



**AGENCY:** City Council  
**MEETING DATE:** August 9, 2021  
**DEPARTMENT:** City Manager/Public Works  
**PRESENTED BY:** T. Miller  
**EMAIL ADDRESS:** [tmiller@fortbragg.com](mailto:tmiller@fortbragg.com)

## AGENDA ITEM SUMMARY

### **TITLE:**

**Receive Report, Conduct Public Hearing, and Consider Adoption of City Council Resolution Declaring a Stage 3 Water Emergency and Implementing Stage 3 Mandatory Water Conservation Measures**

### **ISSUE:**

The City of Fort Bragg Municipal Code Chapter 14.06, Water Conservation, updated on July 12, 2021, provides the City Manager with the discretion to determine whether the system's water supplies and sources available are sufficient to meet the current customer demands on the system after considering all relevant factors. The City Manager shall consider, among other things: 1) any variations in the reliability of the water supplies available to the system; 2) availability of well or other nonpotable water to meet the nonpotable demands on the water system; 3) weather forecast and other factors that impact flows in the City's surface water sources; and 4) the success, or lack thereof, of previous declarations of a less stringent water conservation stage in meeting the water-use reductions sought by the City.

While Chapter 14.06 provides that the City Manager determine the stage of water conservation, it requires the City Council to declare by resolution a Stage 3 Water Emergency, after a properly noticed public hearing.

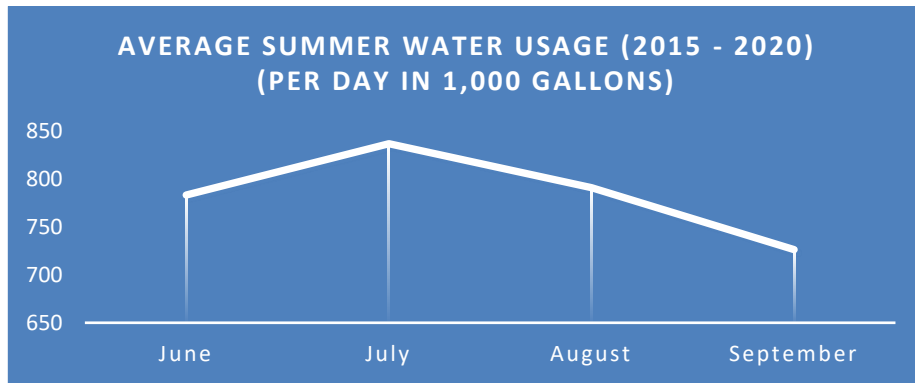
### **ANALYSIS:**

The City Manager has determined that a Stage 3 Water Emergency is the appropriate level for managing water supply and demand at this point in the drought emergency declared for Mendocino County by Governor Newsom on April 21, 2021. A Stage 3 Water Emergency targets a 20-30% decrease in seasonal water use based on the most recent year in which water conservation measures were not required (2019). Stage 3 is a 10% increase in conservation from Stage 2, which targets a 10-20% reduction in water use.

### **Water Supply Available**

As explained before, the City of Fort Bragg's water supply system relies solely on three surface water sources: Waterfall Gulch (tributary to Hare Creek), Newman Gulch (tributary to Noyo River), and the Noyo River (diversion at Madsen Hole). In 2015, the City's water supply system could only store small amounts of water that provided enough to maintain proper water system pressure and to provide a safety margin for fire-fighting flows. Six years later, the City has made progress with water storage with the addition of a 1.5 million gallon finished water storage tank and the Summers Lane Reservoir with a raw water capacity of 14.7 million gallons. This brings our total water storage capacity to 22.6 million gallons, which is approximately 30 days of storage with average daily use of 750k gallons.

