2020 Water Management Plan

Water Operations Committee Meeting

Feb. 24, 2021

LCRA's Water Management Plan

- Operations plan for supplying water from lakes Buchanan and Travis to users throughout the lower Colorado River basin
- Allows for supply of interruptible water provided we don't impair our ability to meet the needs of our firm customers
- Developed with significant input from participants, and approved by the Texas Commission on Environmental Quality

2020 Water Management Plan

- **WMP substantially revised in 2015, with further updates in 2020**
  - Hydrology through 2016
  - Firm demand projections through 2025
- **WMP has safeguards and is responsive to:**
  - Inflows
  - Storage conditions
  - Actual operations and demands
  - Possible future conditions
  - Increased firm demands

WMP Safeguards – Responsive to Inflow and Storage Conditions

- Storage in the Highland Lakes and recent inflows are evaluated when allocating interruptible supply
- Separate evaluation dates before first and second seasons factor in the most recent conditions
- Water supply conditions determined based on storage and inflows

WMP Safeguards – Water Supply Conditions

- **Enter Less Severe Drought if:**
  - Storage below 1.5 million acre-feet and three-month inflows less than 50,000 a-f; or
  - Storage below 1.4 million a-f and three-month inflows below 33rd percentile

WMP Safeguards – Water Supply Conditions (Continued)

- **Extraordinary Drought if:**
  - Storage below 1.3 million a-f, drought duration since full at least 18 months, and inflows worse than drought intensity curve; or
  - Storage below 1.4 million a-f and storage dropped 300,000 a-f between March 1 and July 1

WMP Safeguards – Reduced Agricultural Supply and Operational Considerations

- **Allocations for agricultural supply reduced or cut off based on conditions at beginning of season**
  - "Curtailment curves" for Normal or Less Severe Drought
  - Cutoff if in Extraordinary Drought

WMP Safeguards – Reduced Agricultural Supply and Operational Considerations (Continued)

- **Agricultural supply can be cut off mid-season:**
  - If diversions exceed allocations;
  - If releases from Highland Lakes exceed release caps; or
  - If storage falls to 1 million a-f

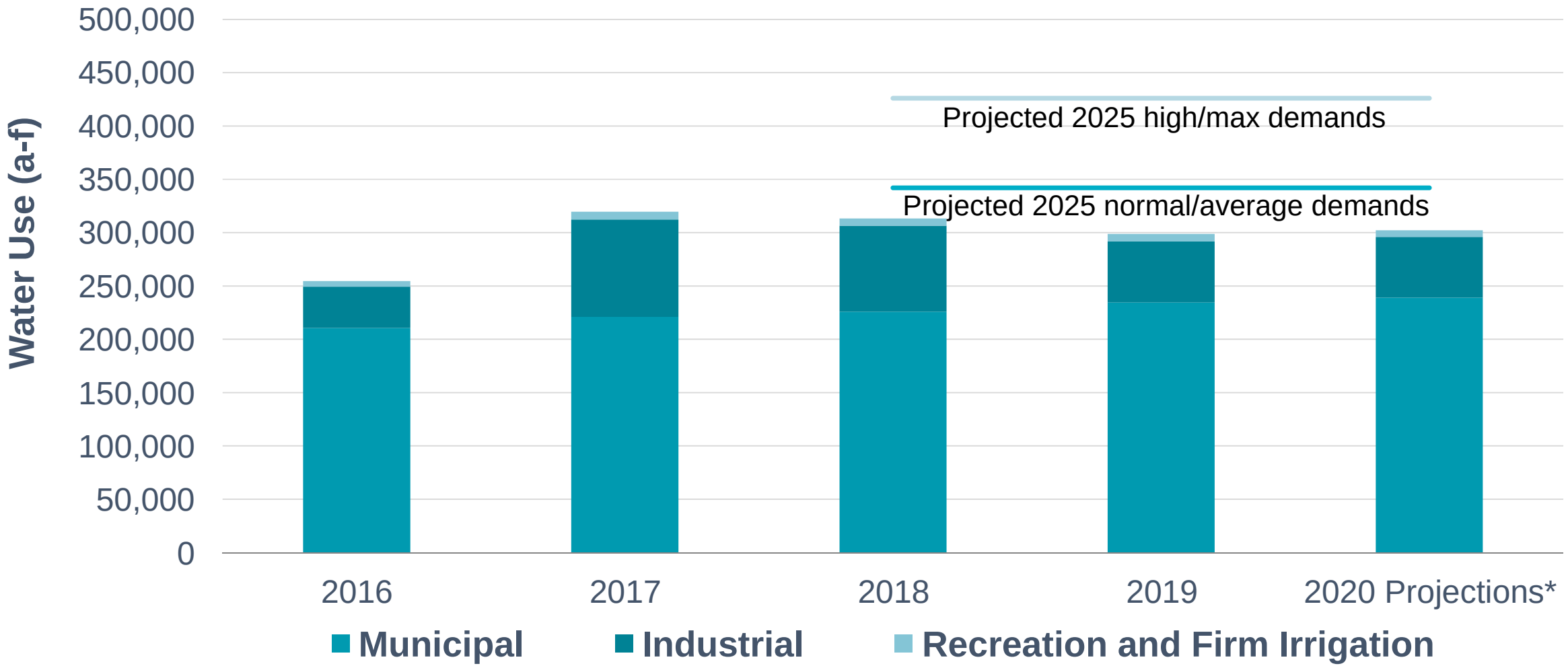
WMP Safeguards – Possible Future Conditions

