CARSON CITY NEVADA
Consolidated Municipality and
State Capital
PUBLIC WORKS

MEMORANDUM

TO: Carson City Planning Commission

FROM: Darren L. Schulz, PE – Carson City Public Works Director

DATE: May 1, 2023

SUBJECT: Growth Management Report 2023

Thank you for the opportunity to inform you of the status of our operations and our ability to serve Carson City at a projected growth rate up to 3% through 2024.

The operational reports are as follows:

WATER OPERATIONS:

Carson City's existing usable water rights are 18,648 acre-feet per year.

Carson City must allocate approximately 2,305 acre-feet to remaining approved undeveloped lots. As required by the State Engineer's Office, additional parceling is also being accounted for. In 2022, Carson City's total water production was 11,115 acre-feet. This number represents the total water produced in order to meet the customer's demands.

Subtracting the 2022 total water production of 11,115 acre-feet and outstanding water commitments of 2,305 acre-feet from Carson City's usable water rights of 18,648, leaves a balance of approximately 5,228 acre-feet, which may be allocated towards new development.

Carson City continues to utilize conjunctive use water management. Carson City fulfills its annual water demands from approximately 75% groundwater and 25% surface water sources. Through conjunctive resource management, Public Works operates the water system, so Carson City's needs are met through a combination of groundwater and surface sources, making the best use of the water resources available. The goal of conjunctive management is to maximize surface water when available to allow the groundwater aquifers to rest.

Carson City will continue the outside water management program during the 2023 irrigation season, which includes a THREE-DAY-A-WEEK schedule where odd-numbered addresses water on Tuesday, Thursday and Saturday and even-numbered addresses water on Sunday, Wednesday and Friday, with no watering between the hours of 10:00 a.m. to 6:00 p.m. Watering on Mondays is prohibited. This allows time for resting of the system and filling of tanks.

State Engineer's Order 1140 allows Carson City to pump additional Eagle Valley groundwater during drought years. This allows Carson City to pump a maximum of 11,700 acre-feet from the Eagle Valley ground water

basin for a one-year period provided that the average ground water pumped from Eagle Valley over a period of five consecutive drought years will not exceed 9,900 acre-feet annually.

Carson City has built up an additional water rights bank account not included in the total usable water rights number in the previous paragraphs since 2006, through its managed Aquifer Storage and Recovery program within Vicee Canyon recharge basins. The total number of water rights banked under the recharge permit is approximately 3,215 acre-feet, to be able to be used in an emergency basis.

Carson City has always used a drought as the design scenario to meet peak summer demands. Currently, there is approximately 26 million gallons per day (MGD) of production supply for a drought year. The average maximum-day demand from fiscal year 2010 to 2022 was approximately 19.30 MGD. There is approximately 6 MGD of peak supply capability remaining, if all supply sources are functioning.

Carson City Public Works can accommodate the projected 3% growth through 2024, dependent on the completion of the planned capital improvement projects regarding storage, treatment, distribution and production facilities.

With regards to the threshold for Growth Management review, we recommend changing the threshold at 15,000 gallons per day to 10,000 gallons per day. Public Works analyzed water usage data for commercial and industrial properties across Carson City to determine this adjustment to the current threshold. This analysis revealed that the 10,000 gallons per day threshold represented the cut off for the top 10% of highest commercial/industrial water users in Carson City and signified a more appropriate threshold in determining which applications will be under the review of the Growth Management Commission.

WASTEWATER OPERATIONS:

The Water Resource Recovery Facility (WRRF) is permitted to process a sewage flow of 6.9 million gallons per day (MGD) averaged over a 30-day (monthly) period. The 2022 maximum monthly average flow was 5.1 MGD. With respect to the planned growth, a potential development rate of 3% through 2024 could be accommodated by the WWRF and wastewater operations.

LANDFILL OPERATIONS:

The Landfill has a projected life expectancy of approximately 23 years. With respect to the planned growth, a potential development rate of 3% through 2024 could be accommodated by the Landfill.

