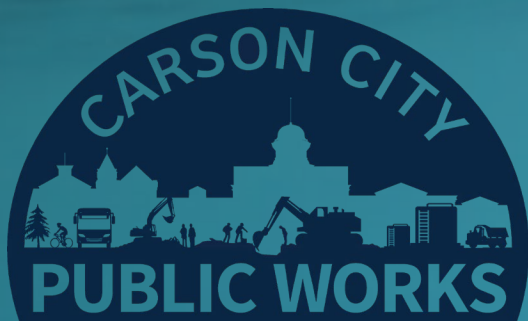




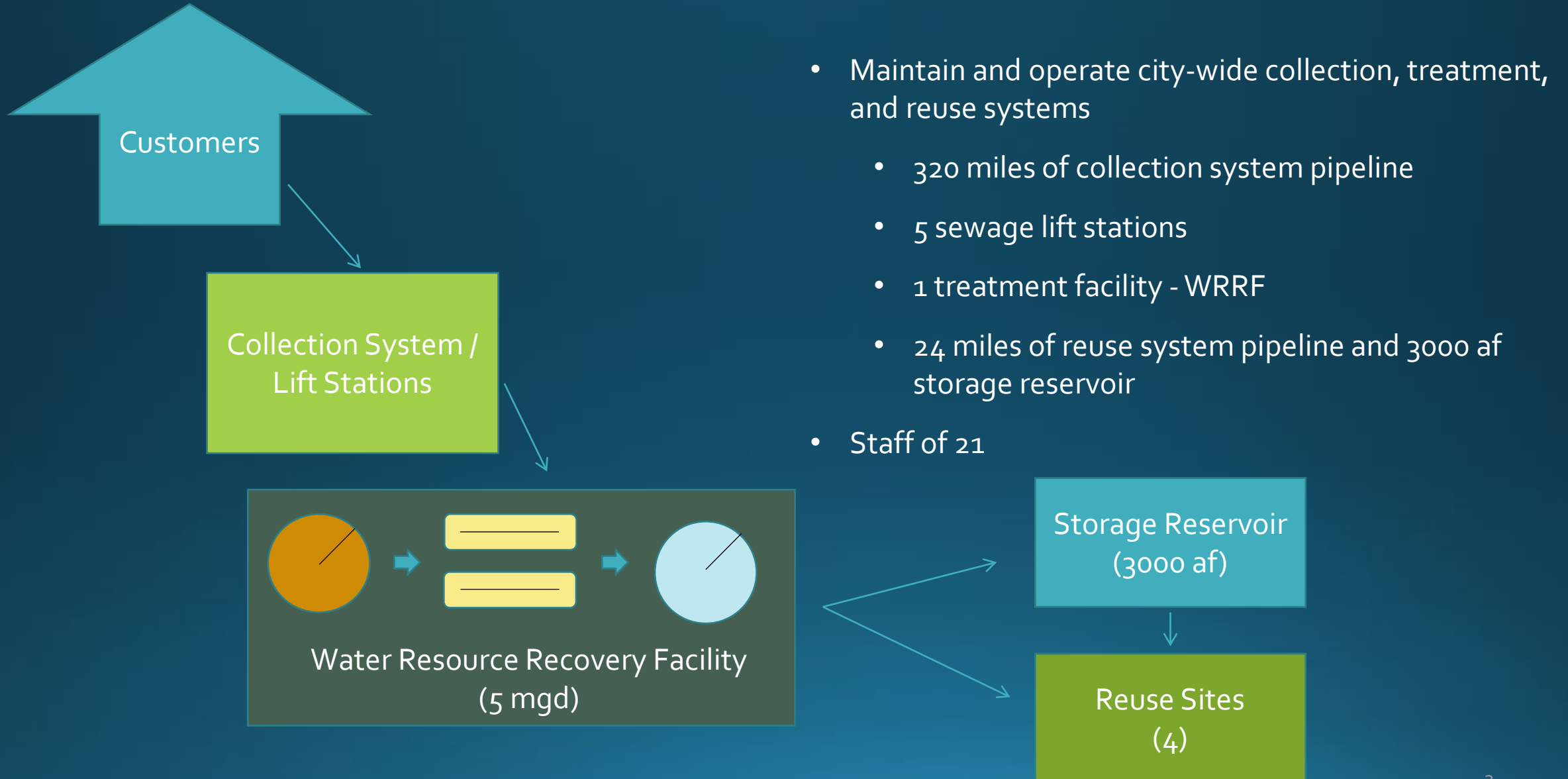
June 29, 2022

# Carson City Water and Wastewater Capacity Analysis Update

## Growth Management Commission

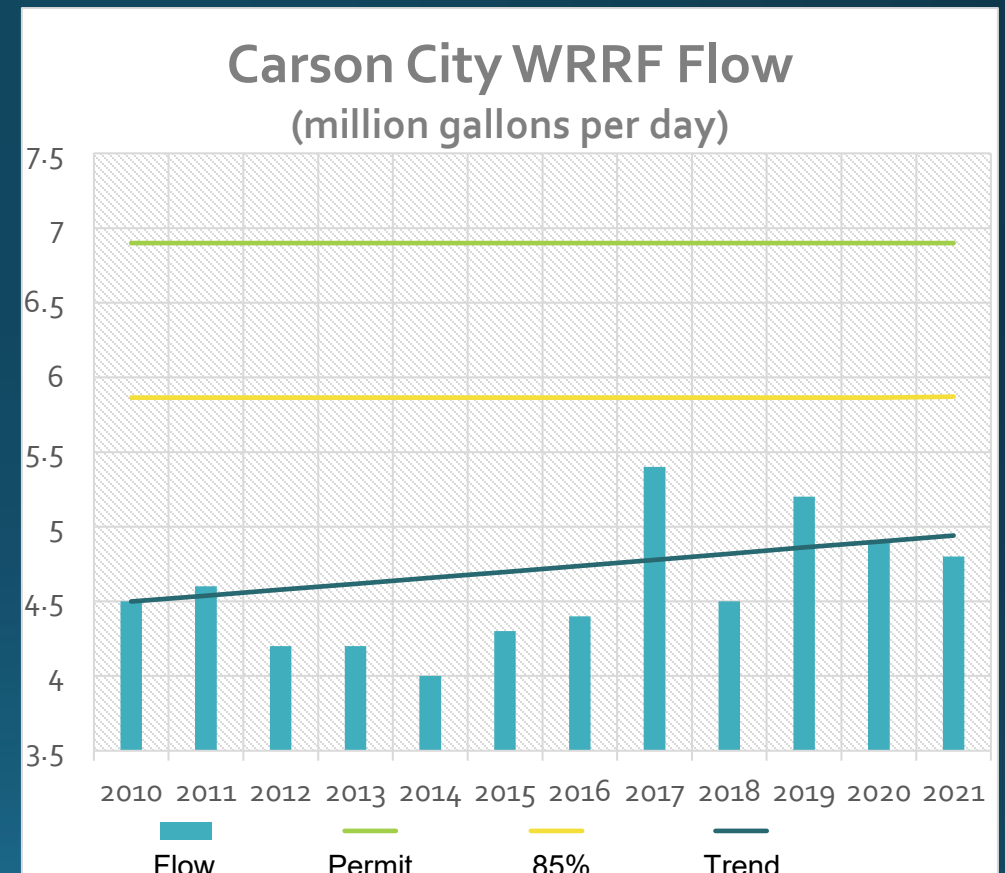


