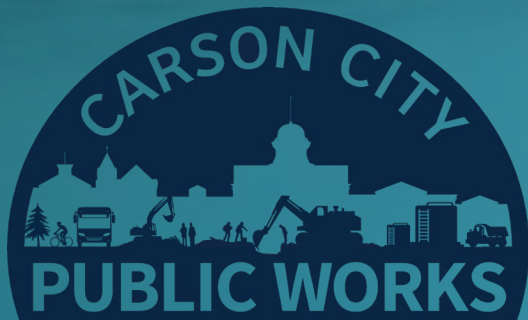




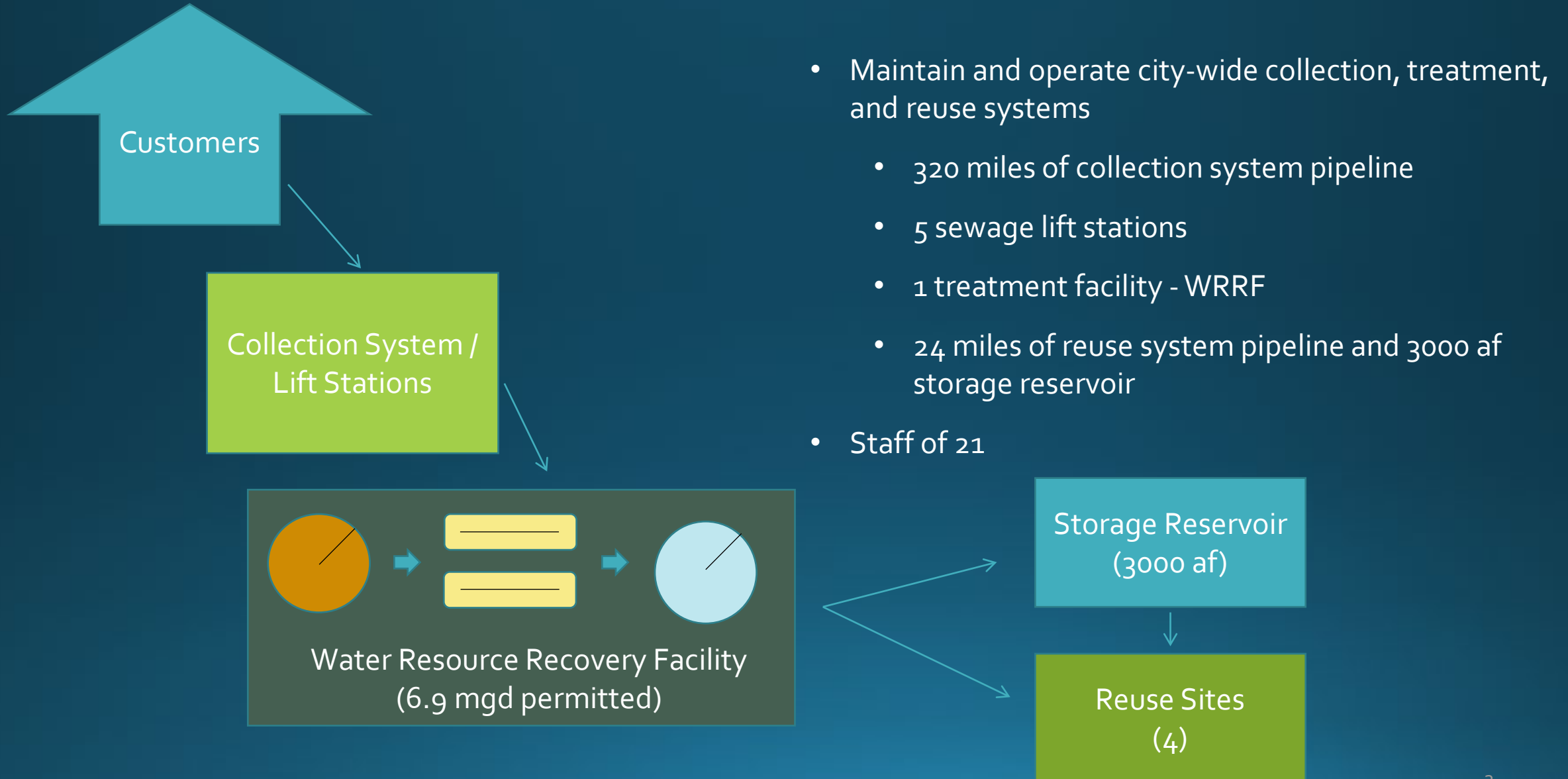
May 31, 2023

Carson City Water and Wastewater Capacity Analysis Update

Growth Management Commission

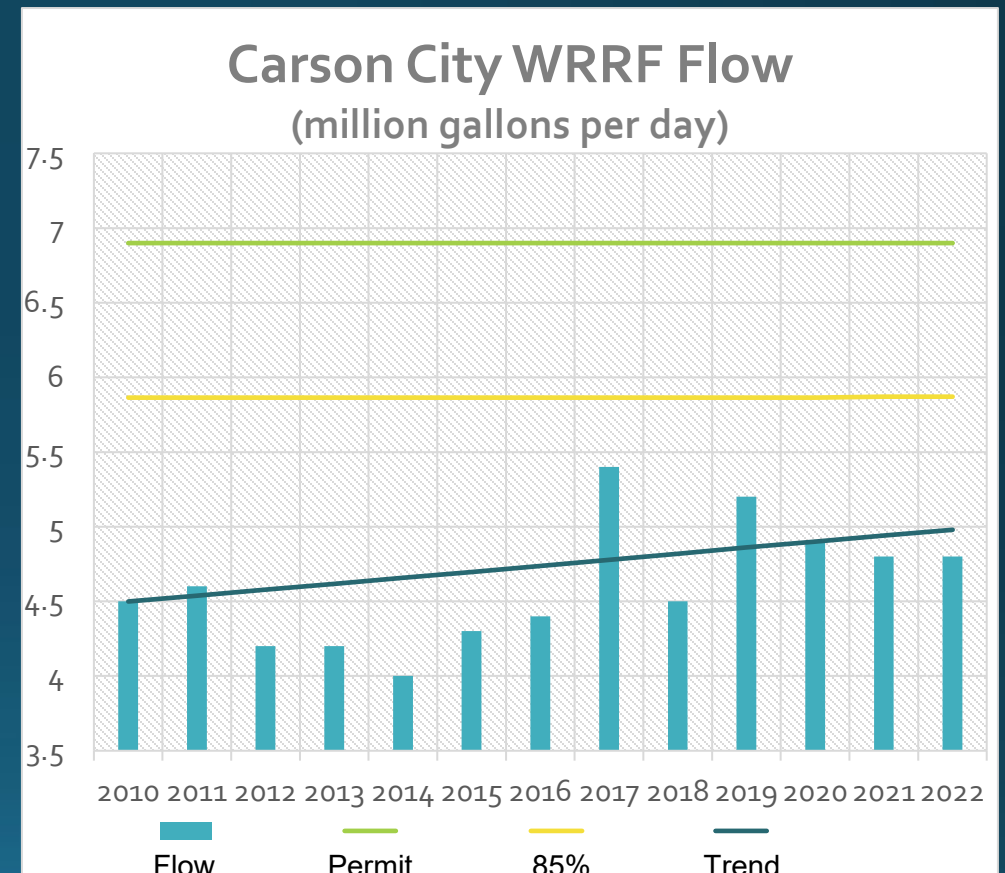


Wastewater System Overview



