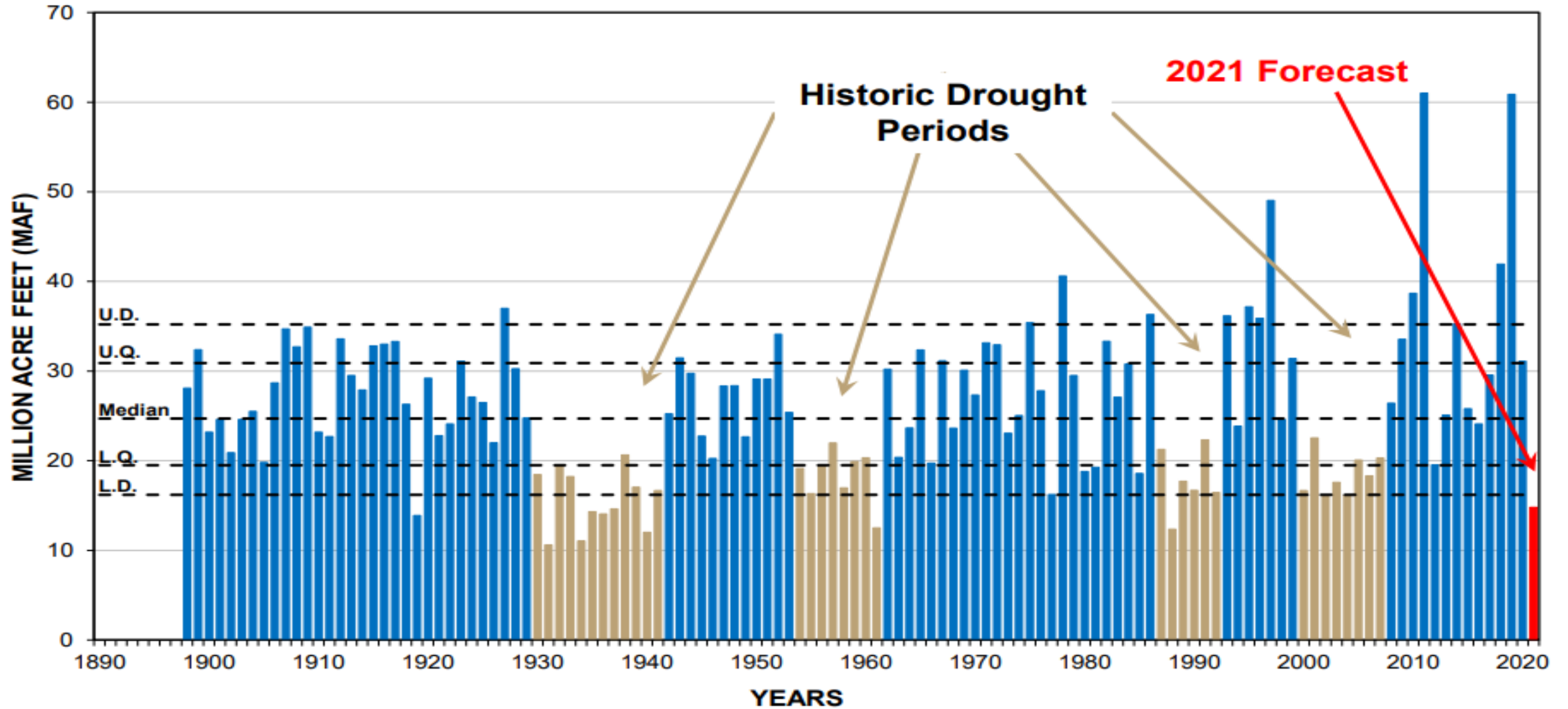
2021 FORECAST* = 14.8 MILLION ACRE-FEET (MAF)

***OCTOBER 1 FORECAST – AVERAGE ANNUAL RUNOFF IS 25.8 MAF**

OUR FORECAST FOR 2022 RUNOFF WILL BE INITIATED IN JANUARY 2022.



