

# Carson City and the Marlette Lake Water System

Jan 23, 2024



# Drinking Water System Overview

- 350 miles of pipeline, 16 Pressure zones, 13 Booster Pump Stations, 16 Storage Tanks, 60 PRVs
- 18,500 accounts
- 50-75% Groundwater (30 wells)
  - 1 Arsenic Treatment Plant
  - Many blending sites for Arsenic, Manganese and Uranium
- 25-50% surface water usage (Ash, Kings and Marlette-Hobart) and 2 River Induction Wells
- Interconnections with other Counties and Towns
  - 5 MGD Source from Town of Minden (also serving Douglas Co. and Indian Hills GID)
  - Emergency intertie with Lyon County at HWY 50 Tank

# Surface Water History in Carson City

- April 6<sup>th</sup>, 1869, an ad appeared in the Daily Appeal which was placed by Edw. Sweeney, the proprietor of the Carson City Water Works stating “The Carson City Water Works having laid his pipes through the principal streets of the City is now prepared to serve shops, stores, hotels, restaurants, private residences, &c. with a constant and ample supply of pure soft water from the cold springs of the Sierras. Rates Moderate.”
- Original water system was fed by Quill Ranch Ponds which was fed by Kings Creek and Springs.
- Almost 155 years later we are still using that source of water.
- Curtis Wright Corporation: Purchased by State June 23, 1963 for \$1.65 million. Renamed Marlette Hobart Water System. State owned system started supplying drinking water to Carson City State facilities.
- In the late 80’s discussion and ultimate agreement for State to abandon their water system in Carson City serving State buildings, and be served by Carson City Water Utility. In exchange for serving State customers, agreement included selling raw MLWS water to the City at a wholesale rate.
- Carson City opened the Quill Water Treatment Plant in October of 1992 to treat MLWS, Ash Creek, and Kings Creek water.

# Carson City Quill WTP Water Sources



# Need for Quill WTP Upgrades

- Conjunctive management of resources: Use surface water when available in order to use groundwater in dry times
- Demand and System Water Quality Driven, blends with Groundwater
- Meet future Demands. 8 MGD of extra supply capacity to meet build out demand of 80,000 population at 34 MGD
- Current plant rated for 4.5 MGD and can only produce 1 MGD due to water quality standards and degradation of surface water sources
- Over 30 years old
  - Direct Filtration with Diatomaceous Earth
  - No Pre-treatment
- Not able to treat most of our surface water sources with current filtration process
  - Main issues include: Turbidity limited to 6 NTU, DBP's, LT2 (cryptosporidium), TOC's, Color

## Quill WTP Upgrades

- New plant will be a packaged Filtration system with UV for disinfection
- Total cost of \$17 million.
- Currently in final design, construction anticipated fall of 2024 with completion in late 2025.

# Where we are today

- Currently working with State Buildings and Grounds to finalize a long-term raw water purchase agreement that will meet Carson City and Storey County's current demand as well as future demand.
- During the Marlette Dam rehabilitation project, Carson City will be dependent on other water sources to meet water demand.
- The City is currently using water that we are unable to treat at Quill for the following:
  - Exchanges with agricultural users for better quality Creek water
  - Vicee Recharge Program
  - Transfer unused water to Carson River Induction Wells

# Questions?