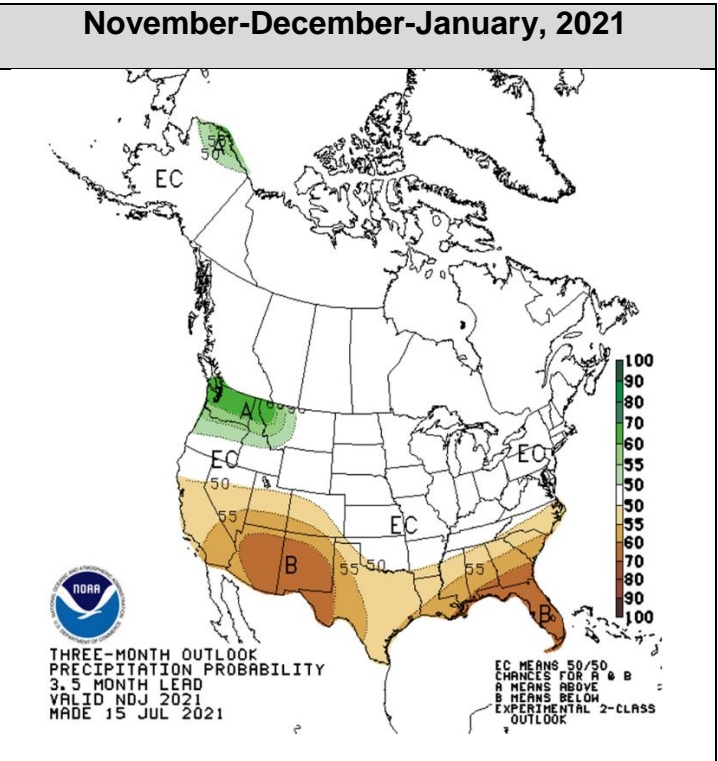
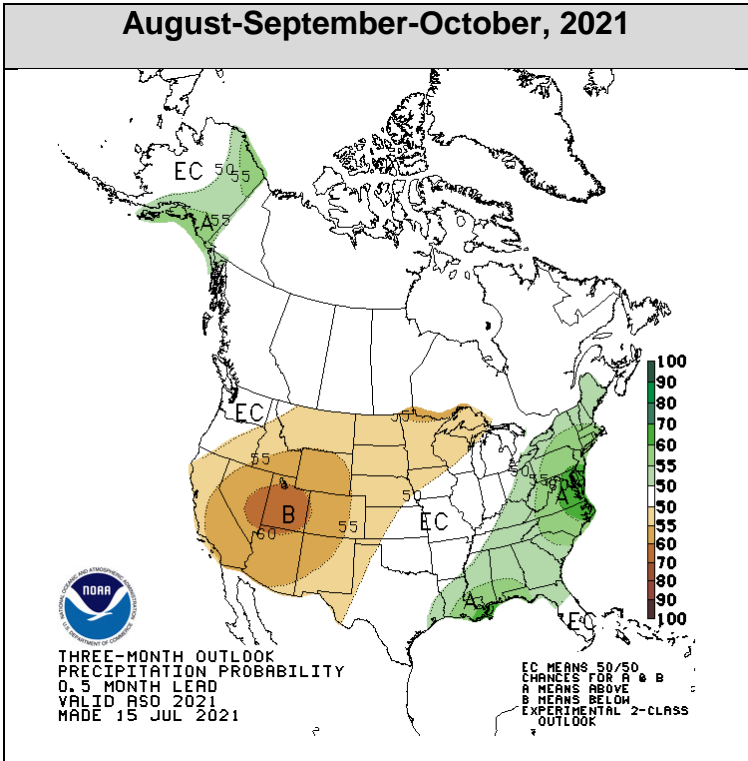
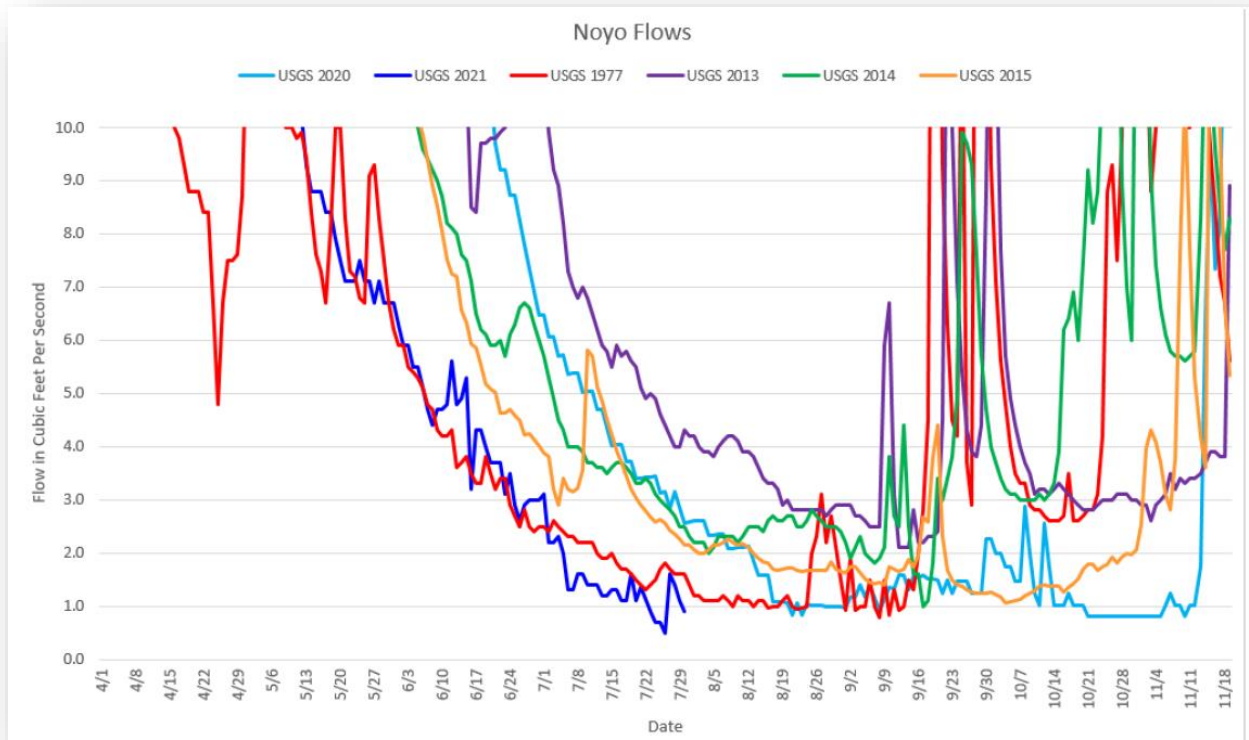
During the winter and spring, pumping of the Noyo River is used only to supplement the Waterfall Gulch and Newman Gulch sources. The two tributary sources generally provide a higher quality of raw water and gravity-feed to the water treatment plant, whereas water from the City's Noyo River diversion must be pumped. As summer progresses and the flows in the tributary streams diminish, the Noyo River diversion is used more frequently and in greater quantities. In July, Waterfall Gulch and Newman Gulch provide approximately 40% of the City's water needs and 60% of summer water supply comes from the Noyo River. As the water levels in the Noyo River drop and the high tide levels rise, increased salinity levels in the Noyo River impact the City's ability to pump from this water source. City water usage typically peaks in July as seen in the graph below.