# Wastewater System Overview



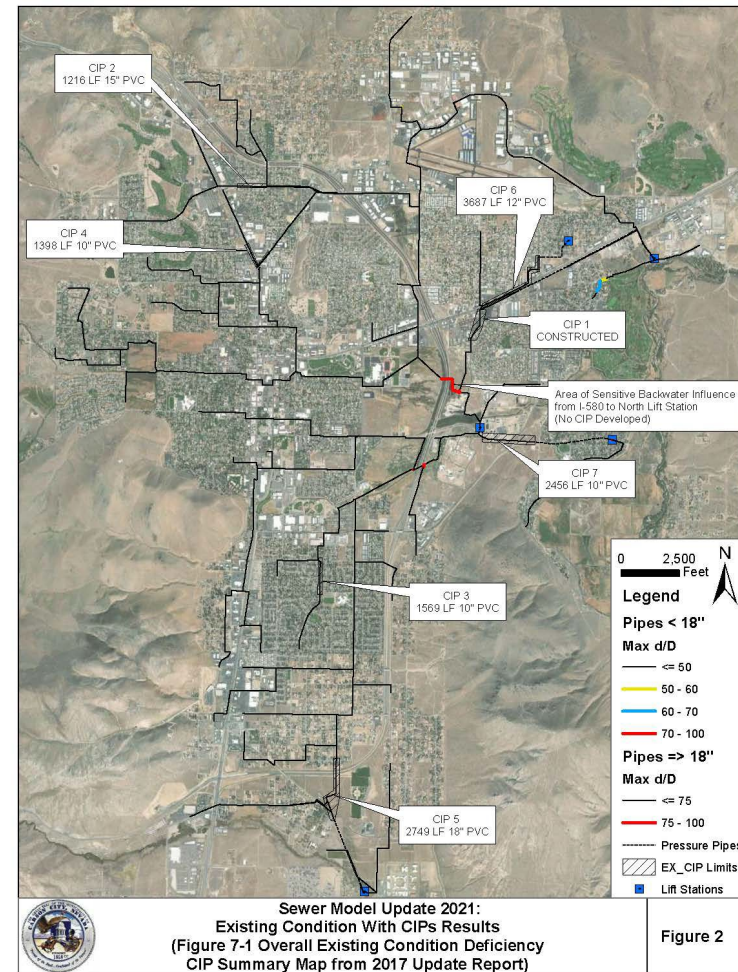
# Wastewater Treatment Capacity

- Currently treating approximately 5 mgd
  - Influenced by growth, moisture, water rates.
- WRRF permitted for 6.9 mgd
- Flows trending upwards at approximately 0.9%