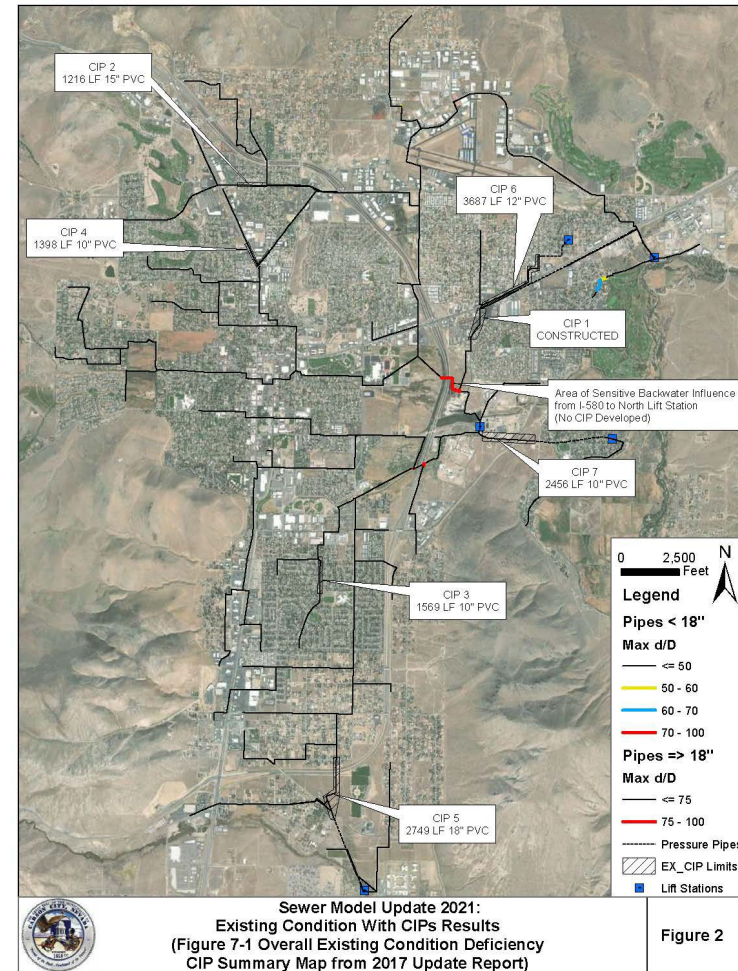
Wastewater Treatment Capacity

- Currently treating approximately 6 mgd
 - Influenced by growth, moisture, water rates.
 - Record wet weather this spring
- 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