Most of the year, the City's three surface water sources meet or exceed the City's daily usage. During these times, the 22.6 million gallons of storage is regularly replenished and remains at capacity. Excess available water continues to feed the river or streams down water from the source. Therefore, while year round conservation saves money and builds good habits that benefit our environment, unlike water systems heavily dependent on water drawn from reservoirs, it does not save water that is available later. This means that balancing daily use versus daily supply is very important and drastic reductions do not help the City unless they are needed immediately.

Flows in the Noyo River in the late summer and early fall depend on rainfall received, more so than the Waterfall Gulch and Newman Gulch sources. Flows in the Noyo River typically hit the lowest levels in August and remain there until there is significant rainfall. When rainfall will reach levels that impact the Noyo flows for more than just a day or two depends on the year. In 2015 and 2020, flows remained low until the first part of November (see graph on next page).

There is little indication that late summer and fall will see any significant precipitation in the Northern California region. Based on predictions provided by the National Oceanic and Atmospheric Administration (NOAA), our region is predicted to have below average precipitation for the next six months (see prediction graphs on next page).



In anticipation of this year's drought, the City ordered a Desalination-Reverse Osmosis Treatment System from Aquaclear that will allow it to continue to pump water from the Noyo River during high tides when salinity reaches levels that cannot be processed by the City's Water Treatment Plant. The expected date for installation of the Desalination-Reverse Osmosis Treatment System is the first week in September. The Fort Bragg Unified School District (FBUSD) has also offered to provide access to its well water, adding an additional source to the City's water system. The Water Sharing Agreement with the FBUSD is scheduled for approval this evening by the City Council and will be presented to the FBUSD Board for approval on August 19, 2021.

As of drafting this report (July 30, 2021), the City's water storage is at full capacity and the daily demand for water usage is met from available supply water sources. While flows in the Noyo River dropped during July, we did see increases and decreases in flows attributable to Camp Noyo installing the dam and then releasing water from its reservoir. We anticipate that some level of increased flows will be attributable to Camp Noyo's release of water through the first week in August.

In both August and September, there are 17 days with tide levels predicted at or above 6.0 feet<sup>1</sup>, the level at which pumping during low flow periods is challenging. Based on historical flows, staff predicts that total sources will provide 15 million gallons during August. This excludes the Desalination-Reverse Osmosis Treatment System, the FBUSD well, and the Summer's Lane Reservoir. Based on water flows during July and taking into account an additional 10% decrease from Stage 3 conservation measures, demand is predicted at 19.5 to 20.0 million gallons. This is a shortfall in supply of approximately 5 million gallons or one-third of the capacity of the Summer's Lane Reservoir, which will be used to supplement that shortfall.

#### Success of Prior Conservation Stages

Water usage from July 1 through July 12, 2021 averaged 712k gallons. Water usage from July 13, 2021, when the mandatory Stage 2 Water Conservation restrictions were implemented through July 28, 2021 dropped to an average of 637k gallons – a reduction of 10.5%. Compared to July 1 thru 28, 2019, the most recent year without any water restrictions, water usage was down July 1 thru 28, 2021 by 29%. This is a strong indication that declarations of water conservation requirements are effective in meeting the level of reduction sought by the City.

