

# DROUGHT CONTINGENCY PLAN

Understanding the potential impact of drought on Taylorsville-Bennion Improvement District water supply and establishing a plan to meet customer needs during periods of drought.



## INTRODUCTION

The Wasatch Front has experienced several drought periods over the past 100 years with typical drought periods extending between 3-5 years. In more recent decades, the frequency and intensity of drought has increased with 2021 being an Exceptional Drought year (highest category of drought conditions) for the area according to the National Integrated Drought Information System. Taylorsville-Bennion Improvement District (TBID) (District) recognizes that it has become increasingly important to protect our current water sources, plan for future water supply during periods of drought, and improve our water reliability.

TBID has created this Drought Contingency Plan (DCP) with the purpose of:

- Evaluating the District's future water supply and demand.
- Evaluating the effects that drought conditions have on the District's water supply and demand.
- Determining appropriate drought triggers.
- Developing a response plan to achieve the necessary water savings.

Drought conditions may derive from a variety of circumstances such as climate change, regular climate variability, water supply contamination, system disruption or interruption, and even unanticipated surges in demand. This Drought Contingency Plan is intended as a guide for monitoring, measuring, mitigating, and responding to water supply shortages or disruptions as a result of any of these or other scenarios.

## SUPPLY & DEMAND

TBID has two supply sources: Jordan Valley Water Conservation District (JVWCD) and groundwater wells.