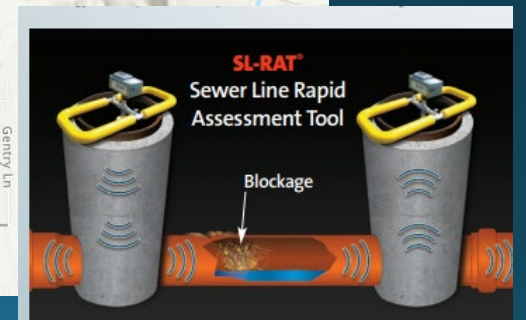
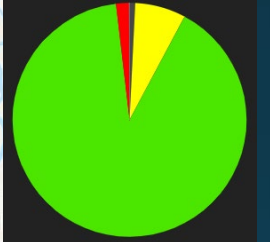
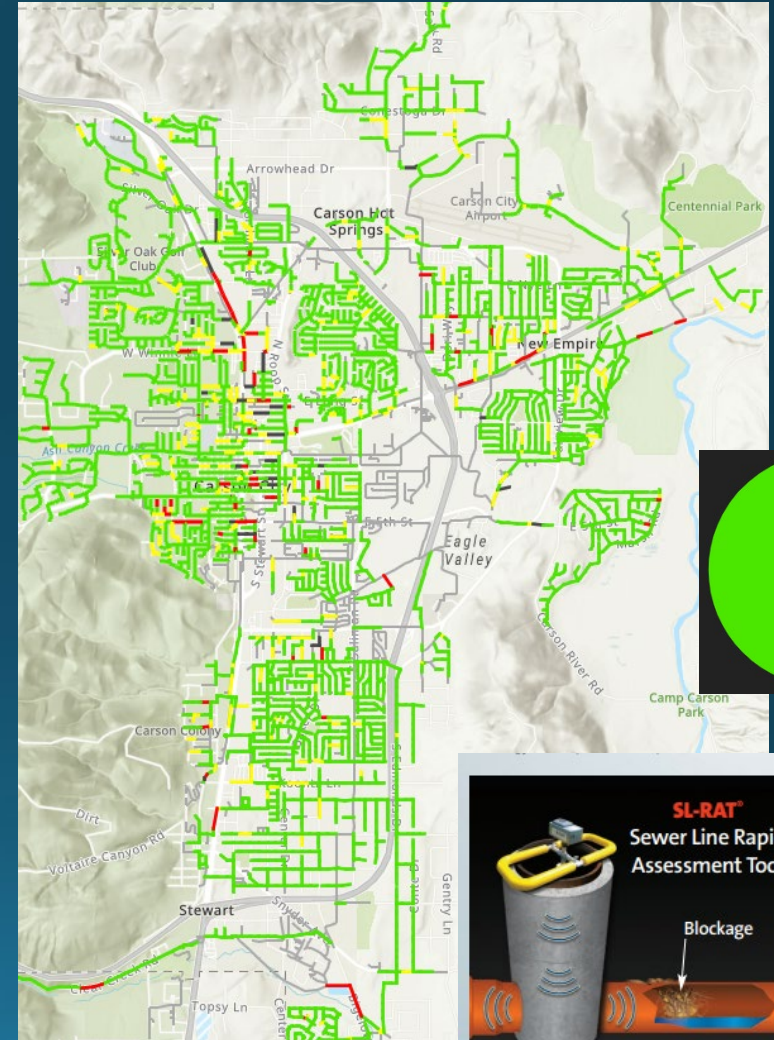
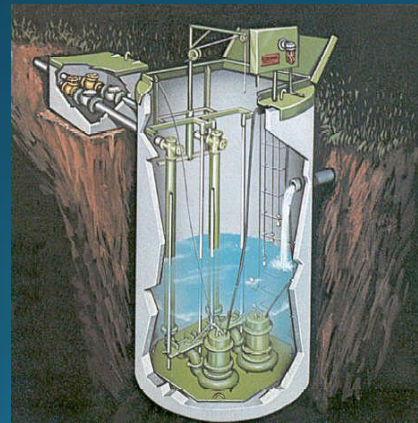
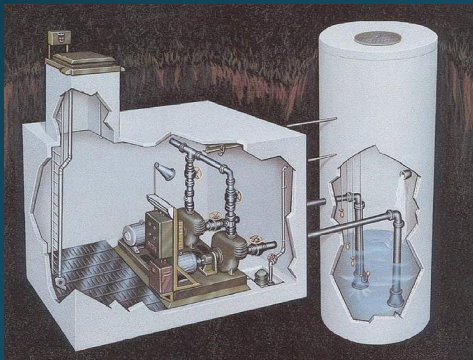
Collection System Capacity