- **Look-Ahead Test – additional curtailment of agricultural supply if necessary:**
  - 12 months – stay above 600,000 a-f
  - Upcoming season stay above 900,000 a-f

WMP Safeguards – Possible Future Conditions (Continued)

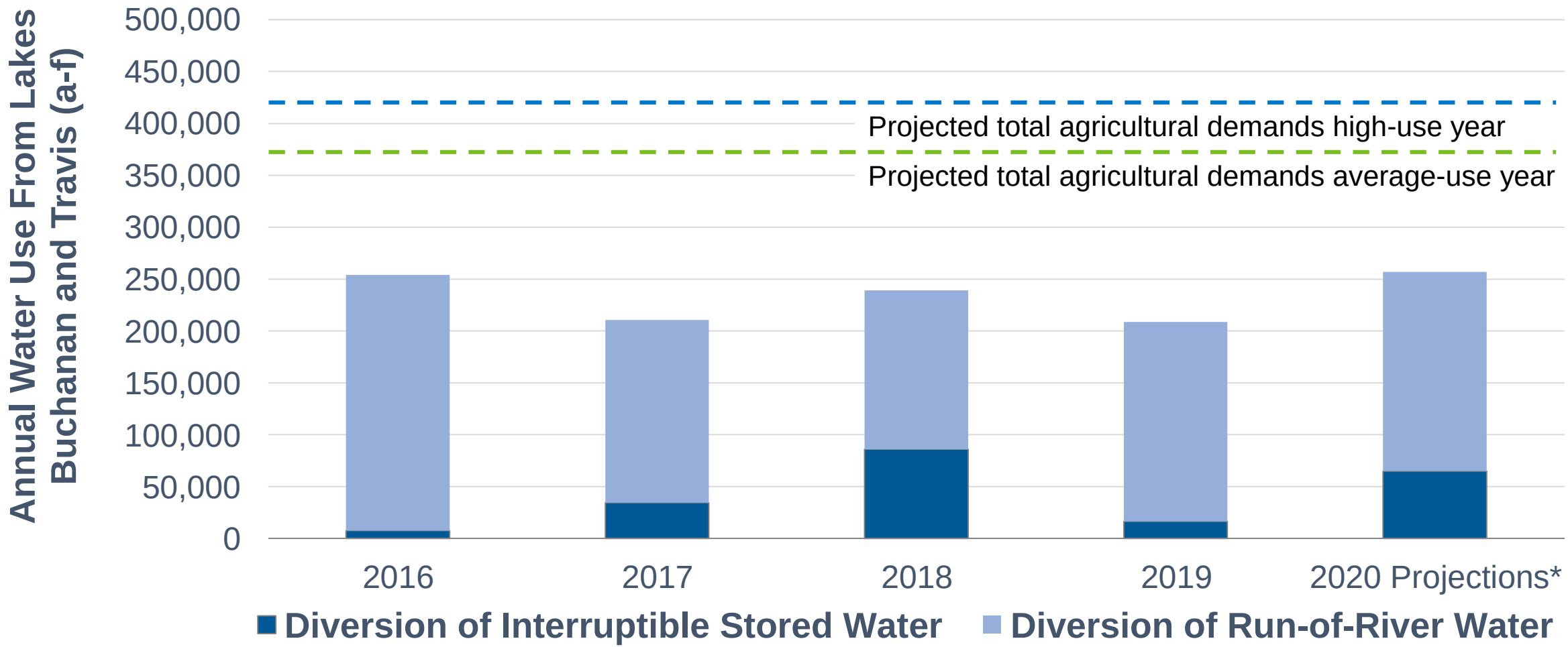
- **Drought Worse Than Drought of Record**
  - If storage below 600,000 a-f, drought at least 24 months and inflows worse than historic drought
- **WMP firm demands based on year 2025 projections**
  - Will begin revision process ahead of demands being realized

