MISSOURI RIVER BASIN WATER MANAGEMENT

FRAWG MEETING

VIRTUAL
APRIL 13, 2020

JOHN REMUS
CHIEF, MISSOURI RIVER BASIN WATER MANAGEMENT DIVISION

US Army Corps of Engineers
OUR MISSION
REGULATE MISSOURI RIVER MAINSTEM RESERVOIRS

• **Priority:** Life and Safety

• **Operational Decisions:** Driven by Annual Runoff Conditions

  *Water captured in System flood control storage zones each year must be evacuated prior to the start of the following year’s runoff season.*

• **Master Manual:** Storage and release decisions designed significantly around Flood Control, Navigation & Water Supply purposes

• **Authorized Purposes:**

  - Flood Control
  - Navigation
  - Hydropower
  - Water Supply
  - Fish & Wildlife
  - Irrigation
  - Recreation
  - Water Quality Control

• **Federal Laws:** the Corps complies with all federal laws.
CURRENT SYSTEM STATUS
MISSOURI RIVER MAINSTEM SYSTEM
STORAGE ZONES AND ALLOCATIONS

EXCLUSIVE FLOOD CONTROL 7%

ANNUAL FLOOD CONTROL & MULTIPLE USE 16%

CARRYOVER MULTIPLE USE 53%

PERMANENT POOL 24%

Historic max - 2011 72.8

Historic min – 2007 33.9

WE ARE HERE
April 12, 2020 – 58.8

STORAGE IN MILLION ACRE FEET (MAF)

0 17.6 56.1 67.7 72.4 72.8
CURRENT RESERVOIR LEVELS – APRIL 12, 2020

**FORT PECK**
1.9 feet above base of Annual Flood Control Zone.

**GARRISON**
2.9 feet above base of Annual Flood Control Zone.

**OAHE**
2.5 feet above base of Annual Flood Control Zone.

**FORT RANDALL**
5.3 feet above the base of Annual Flood Control Zone.
2020 OUTLOOK
RUNOFF COMPONENTS

PLAINS SNOWPACK  MOUNTAIN SNOWPACK  RAINFALL

2020 FORECAST* = 35.5 MILLION ACRE FEET (MAF)

*APRIL 1 FORECAST – 138% OF AVERAGE
The Missouri River basin mountain snowpack normally peaks near April 15.

Source: USDA, Natural Resources Conservation Service
ANNUAL RUNOFF ABOVE SIOUX CITY, IA

Historic Drought Periods

Median


YEARS

MILLION ACRE FEET (MAF)

2020
MONTHLY RUNOFF ABOVE SIOUX CITY, IA

2020 CALENDAR YEAR FORECAST – 35.5 MAF

MONTHS

MILLION ACRE FEET (MAF)

Forecast
Average
Observed
SYSTEM STORAGE - APRIL 1 FORECAST

- Top of Exclusive Flood Control: 72.4 MAF
- Base of Exclusive Flood Control: 67.7 MAF
- Base of Annual Flood Control: 56.1 MAF

Graph showing system storage levels over years with markers for Basic, Upper Basic and Lower Basic, and System Storage Check.
FLOOD CONTROL

• All 2019 flood water evacuated from reservoir system by late January

• Actual runoff will drive operational decisions and determine expanded service levels

• Storage space available in Fort Peck and Garrison to capture mountain snowmelt runoff

• Forecasted System Releases
  - 33-35 kcfs through July, 40 kcfs in the fall, 20 kcfs winter

• Flooding can still occur – our ability to reduce downstream stages diminishes the farther downstream – due to increased travel times and uncontrolled drainage area
NAVIGATION

• Flow support from April 1 – July 1
  ➢ At least full service based on March 15 storage check
  ➢ Expanded service level likely

• Flow support from July 1 – December 1
  ➢ July 1 storage check
  ➢ Expanded service level likely
  ➢ 10-day flow support extension likely
• Runoff drives operational decisions
• Gavins Point releases
  ➢ Steady release – flow to target
  ➢ Daily release cycle
• Intra-day peaking patterns – Garrison & Fort Randall
• Measures to minimize take
SUMMARY

- Runoff forecast = above average
- Reservoir levels = above average
- Reservoir releases = above average
Mainstem Reservoir Status:

- System storage is 58.6 MAF. About 85% of the designated flood control storage is available to store runoff from spring rainfall events. The system is designed for water to be stored in the flood control storage zone during the wetter spring and early summer months, then evacuated during the drier late summer and fall months.
- The upper plains area did receive an early spring snowfall late last week. Most of that snow has melted.
- Mountain snowpack is slightly above average (bottom right quadrant).
- The public meetings will be virtual meetings. There will be five meetings from April 20-23. A press release will be issued this week that provides all meeting details.
- Refer to the 3-Week Forecast (click here) for the most up-to-date System information – pool levels, inflows and releases.
- The Gavins Point release is 35,000 cfs. The schedule and forecasted Missouri River flows and stages can be found here:

  Click Here for Missouri River releases, flows & stages

Current Reservoir Levels

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Exclusive Flood Control</th>
<th>Annual Flood Control &amp; Multiple Use</th>
<th>Carryover</th>
<th>Permanent Pool</th>
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<tbody>
<tr>
<td>Fort Peck</td>
<td>2250</td>
<td>2246</td>
<td>2234</td>
<td>2216</td>
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<tr>
<td></td>
<td>2160</td>
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<tr>
<td>Oahe</td>
<td>1620</td>
<td>1617</td>
<td>1607.5</td>
<td>1540</td>
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<td></td>
<td>1540</td>
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2.4 feet above the base of flood control.
1.8 feet above the base of flood control.
2.8 feet above the base of flood control.
2.5 MAF above the base of flood control.

System Storage

- Storage in MAF: 72.4, 67.7, 56.1
- Current Storage: 17.6

Mountain Snowpack

April 5, 2020

Total above Fort Peck

17.2", 106% of April 5 Average

Total Fort Peck to Garrison

15.0", 105% of April 5 Average

We are here.

*In January 2011, the Base of Flood Control was 56.8 MAF, and the Top of Exclusive Flood Control was 73.1 MAF.
**THANK YOU!**

<table>
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