- Facility planning for next upgrade triggers:
  - 85% of permitted flow rate
  - Stricter Permit limits



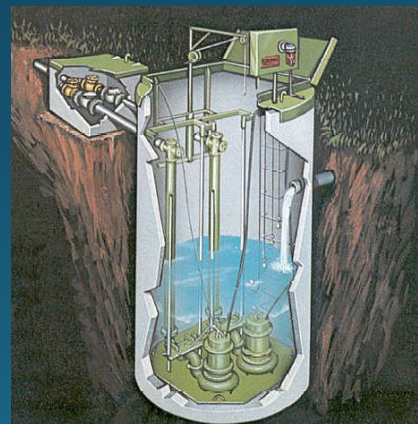
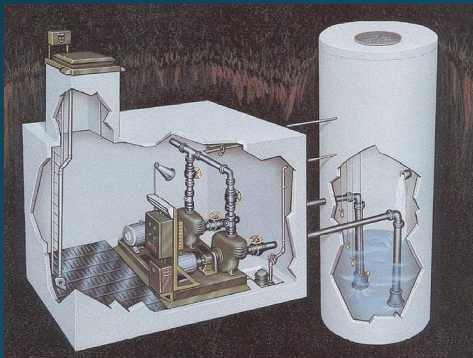
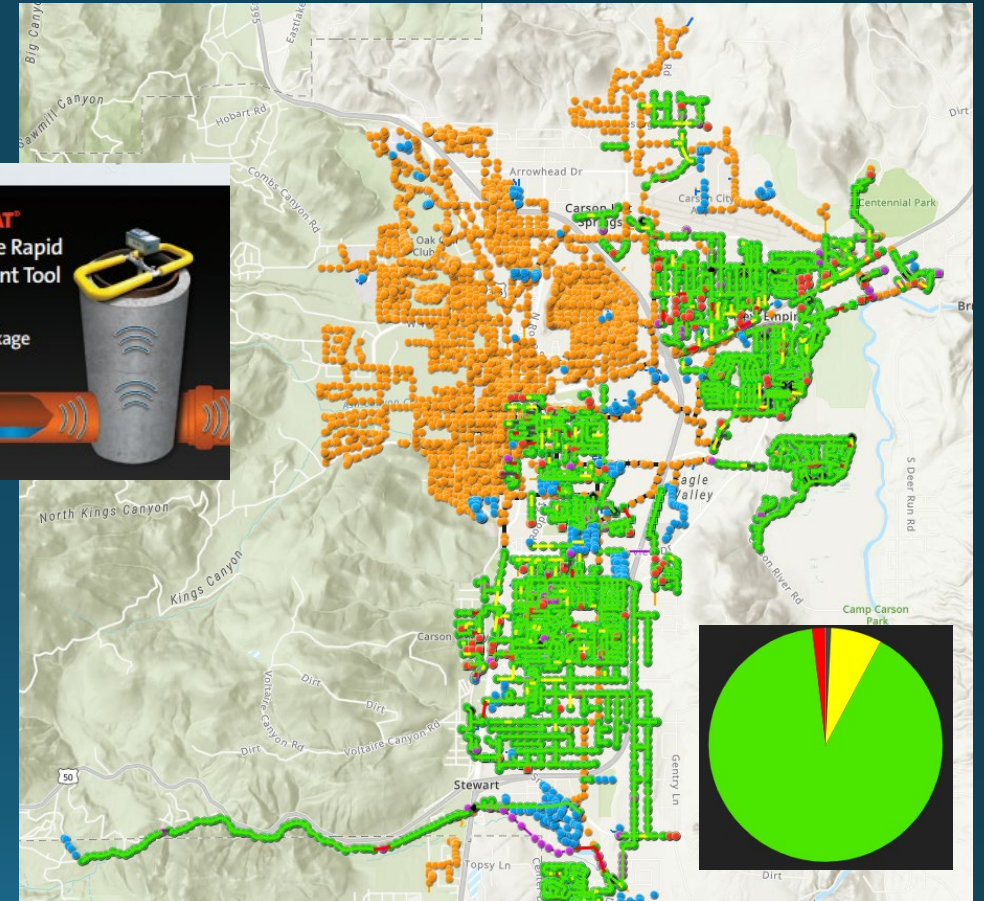
# Collection System Capacity

