

Executive Summary

ES.1 Introduction

The Western Regional Water Commission (WRWC) was created in 2007, effective April 1, 2008, by the Nevada Legislature, and by Cooperative Agreement among the WRWC member agencies. Chapter 531, Statutes of Nevada 2007, the Western Regional Water Commission Act (the Act) also created the Northern Nevada Water Planning Commission (NNWPC) and required the NNWPC to develop a comprehensive regional water management plan for the Planning Area covering municipal and industrial water supply, water quality, sanitary sewerage, sewage treatment, stormwater drainage and flood control. The Act further required the NNWPC to develop the initial comprehensive plan on or before January 1, 2011. After adoption of the initial Regional Water Plan (Plan), the Act requires the NNWPC to review the Plan at least every 5 years and to prepare proposed amendments for submittal to the WRWC or report that there are no amendments. This 2021-2040 Comprehensive Regional Water Management Plan amends and updates the initial Plan.

The Plan compiles and integrates multiple sources of information in an effort to be inclusive; provide comprehensive, consistent policy-level guidance to regional and local entities; and comply with the Act. The plan development process provided a broad level of coordination, data sharing, and alternatives analysis. The Plan is collaborative in nature and encourages cooperative engagement between the WRWC member agencies, NNWPC members, and local and regional government planning agencies for implementation.

The Plan's purpose is to lead a cooperative approach to stewardship of the region's water resources through developing and implementing an integrated water resources plan, building understanding and trust among stakeholders, and establishing water resources public policy. The WRWC will serve a public use and promote the general welfare by facilitating unified and cooperative efforts to accomplish the following:

- Secure and develop additional water supplies.
- Maintain and cooperatively establish policies for managing existing water resources and water supplies.
- Provide for integrated regional water resources and management of water supplies.
- Provide for integration of efforts to manage stormwater.
- Provide for protection of watersheds.
- Support development of regionally based effluent management strategies.
- Provide for regional conservation efforts, subject to and in accordance with the Truckee River Operating Agreement (TROA).

ES.1.1 Planning Area

The Planning Area consists of Washoe County in its entirety except land within the Tahoe basin, any Indian reservation or Indian colony, the Gerlach General Improvement District, and State of Nevada groundwater basins 22-San Emidio Desert, 23-Granite Basin, and 24-Hualapai Flat. Planning is focused, however, on the Truckee Meadows Service Area, consistent with the Truckee Meadows Regional Plan.

ES.1.2 Plan Development

The NNWPC developed the Plan in accordance with the Act and in doing so, received, considered, and incorporated to the extent feasible and consistent with the objectives of the WRWC, facility plans, water

resource plans and capital improvement plans (CIP) developed by public purveyors and other entities providing services covered by the Plan. In addition, state laws, local codes, plans, and other documents were considered, including but not limited to:

- Federal Acts, such as the Clean Water Act and Safe Drinking Water Act and the Truckee River Negotiated Settlement
- TROA and Water Quality Settlement Agreement
- Decisions, orders, and recommendations of the State Engineer, including existing conservation plans
- State Water Plan
- Washoe County 208 Water Quality Management Plan
- Truckee Meadows Water Authority (TMWA) 2020-2040 Water Resource Plan (2020 WRP)
- Public Purveyor and other service provider facility plans and CIPs
- Truckee Meadows Regional Plan
- Local Government Master Plans
- Washoe County Consensus Population Forecast

Because the NNWPC considered the aforementioned codes, plans, and documents during the development of the Plan, and because of the required review for consistency when adopted, consistency is assured among planning efforts.

ES.2 Plan Components

Chapter 1: Regional Water Planning Policies and Criteria

Chapter 1 of the Plan outlines the policies developed to address current and future issues affecting the Planning Area with respect to the subjects of the Plan. The policies address identified challenges and needs for water, wastewater, flood control, and drainage capabilities over a 20-year time frame and considerations for meeting those needs, and provides pertinent context and background information. The NNWPC works collaboratively to adequately evaluate a variety of water planning solutions to meet the Planning Area's need and to evaluate future projects for conformance with the Plan. The goals, policies, and criteria will apply for supply of municipal and industrial water, sanitary sewerage, treatment of sewage, stormwater drainage, and control of floods. These policies should also guide the evaluation of future projects and identify possible changes necessary to implement the Plan.