- 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

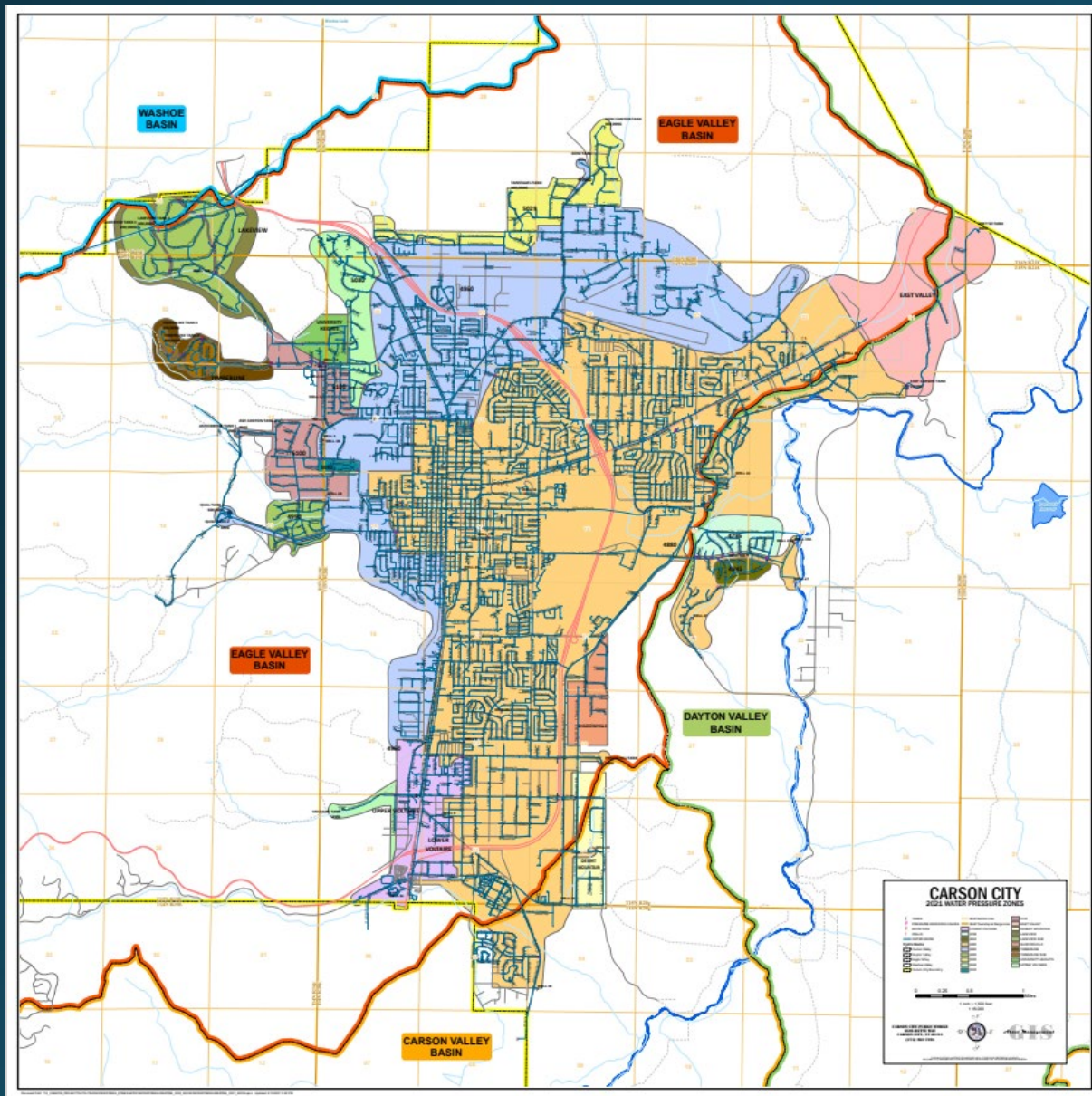


Asset Management and Projects

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

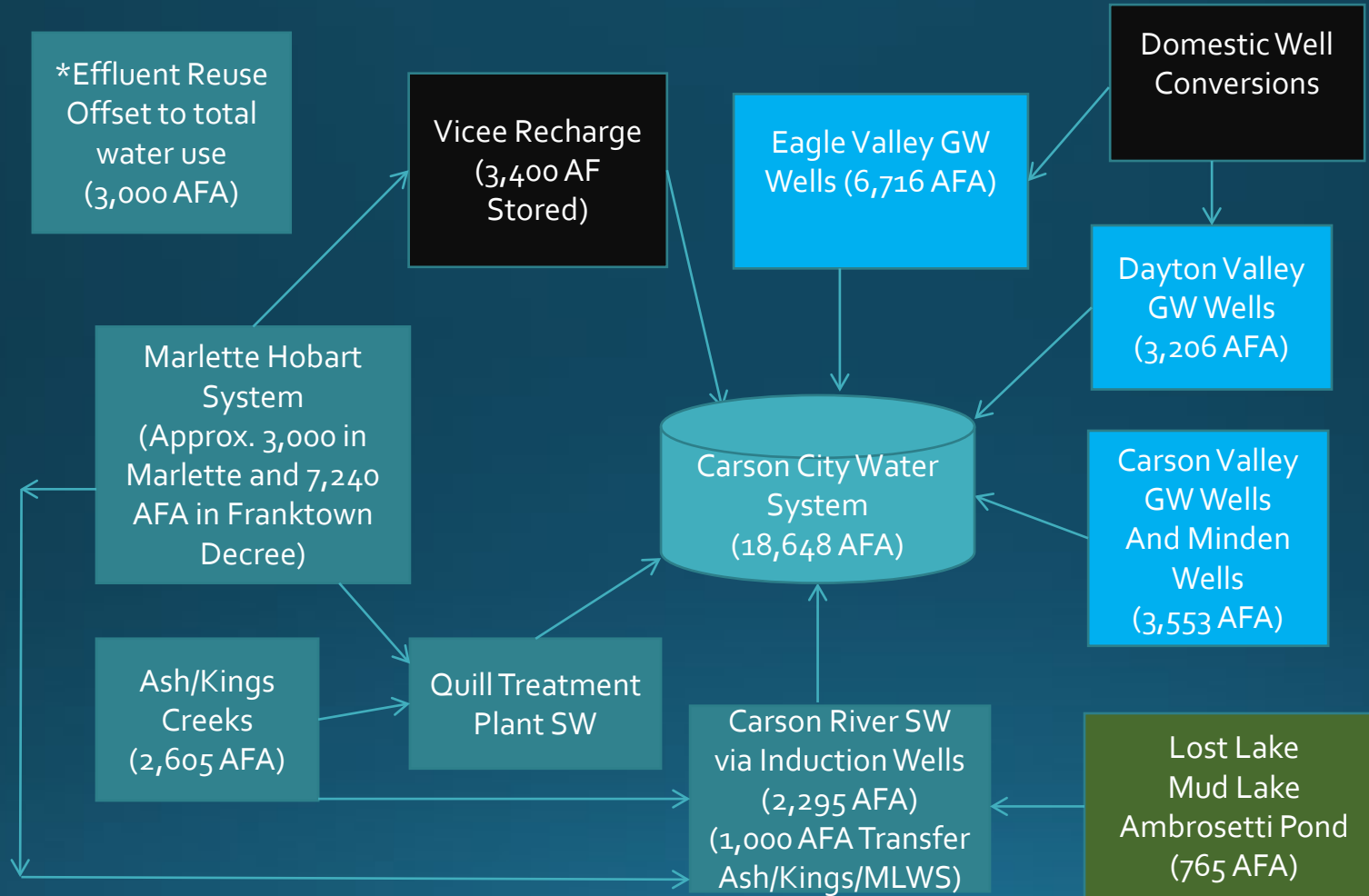


Drinking Water System Overview

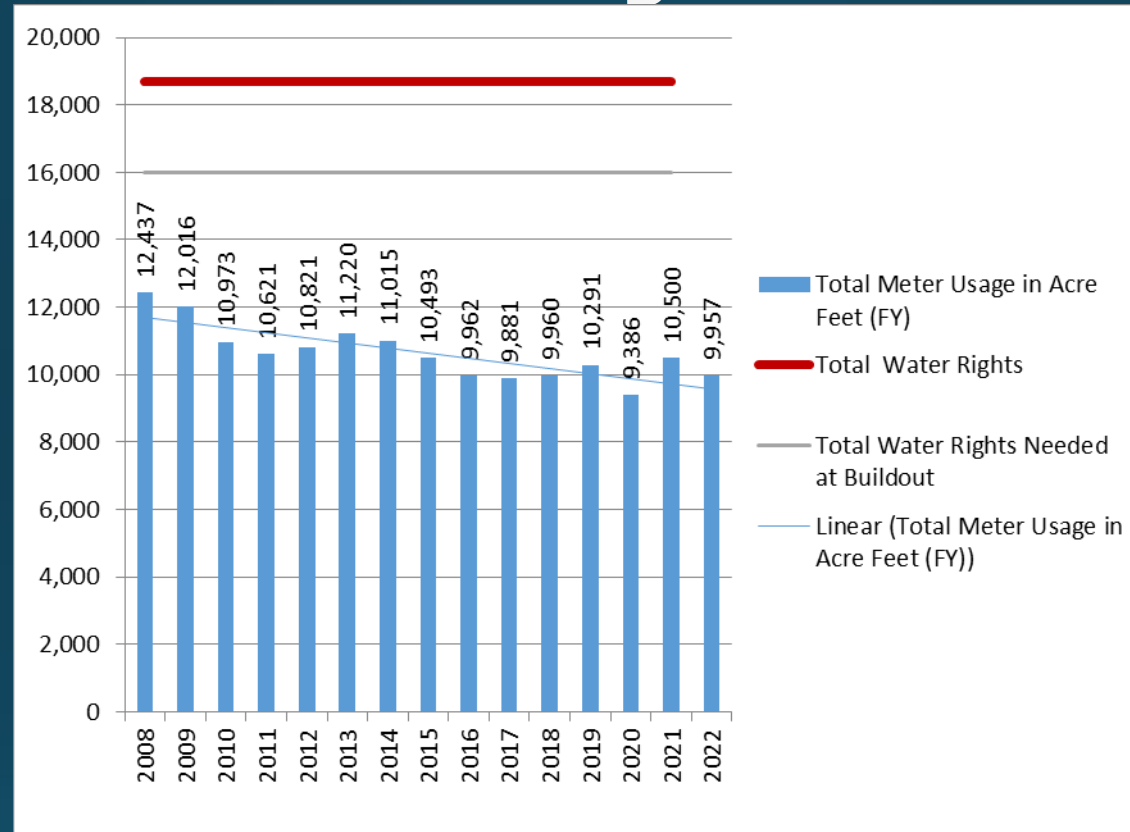


- Maintain and operate complex water system
 - 350 miles of pipeline, 16 Pressure zones, 13 Booster Pump Stations, 16 Storage Tanks, 60 PRVs
- Groundwater (28 wells), 2 River Induction Wells and surface water usage (Ash, Kings and Marlette-Hobart)
- Quill Water Treatment Plant and Arsenic Treatment Plant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