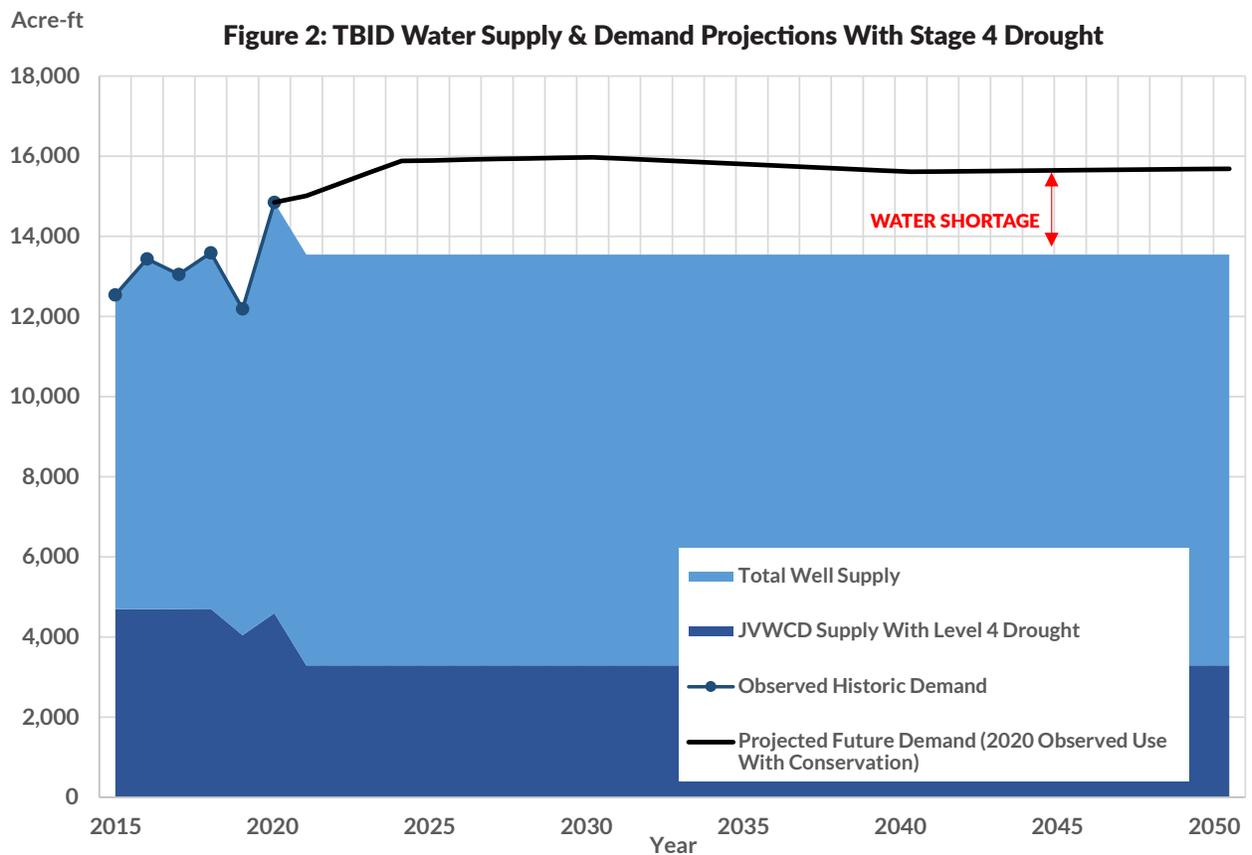
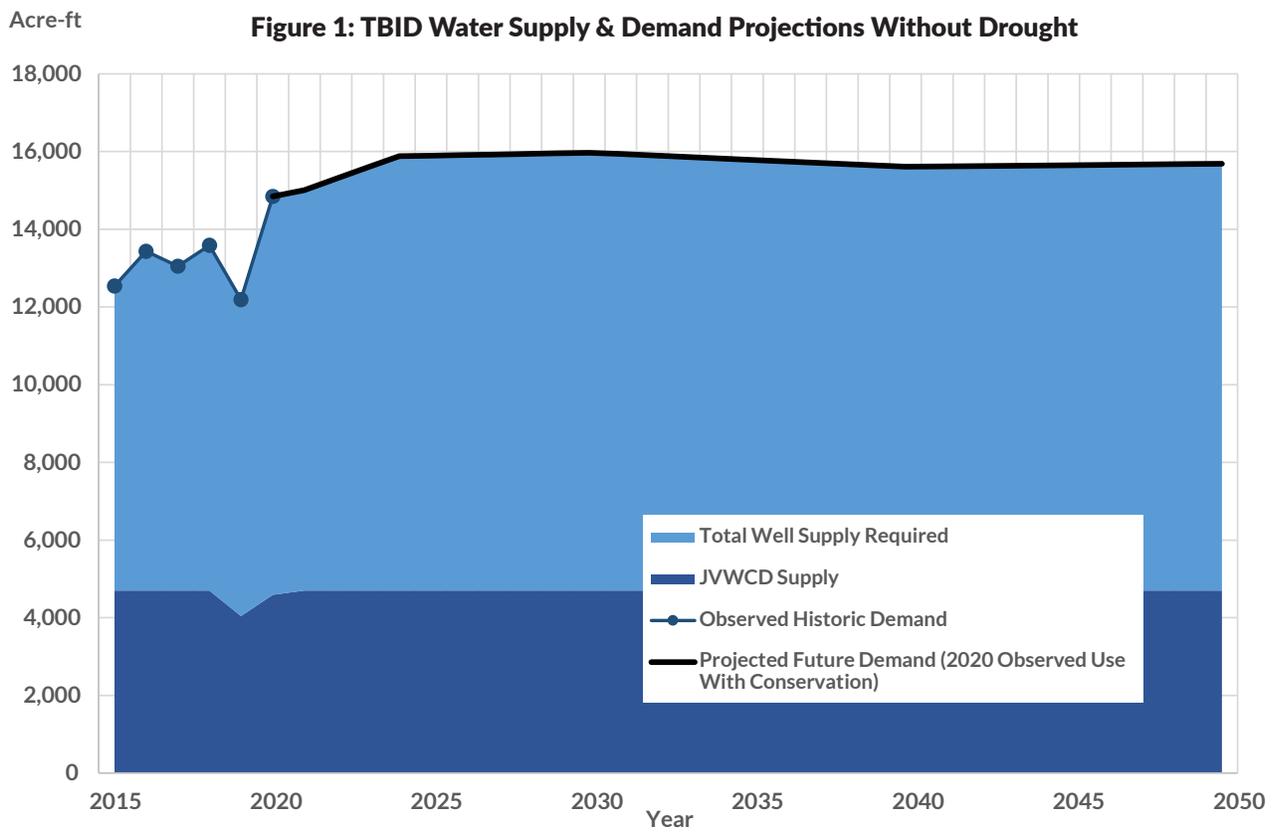
- **JVWCD:** The District has a contract to purchase 4,700 acre-ft per year from JVWCD. JVWCD has recently updated its own DCP to include Drought Response Action Levels ranging from 1 to 4 (4 being the most severe drought level). Table 1 shows each level with the associated reduction in water deliveries for each.