- Collection system Master Plan
  - Updated in 2021
- Buildout based model
  - Land use data
  - Lift station updates
  - Sewer system improvements
- CIP's identified for existing and future condition deficiencies

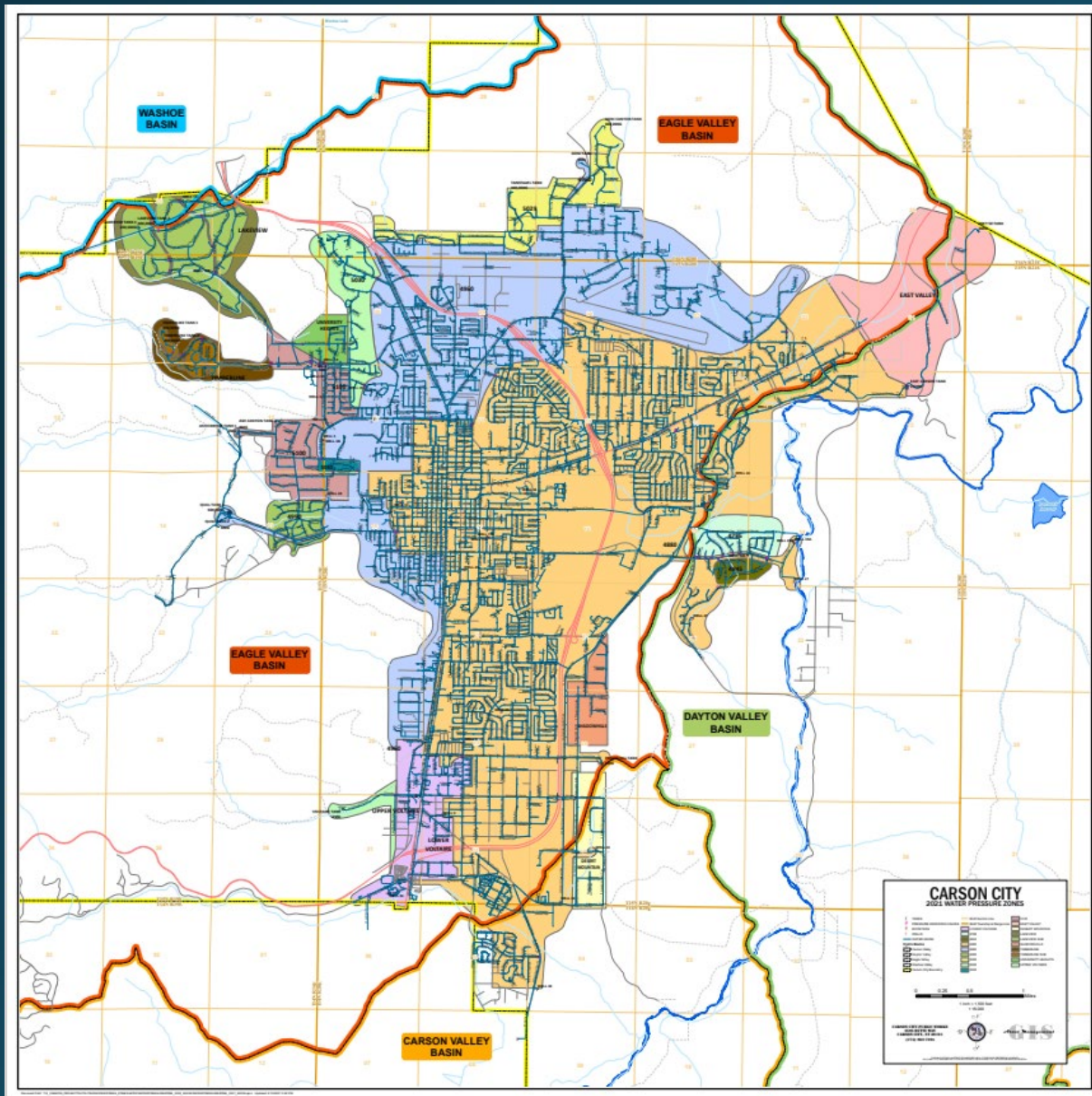


# Asset Management and Projects

- Collection system Rapid Assessment
  - Provides quick blockage-based ranking
- WRRF Electrical upgrades
- Lift Station upgrades
- Pipeline Replacement and Rehabilitation