ANNUAL RUNOFF ABOVE SIOUX CITY, IA





MO RIVER WATER MANAGEMENT WEEKLY UPDATE



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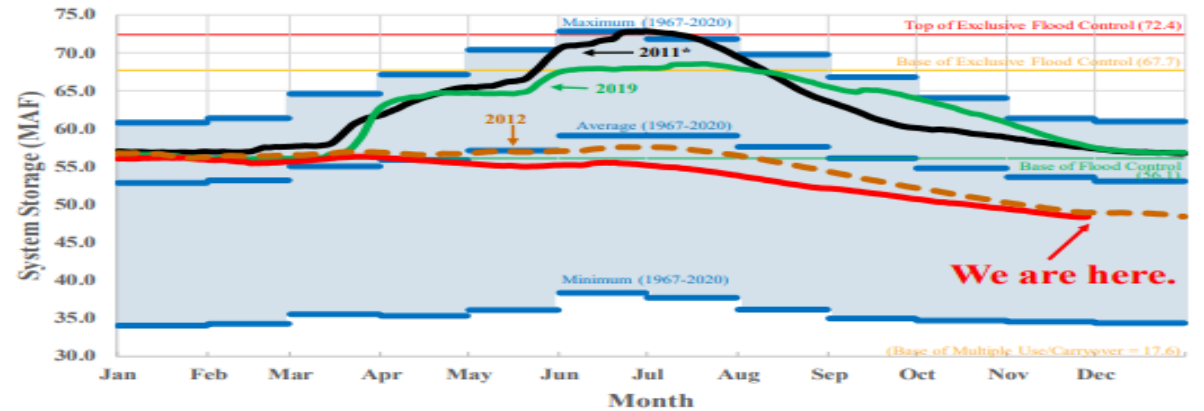
<https://www.nwd-mr.usace.army.mil/rcc/reports/pdfs/weeklyupdate.pdf>

Missouri River Basin – Update – 30 Nov 2021

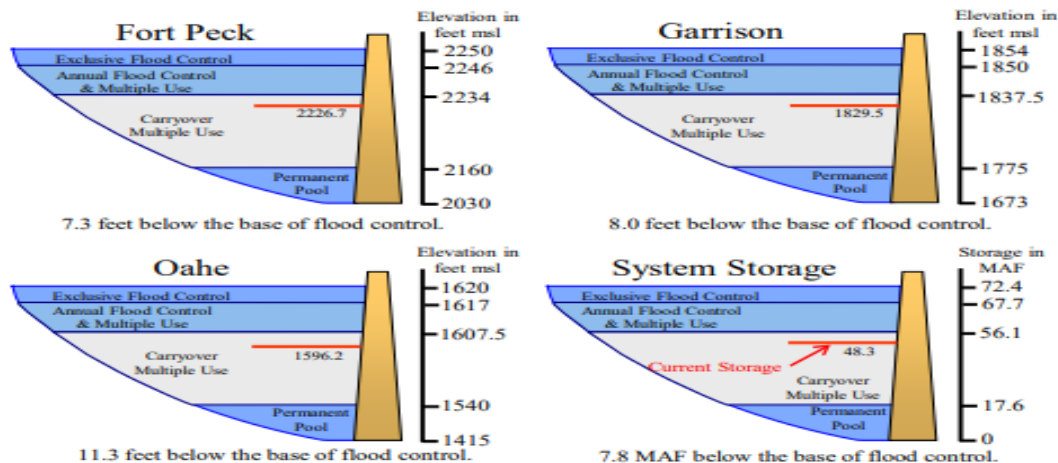
Mainstem Reservoir Status:

- ❖ System storage is 48.3 MAF, 0.1 MAF less than last week (upper right quadrant). System storage for 2012, a similar year to 2021, was added to the plot.
- ❖ The 2021-2022 Draft AOP has been posted to our website ([click here](#)). The comment period ended on November 24. The final AOP will be posted in late December.
- ❖ The winter release schedule for Gavins Point is provided in our daily forecast ([click here](#)) and shown graphically (lower right quadrant). We expect to reach our minimum Gavins Point winter release of 12,000 cfs next week.
- ❖ The Climate Prediction Center is forecasting much warmer-than-normal temperatures in the basin for the next 6-10 days ([click here](#)) and 8-14 days ([click here](#)).
- ❖ Refer to the 3-Week Forecast ([click here](#)) for the most up-to-date System information – pool levels, inflows, and releases.