Water Source Portfolio



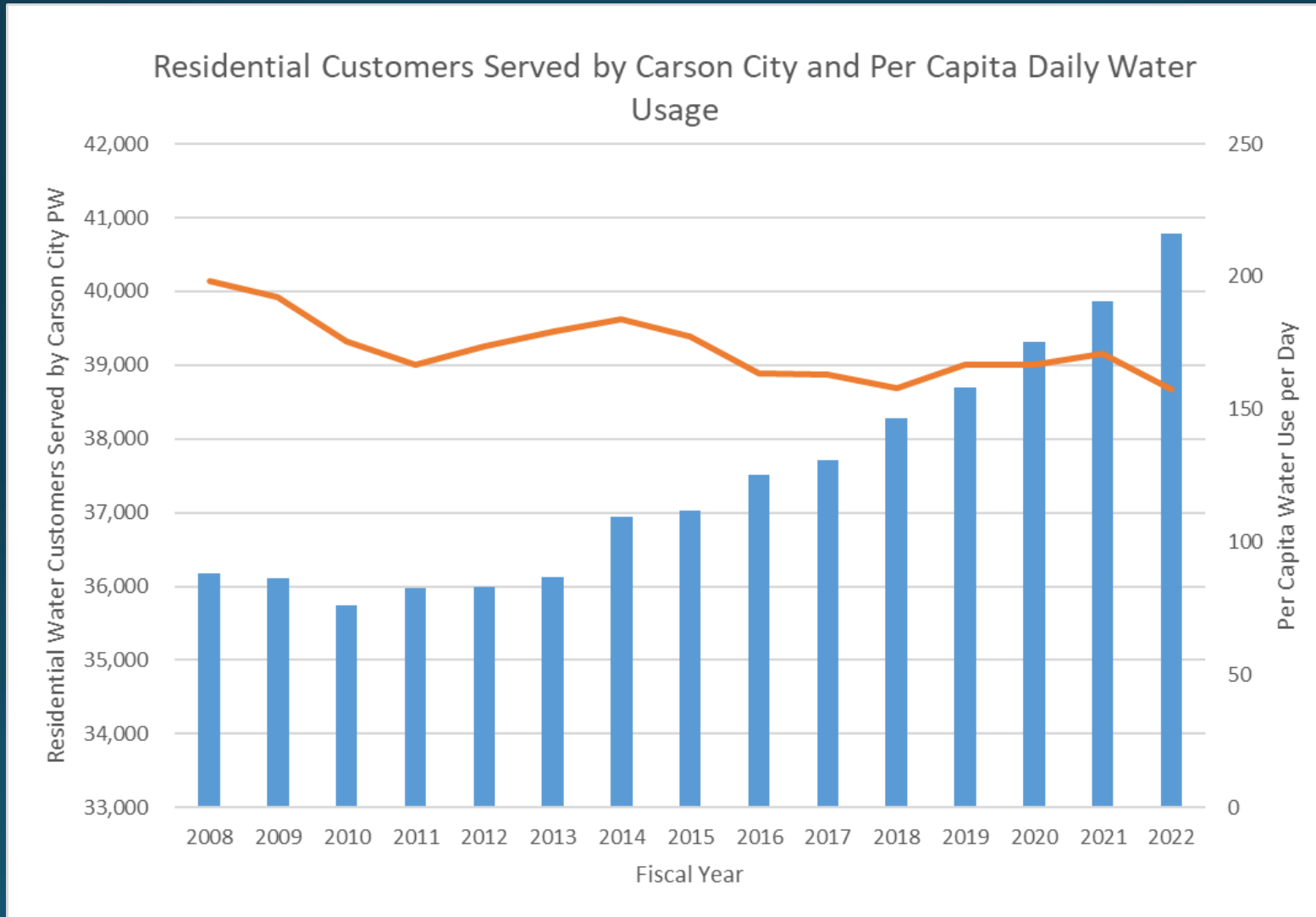
FY Metered Water Usage/ Demand Summary



FY Water End User Metered Usage in Acre-Feet Annually (AFA)

- ⦿ Buildout Timeframe- Population of 82,000 between 2055 and 2085
- ⦿ Increase annual water usage by 5,000 ac-feet at buildout (< current available water rights)
- ⦿ Increase production by 8 Million Gallons Per Day (MGD) to meet buildout peak day demand w/ 20% buffer

FY Metered Water Usage/ Demand Summary



Water Projects/Studies Updates

- Water Capital Projects

- Current Water Projects in Construction

- Well 24, 48, 53, 41B winter rehabs are completed this year