One source of reduction in usage is attributable to the City's decision to eliminate out of City water sales as of July 18, 2021. For the month of June 2021, outside water sales hit an all-time high of 745k gallons. This accounted for 3.6% of total water usage in June 2021. In comparison, in June 2020, outside water sales accounted for less than 1.0% of total usage or just 201k gallons. Outside water sales through July 18 were 652k gallons, an estimated 3.1% of the total demand for July 2021.

Water usage in summer of 2020 reflected a similar response to both the voluntary and mandatory water conservation restrictions. On August 10, 2020, the City Council asked for

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<sup>1</sup> <https://tidesandcurrents.noaa.gov/noaatidepredictions.html?id=9417426&legacy=1>

a voluntary reduction of 10% in usage. When compared to the prior year, August 2020 was down 12% from 2019. On August 31, 2020, a Stage 2 Water Emergency was declared and mandatory conservation restrictions targeting a 20% decrease were implemented, water usage dropped in September 2020 by 20% from September 2019.

The prior success of water conservation stages indicates that the City will be able to reduce usage during the Stage 3 Water Emergency by 20-30%. If this goal is not attained, the City Manager may consider recommending the Council implement a higher stage of water conservation.

### Stage 3 Water Emergency Conservation Restrictions

1. All Stage 2 restrictions shall continue to apply, except to the extent they are replaced by more restrictive requirements imposed by this subsection.
2. Landscape irrigation, including public and private streetscape landscaping (medians and frontage) and including drip irrigation, shall be limited to a maximum of one day per week.
  - a. Customers may irrigate only on Tuesdays from 12am to 9am and 6pm to 11:59pm.
  - b. No irrigation is permitted on Mondays, Wednesdays, Thursdays, Fridays, Saturdays and Sundays.
3. No water from the city water system shall be used for construction purposes such as dust control, compaction, or trench jetting, unless the use is approved by the City Manager.
4. Discontinued use of hot tubs and in-room spa tubs at hotels/motels and lodging establishments is strongly encouraged.

### Recommendation for Stage 3 Water Emergency

This is the worst water drought on record for the City of Fort Bragg. However, the City has prepared for this event by increasing water storage by more than 70% since the last major drought in 2015. Voluntary conservation measures were implemented on May 10<sup>th</sup> this year, earlier than any other year resulting in water usage for June and July being 24% lower than June and July of 2019. Finally, the City has arranged for additional supply to be available in late August and early September to supplement usage at the point when the Noyo River flows reach the lowest points of the year and pumping is disrupted by high tides. The City Manager has determined that a Stage 3 Water Emergency with water conservation restrictions targeting a 20-30% reduction in seasonal water use is appropriate taking into account the current availability of water from all sources.

Continue to Monitor Conditions

As we implement the Stage 3 Water Emergency, staff will continue to monitor the City's water situation closely. During August and September, tides above 6.0 feet become increasingly common and will interfere with the City's ability to pump water from the Noyo River. The installation of the Desalination-Reverse Osmosis Treatment System in early September should allow the City to continue to use the Noyo River during high tides but this is a new system and may require adjustments to implement. Water from the FBUSD well should also be available to subsidize the City's water supply but until we have that in production, there are still unknown factors. Additionally, we will track the Stage 3 Water Conservation Restrictions on daily water demand, to measure its success. In short, it is not possible to predict how each element in the City's water supply and usage will perform, thus close monitoring and flexibility is necessary to manage this year's severe water drought.

**RECOMMENDED ACTION:**

Adopt Resolution declaring a Stage 3 Water Emergency and implementation of Stage 3 Conservation measures, which target a 20-30% decrease in seasonal water usage from the most recent non-drought year (2019).

**ALTERNATIVE ACTION(S):**

1. Do not adopt Resolution.
2. Provide alternative direction to staff.

**FISCAL IMPACT:**

Reduced water usage will impact Water Fund revenues during the time frame customers practice water conservation, however, the water fund's reserves and fund balance can absorb the loss.

**GREENHOUSE GAS EMISSIONS IMPACT:**

Reduced water usage will have an incremental reduction in pumping and water treatment, which will result in a small decrease in the use of electricity and resulting greenhouse gas emissions.

**CONSISTENCY:**

N/A

**IMPLEMENTATION/TIMEFRAMES:**

Compliance with a Stage 3 water emergency would be immediate and if implemented, water usage should be reduced immediately.

**ATTACHMENTS:**

1. Resolution
2. Noyo River Flows Graphs
3. Notice of Public Hearing

**NOTIFICATION:**

N/A