System Storage Comparison



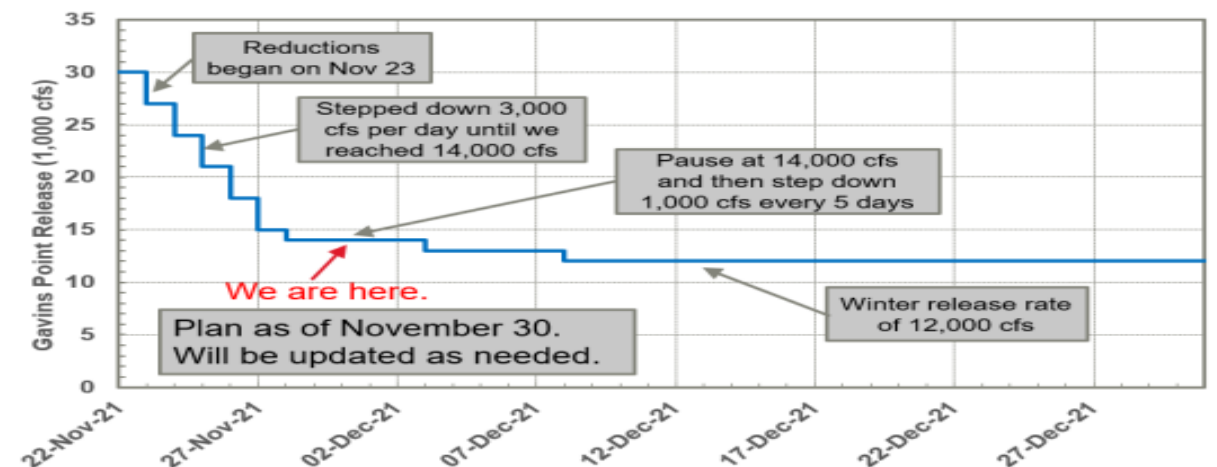
Current Reservoir Levels



[Click Here](#) for Latest 3-Week Forecast

[Click Here](#) for Comparison Plots

2021 Fall-Winter Gavins Point Release Forecast





FLOOD CONTROL



- 2020-2021
 - Flood damages prevented 2020 - \$0.3 billion
 - All 2020 flood water evacuated from reservoir system by mid-December
 - System storage peaked on March 23 at 56.3 MAF, utilizing 1 percent of the System's flood control storage
- 2022
 - All scenarios start next year's runoff season below the base of the annual flood control zone
 - Flooding can still occur due to downstream rainfall
 - Ability to reduce downstream stages diminishes as you move downstream due to increased travel times and uncontrolled drainage area



NAVIGATION



- 2021 – Reduced support after July 1 storage check (1,500 cfs below full service)
- 2022 – March 15 storage check
 - Minimum service for Median and below runoff
- 2022 – July 1 storage check
 - Full service(+), 10-day extension for upper quartile and upper decile runoff
 - Intermediate flow support median runoff (2,400 cfs below full service)
 - Minimum service and shortened seasons for lower quartile and lower decile runoff
 - ❖ Lower quartile – 7-day shortening, lower decile – 16-day shortening



SUMMARY



- Water conservation measures enacted on July 1
- All designated flood storage (16.3 MAF) available to start 2022 runoff season + 8 MAF of conservation storage
- Will closely monitor mountain and plains snowpack accumulation this winter
- Service level for 2022 navigation season likely to be below full service, possibly minimum service