- Paradise View Pressure Regulating Station Preventative Replacement

- Quill WTP Upgrade Update

- Water Studies

- Working on database that identifies material type for City/Public water laterals per the new Revised Lead and Copper Rule. Due date is October 2024.

- Updating our Carson City Source Water Protection Plan with RCI

- Updating our Water Model with Atkins prior to our Water Resources Plan Update.

- Trying out 25 AMI meter transponders. Automatic 15 minute reads to billing. Just have to change out transponder.

Well 48 Rehab



Well 53 Rehab

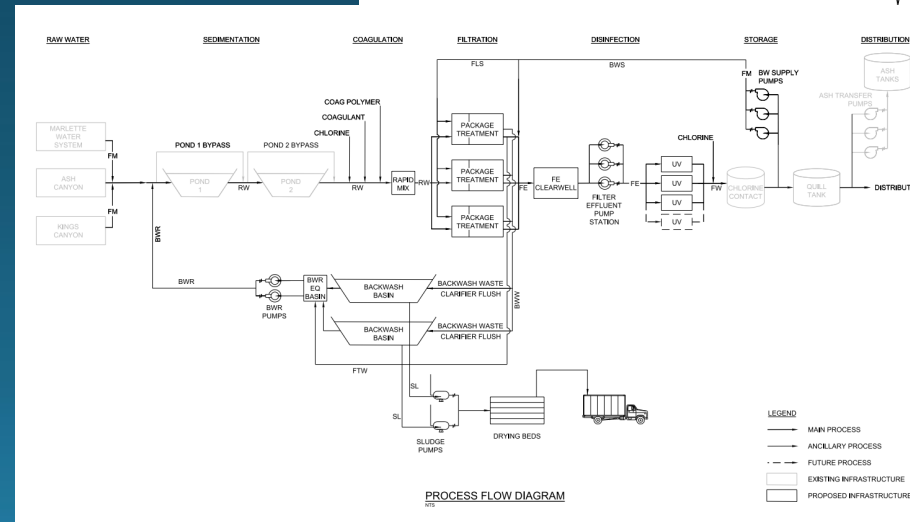
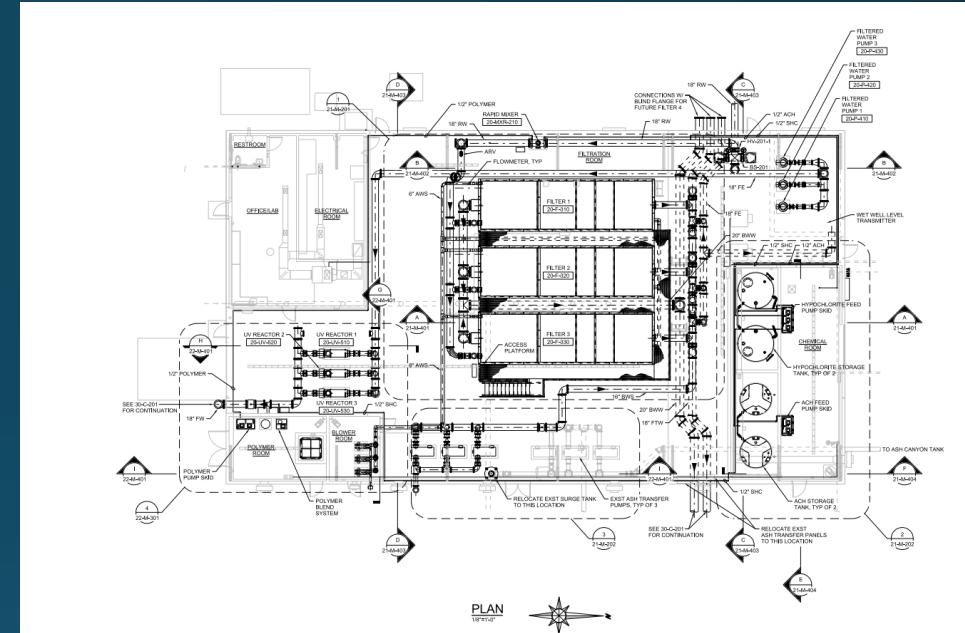