**TABLE 1: JORDAN VALLEY WATER CONSERVANCY DISTRICT SUPPLY AVAILABILITY**

| DROUGHT LEVEL | % REDUCTION IN JVWCD CONTRACT | ANNUAL VOLUME FROM JVWCD (ACRE-FT) |
|---------------|-------------------------------|------------------------------------|
| 0             | 0%                            | 4,700                              |
| 1             | 5%                            | 4,465                              |
| 2             | 10%                           | 4,230                              |
| 3             | 20%                           | 3,760                              |
| 4             | 30%                           | 3,290                              |

- **WELLS:** The District has multiple wells that have historically produced around 10,000 acre-ft per year. Production from these wells has historically been unaffected by drought.

Using the District's historical well production and JVWCD supply, future supply and demand projections were calculated and are shown in Figure 1. Figure 2 shows the same projections, but with reduction in JVWCD supply due to a Drought Level 4.



## CONCLUSIONS FROM SUPPLY AND DEMAND FIGURES

- In non-drought conditions, the District has adequate supply to meet projected demands.
- In a Drought Level 4, JWCD will decrease its supply to TBID by 1,410 acre-ft per year and additional well production may not be available, resulting in the water shortage of approximately 2,000 acre-ft shown in Figure 2.
- The District needs a plan to reduce demands during periods of drought to make sure available supply is adequate to satisfy demands.

## DROUGHT TRIGGERS

To determine the existence and severity of drought conditions, drought triggers must be established. In this plan, the District will consider two drought triggers:

- JVWCD Supply Reductions:** District drought designation will mimic the drought levels of JVWCD when JVWCD declares drought conditions are in effect.
- Interruptions to Well Production:** When peak demands are expected, drought response actions may be necessary based on reduced well production capacity due to drought, contamination, mechanical failure, etc. Thus, drought levels may also be based on available well production (measured as a % of total normal production capacity).

Drought levels based on these triggers are summarized in Table 2 below. Included in the table is the needed reduction in demand to ensure available supply is adequate to satisfy demands.

**TABLE 2: DROUGHT TRIGGERS AND TARGET DEMAND REDUCTION FOR RECOMMENDED DROUGHT LEVELS**

| DROUGHT LEVEL | TRIGGER 1 - JVWCD DROUGHT DESIGNATION | TRIGGER 2 - WELL PRODUCTION CAPACITY (% OF NORMAL CAPACITY) | TARGET DEMAND REDUCTION |
|---------------|---------------------------------------|---|-------------------------|
| 0             | 0                                     | >90%  | 0%                      |
| 1             | 1                                     | 90 to 83%   | 8%                      |
| 2             | 2                                     | 83 to 81%   | 10%                     |
| 3             | 3                                     | 81 to 77%   | 15%                     |
| 4             | 4                                     | <77%  | 20%                     |

## DROUGHT RESPONSE PLAN

The District has identified actions at each drought level needed to achieve the demand reductions identified above. Table 3 shows the recommended actions for each drought level.

**TABLE 3: TBID DROUGHT RESPONSE ACTIONS**

| DROUGHT LEVEL | EDUCATION & OUTREACH  | WATERING GUIDELINES   | RATES                                    |
|---------------|---|---|--|
| 0             | District's existing conservation efforts  | Follow the State of Utah lawn watering guide and time of day restrictions | Regular tiered water rates               |
| 1             | Additional efforts to request voluntary reduction in water use  | Voluntary reductions in lawn watering                                     | Regular tiered water rates               |
| 2             | Additional efforts to request voluntary reduction in water use including voluntary restrictions on watering | Limit watering to two times per week                                      | Regular tiered water rates               |
| 3             | Additional efforts to outline mandatory reduction in water use and rate changes                             | Limit watering to two times per week or less                              | Moderate drought rates (drop equal pay)* |
| 4             | Additional efforts to outline mandatory & emergency reduction in water use and rate changes                 | Limit watering to less than two times per week                            | Extreme drought rates (drop equal pay)*  |

*\*see tables 4 & 5 for moderate and extreme drought rate increases*

Because the District does not have policing or enforcement capabilities, one of the main incentives for increased water savings at more severe levels of drought will be temporary changes to water rates. Tables 4 and 5 show the changes in the District's residential tiered water rates due to drought conditions.

