

City of Willits Water System

Presented to Willits City Council – September 1, 2021

Current System Status

- **Reservoirs are at 63% of capacity**
 - Morris: 544 acre-feet
 - Centennial: 278 acre-feet
 - 2013 storage was 53% at the end of August
- **The Elias Well**
 - Current Groundwater Level: 1.5-feet below the ground surface (bgs)
 - Groundwater Level August 10, 2021: 0.8-feet bgs
- **The Long 20 Test Well**
 - Current Groundwater Level: 4.9-feet bgs
 - Groundwater Level August 10, 2021: 4.9-feet bgs
- **The Park Well monitoring wells**
 - Shallow monitoring well (30-feet in depth)
 - Screened from 10-30 feet bgs
 - Installed on August 10, 2021
 - Groundwater level: 9.0-feet bgs
 - Current groundwater level: 9.5 feet bgs
 - Deep monitoring well (95-feet in depth)
 - Installed on August 31, 2021
 - Screened from 75-95 feet bgs

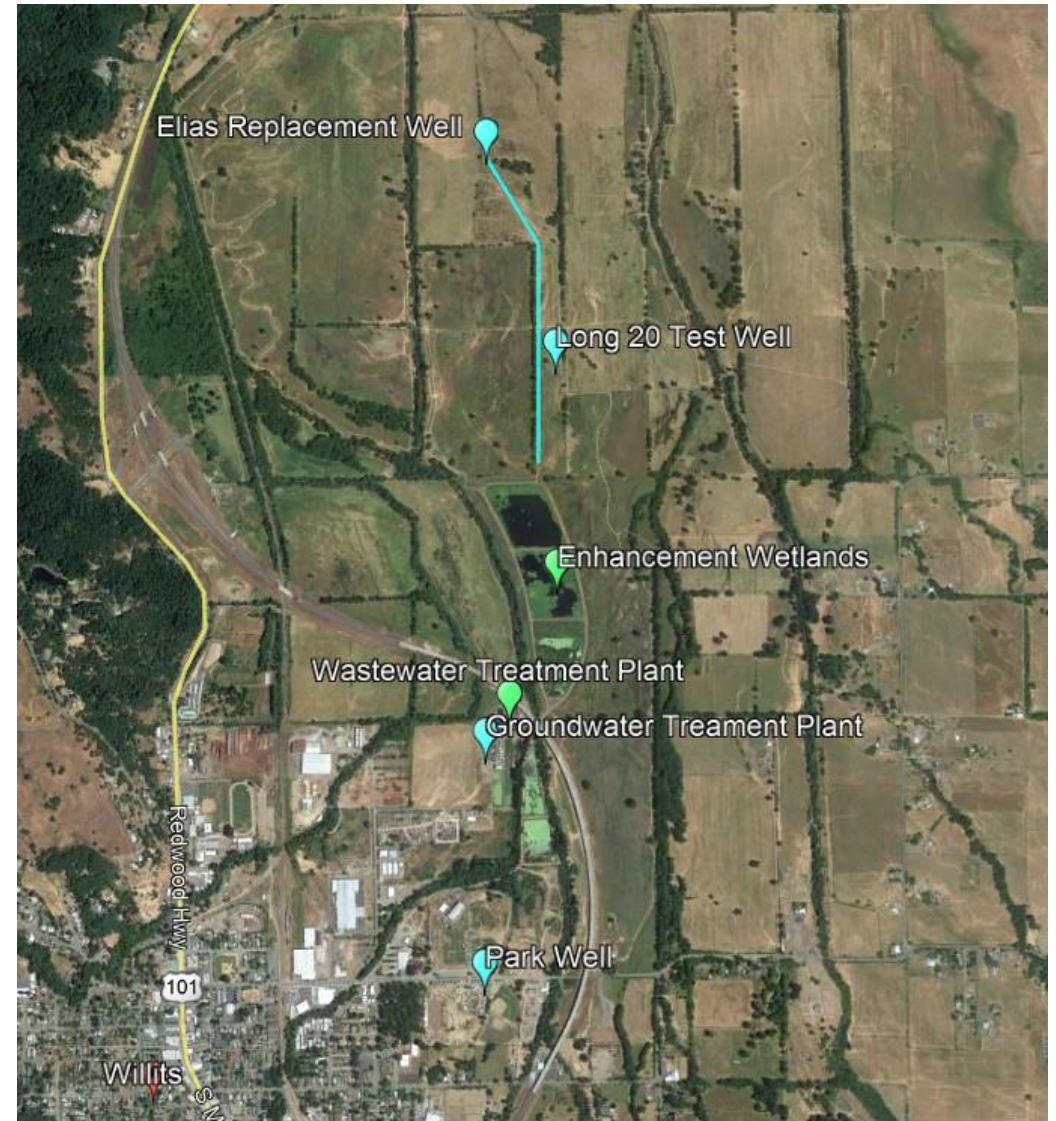
Current System Status

Groundwater Well Usage

- The Elias Well is connected to the groundwater treatment plant and currently under repair.
 - Up to one month from 9/1/2021 for repairs to be completed
- The Long 20 Test Well is not connected to the groundwater system
- The Park Well Uses:
 - Irrigation of the Recreation Grove Park
 - Irrigation of the ballfields
 - Truck Fill Station

Well and Groundwater Treatment Plant Locations

Northern Portion of The Little Lake Valley (outdated aerial)



Proposed Groundwater Project

SCOPE OF THE PROJECT

- Replace 3600 feet of water main between the Elias Well and the Enhancement Wetlands
- Connect the Long 20 Test Well to the groundwater system
- Install a 200,000-gallon clear well at the groundwater treatment plant for chlorine contact time and pressure control

Prior City Water Usage

- **Surface Water Treatment Plant Production**
 - 2019: 269.4 million gallons (827 acre-feet)
 - 2020: 234.0 million gallons (718 acre-feet)