Municipal, Industrial, Recreation and Firm Irrigation Use From Lakes Buchanan and Travis and Colorado River



*Based on measured use for January through September and projected use for October, November and December

Use of Interruptible Stored Water and Run-of-River at the Four Downstream Agricultural Operations



*Based on measured use for January through September and projected use for October, November and December

Applying 2020 WMP to 2021 First Season

- **March 1 evaluation date**
  - Projected combined storage:
    - Median about 1.49 million a-f
    - 99th percentile exceedance projection of about 1.48 million a-f

Applying 2020 WMP to 2021 First Season (Continued)

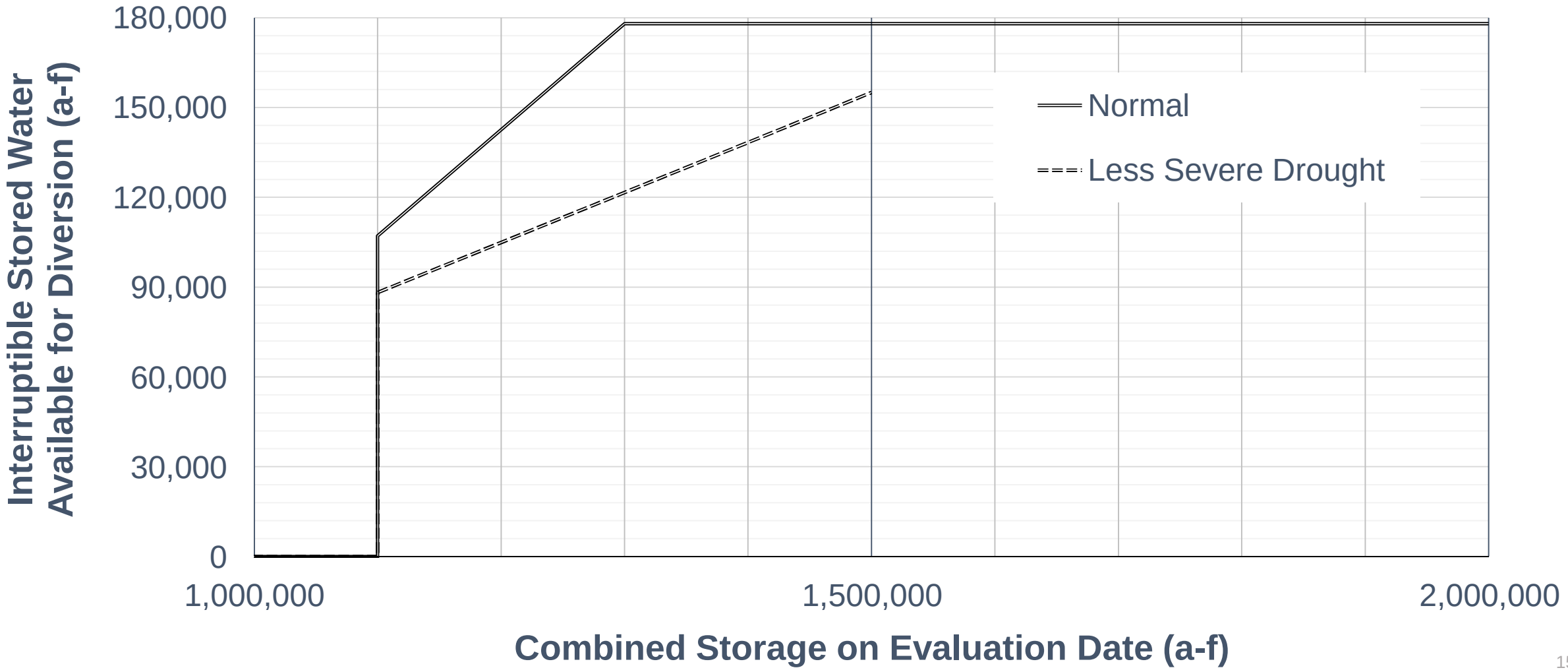
- **Agricultural supply**
  - If storage below 1.5 million a-f and three-month inflows below 50,000 a-f, enter Less Severe Drought
    - December + January inflows totaled 31,520 a-f
- **Environmental flow criteria**
  - Varies if above or below 1.5 million a-f

First Season Interruptible Stored Water Availability

First Season – Normal		First Season – Less Severe Drought	
Combined storage on March 1 (million a-f)	Interruptible stored water (a-f)*	Combined storage on March 1 (million a-f)	Interruptible stored water (a-f)*
Below 1.1	0	Below 1.1	0
1.1 to 1.3	107,100 to 178,000	1.1 to 1.499	88,200 to 155,000
Above 1.3	178,000	Above 1.5	N/A

Anytime cutoff if storage drops to or below 1 million a-f

First Season Interruptible Stored Water Availability (Continued)



Environmental Flows During First Season

- **Instream flow criteria at Subsistence level**