The following policies and criteria are organized according to the subjects of the Plan as stated by the four goals shown below. Each policy correlates with one of eight specific objectives arranged under the goals.

- **Goal 1:** Plan for the development of sustainable water supplies.
 - **Objective 1.1:** Promote efficient use of resources.
 - **Objective 1.2:** Provide for a sustainable water supply and an acceptable level of service to the community.
 - **Objective 1.3:** Implement measures to protect and enhance water quality for a sustainable water supply.
- **Goal 2:** Plan for regional wastewater treatment and disposal requirements.
 - **Objective 2.1:** Promote efficient use of resources.
 - **Objective 2.2:** Manage wastewater for protection and enhancement of water quality.

- **Goal 3:** Plan for the protection of human health, property, water quality, and the environment through regional floodplain and stormwater management.
 - **Objective 3.1:** Provide effective and integrated watershed management.
- **Goal 4:** Support the implementation of the Truckee Meadows Regional Plan.
 - **Objective 4.1:** Provide coordinated infrastructure planning.
 - **Objective 4.2:** Clarify the role of the WRWC and the NNWPC.

Chapter 2: Water Resources

Chapter 2 of the Plan provides a planning level estimate for available water resources to meet current and future needs. Sustainable water resources are estimated for the 20-year planning horizon at approximately 192,988 acre-feet annually (afa), including resources presently dedicated for municipal and industrial (M&I) uses and those that may be converted from other uses to M&I. The data from 2019 show that just under 37,000 afa of effluent water is generated in the Planning Area, of which up to approximately 7,000 afa is used for non-potable purposes such as irrigation, construction, and dust control; the remainder is returned to the Truckee River, discharged to Swan Lake wetlands, or discharged to the ground via infiltration basins. The amount of

Water quality challenges are also presented and include an overview of programs working to prevent water quality degradation, restore water quality, and recycle water to maximize water resource availability into the future. The sources of water include surface, ground, and reclaimed waters. Surface water resources originate at Lake Tahoe and consist of the Truckee River system, five upstream reservoirs, Steamboat Creek, and Steamboat Creek's six perennial creeks and ditches. Groundwater resources are drawn from multiple hydrographic basins. Reclaimed waters add approximately 37,000 afa for limited uses.

Factors that affect water resource sustainability include population growth rate and development, availability of additional Truckee River water rights, legal agreements, source water reliability due to weather, groundwater recharge, aquifer storage and recovery, reclaimed water, and source water quality.

Chapter 3: Water Purveyors and Other Water Providers

Chapter 3 of the Plan describes the water purveyors, service areas, and major facilities to treat, convey, and store water; conjunctive use; aquifer recharge and aquifer storage and recovery; water deliveries; average and peak demands; peaking capacity; and water resource dedication policies.

There are currently two public water purveyors within the Planning Area: TMWA and the Sun Valley General Improvement District. These two purveyors provide 95 percent of the municipal water service within the Planning Area. A small number of privately owned public utilities exist in the Planning Area, which are regulated by the Public Utilities Commission of Nevada. Numerous other small private water systems exist, which are regulated by the Nevada Division of Environmental Protection (NDEP) and the Washoe County Health District. These systems are typically associated with commercial businesses for which no municipal water service is available.

Approximately 9,100 residential parcels within the Planning Area rely on individual wells for domestic water supply. The use of domestic wells is allowed for parcels where municipal service is not available. A concern regarding domestic wells has been development in certain areas where withdrawal of groundwater has resulted in the lowering of the water table. A variety of steps have been taken to address the issue, including restrictions on development of parcels in certain hydrographic basins, which require retirement of water rights and restrictions on subdividing existing parcels without the dedication of water rights.