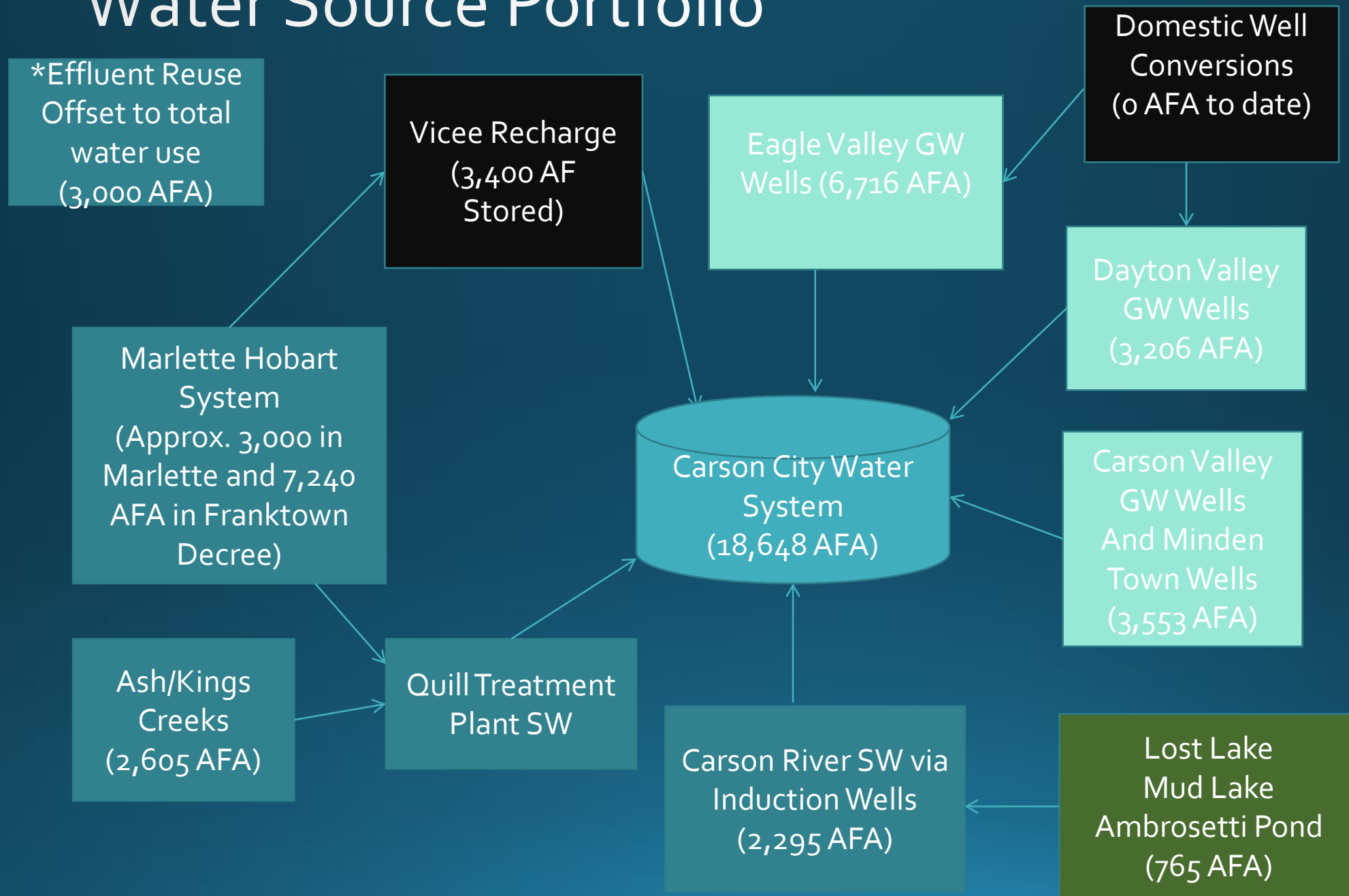


# Drinking Water System Overview

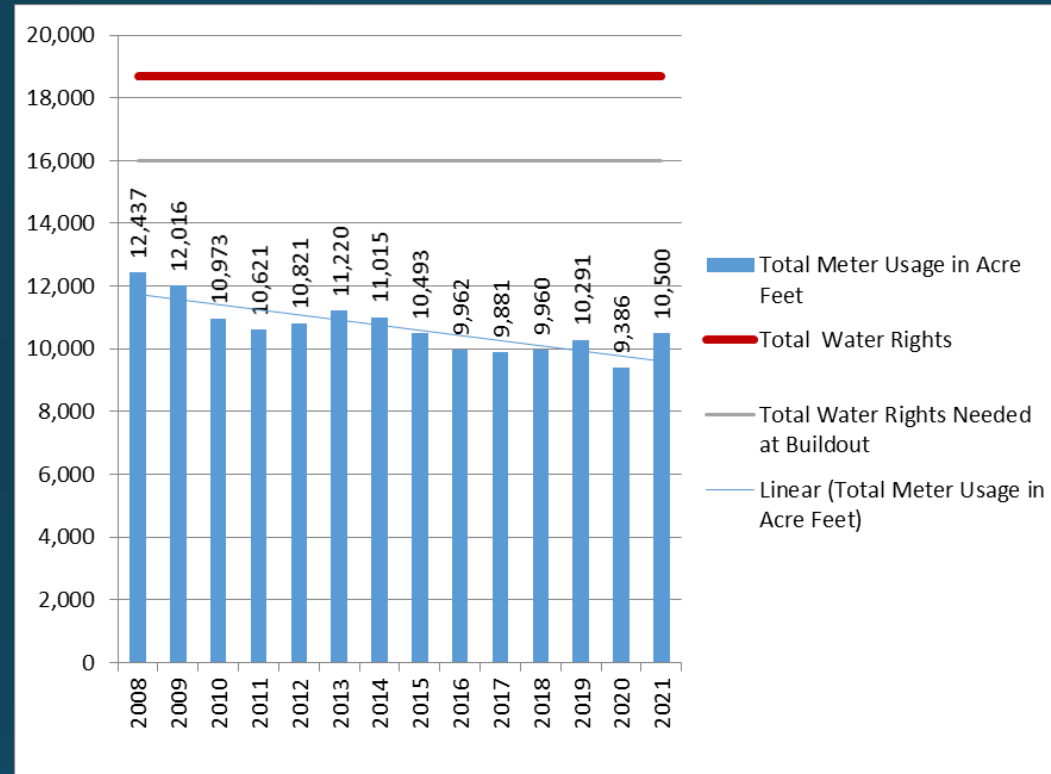


- Maintain and operate complex water system
  - 350 miles of pipeline, 16 Pressure zones, 13 Booster Pump Stations, 16 Storage Tanks, 60 PRVs
- Groundwater (28 wells), 2 River Induction Wells and surface water usage (Ash, Kings and Marlette-Hobart)
- Quill Water Treatment Plant and Arsenic Treatment Plant
  - Blending Sites as well
- Interconnections with other Counties and Towns
  - Transmission Main System
- ASR and Vicee Recharge Systems
- New Permit to Transfer unused surface water to River Induction Wells
- 20 licensed system operators working 24/7