- **Bay inflow criteria**
  - Release criteria will vary if above or below 1.5 million a-f on March 1, including:
    - Two-month bay inflow target
    - Maximum release as a percentage of storable inflows
    - Maximum monthly release
  - Release obligation for bay limited to storable inflows into Highland Lakes

Applying 2020 WMP to 2021 Second Season

- **July 1 evaluation date**
  - Projected combined storage:
    - Median about 1.31 million a-f
    - 99th percentile exceedance projection of about 1.1 million a-f

Applying 2020 WMP to 2021 Second Season (Continued)

- Agricultural supply
  - For median combined storage, would be significantly curtailed
  - If storage below 1.3 million a-f and low inflows continue, likely cut off under Extraordinary Drought
- Environmental flow criteria
  - If agricultural supply is cut off, bay criteria reduces to Threshold only

Summary of Current Status

First season:

- **Combined storage in lakes Buchanan and Travis likely to be below 1.5 million a-f on March 1**
- **Will need to evaluate inflows to determine if conditions result in a reduction under the WMP in available supplies**

Second season:

- **If dry conditions continue to drive low inflows, and if combined storage continues to drop, strong chance for either a greatly curtailed or completely curtailed water allocation under the WMP**

Key Takeaway – the 2020 WMP is Protective and Responsive

- To lake storage
- To inflows
- To actual operations
- To possible future conditions
- To firm demands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