**TABLE 4: MODERATE DROUGHT RATES (LEVEL 3)**

|                                | TIER 1 | TIER 2 | TIER 3 | TIER 4 |
|--------------------------------|--------|--------|--------|--------|
| Change to Existing Volume Rate | 0%     | 0%     | +50%   | +100%  |
| Tier Definition (kgals)        | 0-6    | 6-25   | 25-45  | 45+    |

**Note: Table applicable to tiered residential rates only. For nonresidential and wholesale rates, volume rates increase by 10%.**

**TABLE 5: EXTREME DROUGHT RATES (LEVEL 4)**

|                                | TIER 1 | TIER 2 | TIER 3 | TIER 4 |
|--------------------------------|--------|--------|--------|--------|
| Change to Existing Volume Rate | 0%     | +25%   | +100%  | +150%  |
| Tier Definition (kgals)        | 0-6    | 6-25   | 25-45  | 45+    |

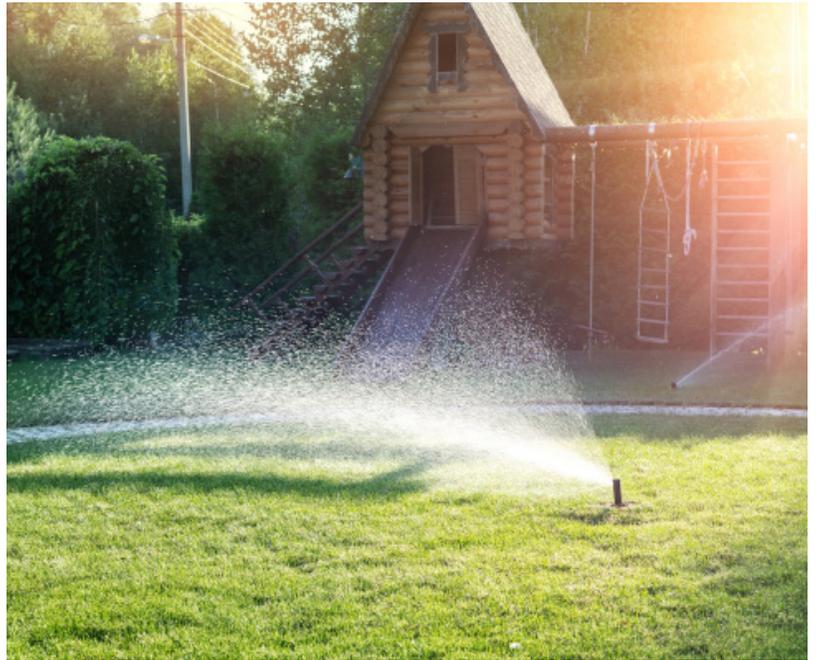
**Note: Table applicable to tiered residential rates only. For nonresidential and wholesale rates, volume rates increase by 20%.**

## EDUCATION & OUTREACH

Notifying and educating TBID water users is critical to the success of this Drought Contingency Plan. To do this efficiently and effectively, TBID will email customers and send out flyers in the mail requesting voluntary water reduction. Additionally, TBID will request reductions via social media, on their website, and various other digital platforms.

## DROUGHT LEVEL DESIGNATION

- It will be the responsibility of the General Manager to monitor drought conditions in the District.
- If any of the triggers are reached, the General Manager may contact the District's Board of Trustees within 30 days to make a recommendation regarding drought level.
- The Board shall adopt or modify the drought level recommendation of the General Manager in a resolution.
- In the resolution, the Board may add any additional recommendations or requirements regarding actions to be taken in association with the drought response. This may include specific guidance on education and outreach, watering guidelines, and/or drought mitigation rates.



## PLAN EXECUTION

Once a drought level designation has been adopted, plan execution will be under the direction of the General Manager. The General Manager will follow any specific guidance provided in the resolution designating the drought response from the Board. In the absence of specific guidance, the General Manager will follow the recommended actions for the specific drought level designation as identified in this document.

For additional information visit the District's website at <https://tbid.org/new1/>