TRANSPORTATION:

The Carson City Public Works Department is responsible for the construction and maintenance of the City's street network as well as bicycle and pedestrian facilities. Additionally, the City operates a public transit system. The City also works closely with the Nevada Department of Transportation, which owns and operates State highways in the City. The State-owned roads include the Carson City Freeway (I-580), which connects U.S. 395 at U.S. 50 (Spooner) to Reno.

With respect to the planned growth of the City and how that may be expected to impact the City's transportation system, increased traffic volumes anticipated to result from the potential development rate of 3% can be accommodated by the existing and planned transportation system in 2024, dependent on the roadway corridor. This increase can be further mitigated over the next few years by enhancing mode choice and by focusing new development near transit routes. Transportation staff are working on a number of projects and studies focused on long-term concepts for critical corridors anticipated to see the largest increases in traffic volumes such as William Street/US 50 and US 395 in south Carson City. These projects and studies are aimed at improving safety, maintaining traffic operations, entrancing multimodal connectivity, and ensuring options in transportation choice. Although increased traffic volumes are expected to be accommodated by planned projects and existing roadway capacity, roadway maintenance activities continue to operate in a deficit. Consequently, the long-term condition of the City's roadway pavement will continue to deteriorate unless or until the funding gap is reduced. The current estimated deficit in funding to meet our targeted pavement condition is $20M per year.

Public Works' staff, who serve both the Carson City Regional Transportation Commission (CCRTC) and the Carson Area Metropolitan Planning Organization (CAMPO), are familiar with the current system, the improvements that are planned to be implemented in 2024, and the planned improvements to be implemented through the year 2050. With this knowledge, we have determined that with the exception of a few spot intersections, the current system is operating well with respect to capacity. As development occurs, staff must be mindful of development project impacts to the transportation system and ensure fair and appropriate mitigation measures are implemented. To that end, staff continue to review the Traffic Impact Study requirements provided within Carson City Municipal Code and plan to bring forward various recommendations for amendments in Fiscal Year 2024. CAMPO staff are nearly complete with the Carson Area Transportation System Management Plan aimed at improving transportation operations in the region.

One of the important tools available for these evaluations is a travel demand model developed and maintained as part of CAMPO responsibilities. This model is based on existing and forecasted land use and socio-economic data and is developed and updated in cooperation with the Carson City Planning Division and staff from Lyon and Douglas Counties. The travel demand model is currently being updated with a planned completion date in early 2024. The update to the model will incorporate 2020 census data, new roadway connections resulting from development, new land-use projections, changes to mode choice, and the latest available travel patterns using vehicle data. The model allows for evaluations of the impacts of changes in land use, new development, the transportation network, or both. The model is used to support subarea analyses and to identify long-term critical infrastructure needs along the region's roadways, including those owned by NDOT and outside of Carson City.

DRAINAGE AND FLOODPLAIN:

Consistent with the Regional Floodplain Management Plan and Chapter 13.06 of the Carson City Municipal Code, Open Space, open floodplains are an asset to Carson City. As of April 2023, there are 3,832.5 acres of Special Flood Hazard Area in Carson City. Of that area, 2,718.5 acres or 71% is considered open space. The Regional Floodplain Management Plan affirms the long-term vision of the Carson River Coalition which utilizes a "Living River Approach" that recognizes the importance of balancing the river's natural floodplain form and function with various land uses. Additionally, the City's own Master Plan aligns with the vision identified in the Regional Floodplain Management Plan by outlining specific goals that encourage smart land use planning and discourage development within the 100-year floodplain and other hazard areas. Carson City's Floodplain Management Ordinance and participation in the Community Rating System (CRS) require higher regulatory standards for structures built in a floodplain. All of these goals, requirements, and strategies are designed with

the intent to safeguard waterway corridors, floodplains, wetlands, streams, the Carson River, and protect floodplains.

If the vision of our Regional Floodplain Management Plan is upheld with respect to planned growth, a potential development rate of 3%through 2024 could be accommodated by stormwater infrastructure. Additional studies, especially with respect to the Ash and Kings Canyon watersheds, are being performed to understand the risks and limitations of development in our region. Additional stormwater infrastructure such as regional basins and mindful development using the onsite detention requirements and Low Impact Development (LID) components outlined in the City's Drainage Manual will help ensure those risks are well managed.