# Water Source Portfolio



# Water Usage/ Demand Summary

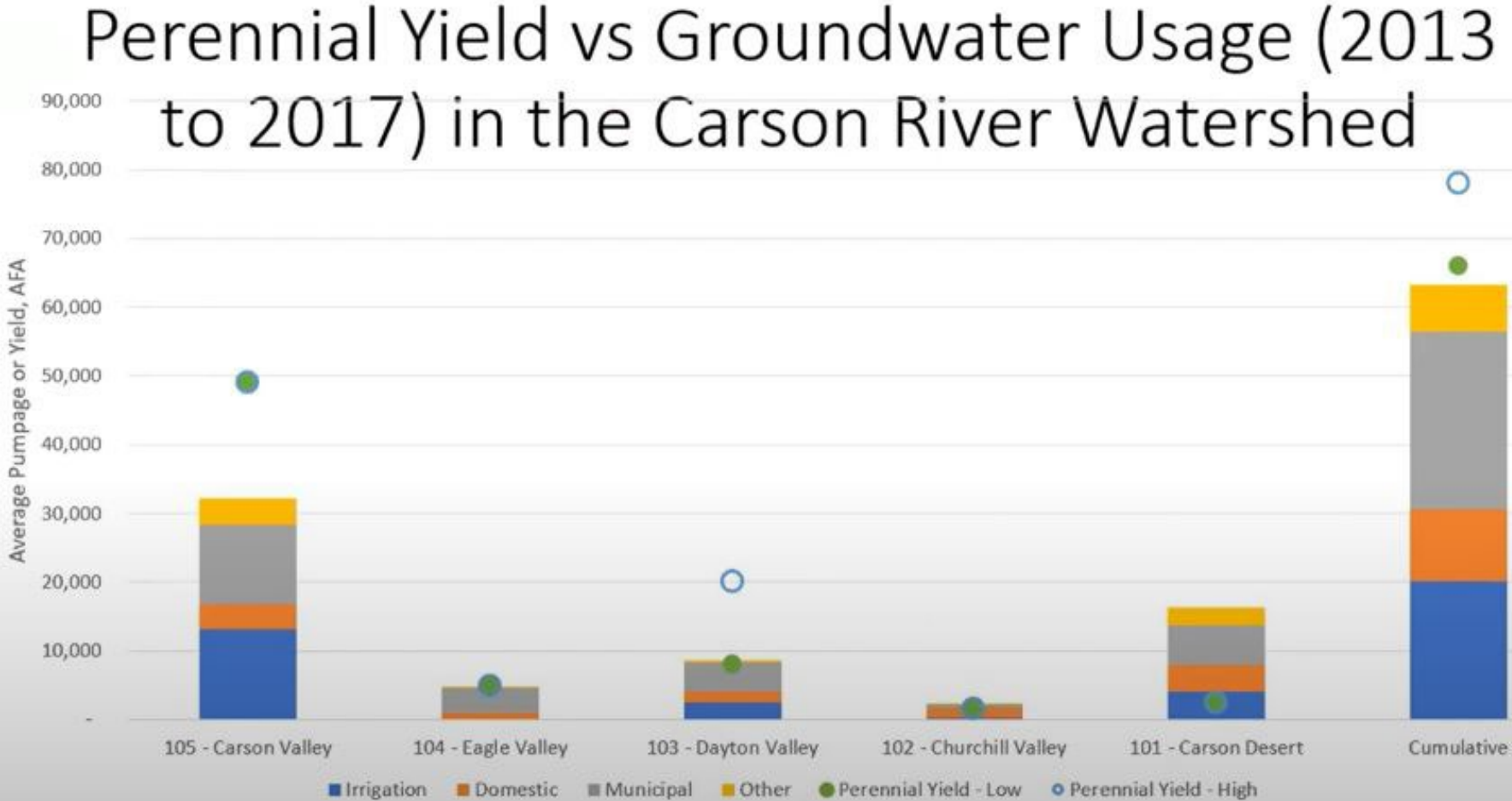


FY Water End User Metered Usage

- Buildout Timeframe- Population of 80,000 between 2055 and 2085
- Increase annual water usage by 5,000 ac-feet at buildout (< current available water rights)
- Increase production by 8 MGD to meet buildout demand w/ 20% buffer



# Carson River Watershed Pumping



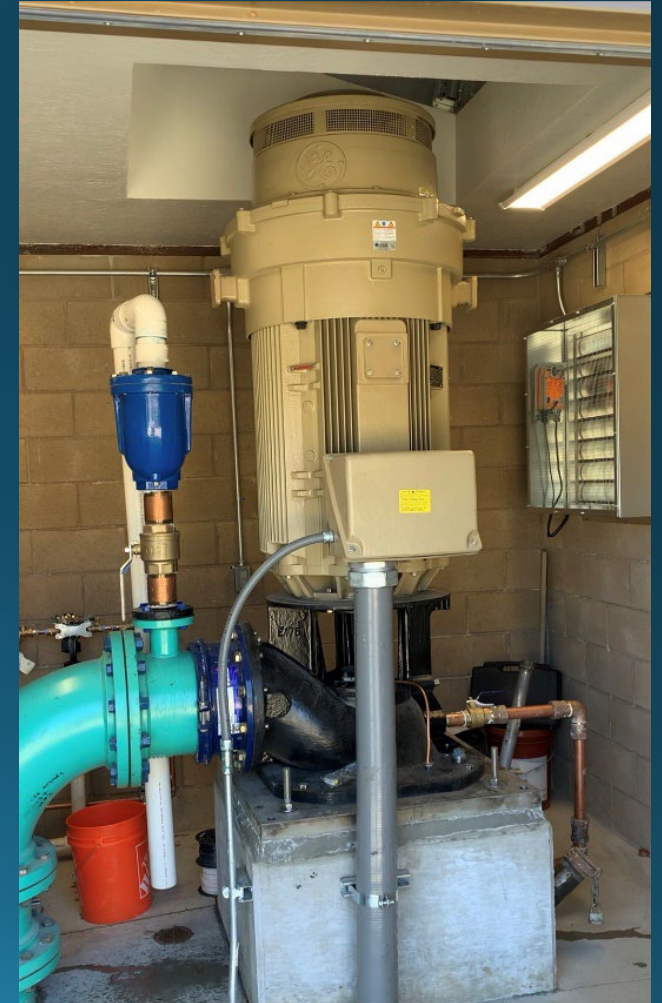
# Water System Improvements and Studies

- Waterline Replacement CIP
- 4 New Standby Generators at Wells
- Studies Completed, Projects/Agreements Underway
  - Lakeview Timberline Booster Pump Station Review
  - Iron and Manganese Study
  - Marlette Demand Study
- Maintenance and Rehabilitation
  - Well Rehabilitation Program
    - 2 per year
  - Tank Rehabilitation Program
    - 1 every 2 years
  - PRV Rehabilitation Program