 - 2021: 160.0 million gallons (491 acre-feet) (as of 9/1/2021)
- **Groundwater Treatment Plant Production**
 - 2019: 13 Million Gallons (41.7 acre-feet) – primarily used during flushing of the distribution system.
 - 2020: Not used
 - 2021: Not used to date
- **Park Well**
 - 2019: 1.1 million gallons (3.4 acre-feet)
 - 2020: 8.2 million gallons (25.0 acre-feet)
 - 2021: 8.6 million gallons to date (26.5 acre-feet)
 - Revenue is used to cover parks and recreation expenses
- **Willits Wastewater Treatment Plant**
 - Type of Water: Treated Wastewater
 - Irrigates fields in the north end of the Little Lake Valley
 - Irrigation is regulated by the City's National Pollution Discharge Elimination System (NPDES) Permit
 - Quantity: 450,000 – 500,000 gallons per day or approximately 220-acre feet irrigated annually

Water Storage Capacity Summary

- Little Lake Valley Estimated Groundwater Storage Capacity
 - Cardwell (1965): 50,000 acre-feet (10-100 feet bgs)
 - DWR (1965): 91,600 acre-feet (10-200 feet bgs)
 - 41,600 acre-feet (100-200 feet bgs)
 - Farrar (1986): 35,000 acre-feet (depth to 100 feet bgs)
- City of Willits Surface Water Storage Capacity
 - Morris Reservoir: 662 acre-feet
 - Centennial Reservoir: 638 acre-feet
 - Total: 1,300 acre-feet
- Groundwater storage capacity is significantly greater than surface water storage capacity.

Water Usage as a Percentage of Capacity

- **Surface Water**
 - 2019: 827 acre-feet = 64%
 - 2020: 718 acre-feet = 55%
 - 2021: 491 acre-feet = 38% (estimate as of 9/1/2021)
- **Groundwater Treatment Plant Production***
 - 2019: 41.7 acre-feet = 0.1%
 - 2020: Not used
 - 2021: Not used as of 9/1/2021
- **Park Well***
 - 2019: 3.4 acre-feet = 0.01%
 - 2020: 25.0 acre-feet = 0.06%
 - 2021: 26.5 acre-feet = 0.06%
- *Using a storage capacity of 41,600 acre-feet from 100-200 feet bgs based on storage capacity estimates from Cardwell and DWR.