Well 24B Rehab

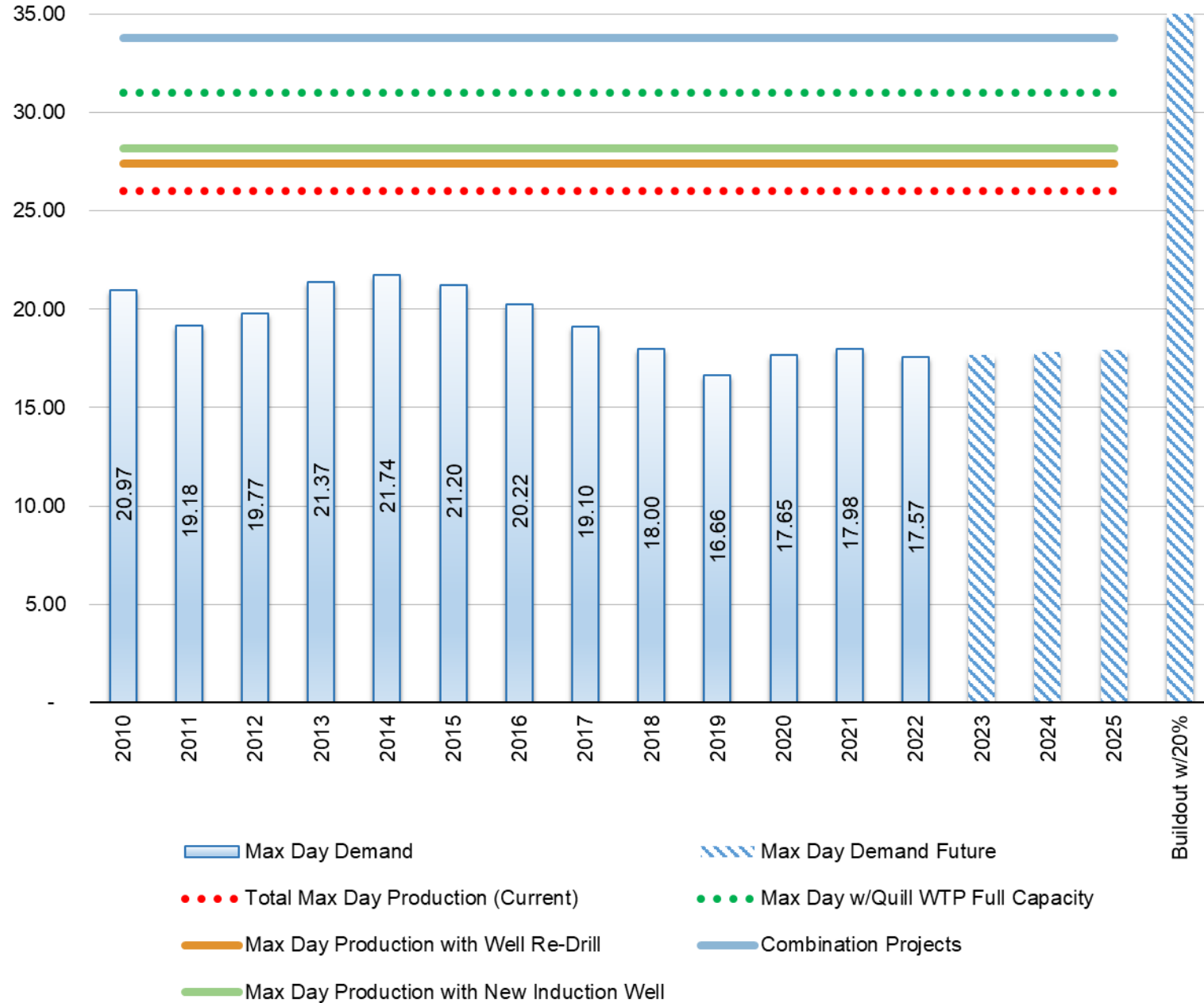


Projects related to System Efficiencies, Redundancy and Future Demand

- 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)
- Quill WTP Improvements 4-5 MGD Increase
 - 90% Design is underway by Lumos and Jacobs Engineering.
 - Conjunctive Use, Demand, and Water Quality Driven
- Well Rehabs to maintain current production
- Well Re-Drill
- New Induction Well



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