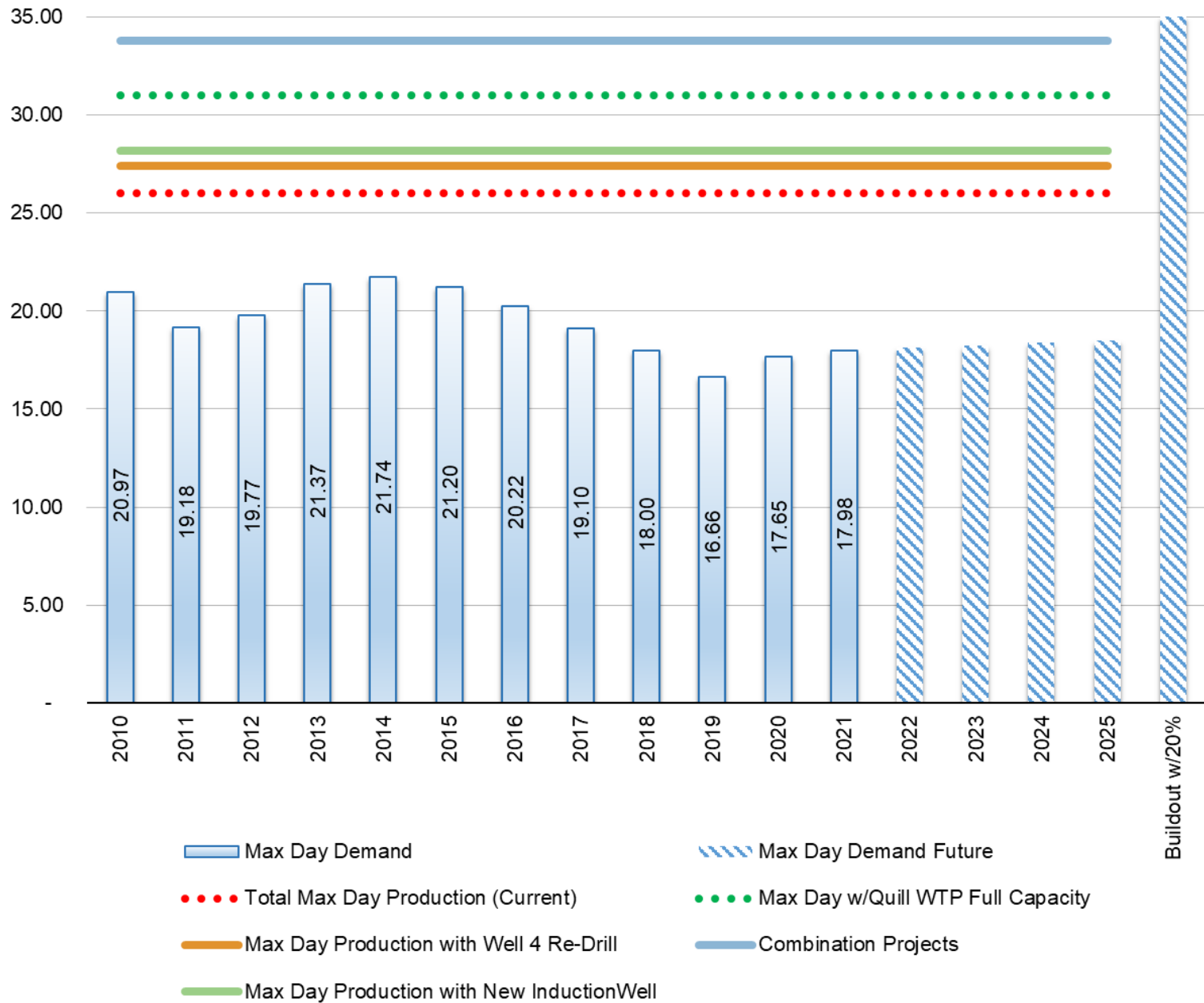
# Projects related to System Efficiencies, Redundancy and Future Demand

- East/West Transmission Main and Booster Pump Station – Final Phase 2B (Carson City)
  - Completed 2021 Required for System Resilience (moving imported water to the entire system)
- Well 3 Re-Drill (Double the Capacity)
  - Completed 2021 (added 1.87 MGD to existing total capacity)
- Quill WTP Improvements 4-5 MGD Increase
  - Design is underway by Lumos and Jacobs Engineering.
  - Conjunctive Use, Demand, and Water Quality Driven
- Well 44 Back online June 2022 (335 gpm)
- Well 38 Summer of 2023 (300 gpm)
- Well Re-Drill



New Well 3B

## Carson City Max Day Demand (Million Gallons per Day) vs. Total Production (MGD)



# Water and Wastewater Conclusion



- Complex and dynamic water wastewater systems
- Diverse water portfolio
- One Water in Carson City
- Secured water rights for the future in healthy basins
- Strategic, smart and resilient plan to increase production, improve system inefficiencies and redundancy