There are three reclaimed water purveyors within the Planning Area; the City of Reno, the City of Sparks, and Washoe County. The amount of reclaimed water utilized from year to year fluctuates but estimates of usage are generated from past years' data. The Cities of Reno and Sparks co-own the Truckee Meadows Water Reclamation Facility (TMWRF), which supplies approximately 3,800 af of reclaimed water per year to the Reno-Sparks reclaimed water distribution systems. In addition, the Reno-Stead Water Reclamation Facility (RSWRF) supplies approximately 500 af of reclaimed water per year to Reno's Stead reclaimed water system. Washoe County owns and operates the South Truckee Meadows Water Reclamation Facility (STMWRF), which supplies 100 percent of its effluent, approximately 2,700 af of reclaimed water per year, to the Washoe County reclaimed water system in the South Truckee Meadows.

Chapter 4: Wastewater and Effluent Management Planning

Chapter 4 provides background information and information on the status of regional wastewater facilities and subsequent effluent management planning. It also presents planning and management issues that require action and/or further evaluation. Wastewater facility planning and effluent management are considered with other water management planning objectives to determine appropriate future actions and recommendations. The five publicly owned water reclamation facilities in the Planning Area each process wastewater at average daily flows below maximum treatment and permitted capacities.

The informal Regional Effluent Management Team is working toward regionally based solutions for effluent management issues and acknowledges that the strategies developed may form the framework for an up-to-date regional effluent management guidance document that will cover all the Planning Area's publicly owned water reclamation facilities and service areas. Near-term effluent management issues focus on reducing nitrogen loading to the Truckee River by maximizing the use of TMWRF reclaimed water at locations away from the river in allowable quantities and during appropriate times of the year while maintaining a balance with Truckee River flows consistent with State of Nevada water law and the TROA.

Expanded use of reclaimed water may include locations outside the Truckee Meadows Service Area and uses such as groundwater recharge or indirect potable reuse. Such uses are being studied with respect to regulatory compliance, treatment technologies, and public engagement and perception.

Category A+ reclaimed water quality, as defined by Nevada Administrative Code 445A.27612, is advanced purified water (APW), suitable for all reclaimed water uses, including groundwater augmentation. Following 5 years of advanced water treatment pilot testing and demonstration projects, the OneWater Nevada partnership continues to implement APW projects through regional collaboration.

Results of previous studies point to the importance of septic system density, parcel size, and distance to sensitive receptors. Conversion of septic systems to a municipal sewer system appears to be the most dependable, albeit expensive, measure to mitigate nitrate contamination due to high densities of septic systems. Artificial groundwater recharge using potable water sourced from TMWA has also proven beneficial in improving water quality with respect to nitrate.

Chapter 5: Stormwater and Watershed-Based Water Quality Planning

Chapter 5 provides background information, the status of the regional stormwater and watershed-based water quality regulations, the Truckee Meadows Regional Stormwater Quality Management Program (SWMP), interagency and stakeholder collaboration, restoration projects, as well as key watershed management plans. Important stormwater and watershed documents have been developed collaboratively in recent years, including *One Truckee River Management Plan, Phase I, West McCarran to Sparks Boulevard (KTMB and NLT 2016)*, *the 2020 Integrated Source Water and 319(h) Watershed Protection Plan for Public Water Systems and the Truckee River in the Truckee Meadows (2020 SWWP) (RCI 2020)*,

and the 2020 Watershed Management and Protection Plan for Tributaries to the Truckee River (NCE 2020).

Efforts to track and manage nonpoint sources of pollution entering the Truckee River through the above-mentioned SWMP, plans, and documents have resulted in restoration projects for both the Truckee River and its tributaries. Several restoration projects described throughout the chapter have been planned, funded, and implemented.

The Truckee River is critical to the local economy and quality of life and is a shared resource in the Truckee Meadows among upstream and downstream users. Effective watershed protection requires cooperation among two states, one sovereign Indian nation, multiple counties, cities, towns, various utilities, other entities, and the public.

Chapter 6: Flood Management and Stormwater Drainage

Chapter 6 describes the flood management or stormwater drainage services within the Planning Area that are provided by the Truckee River Flood Management Authority (TRFMA), the Cities of Reno and Sparks, and Washoe County. Subjects covered include flooding history; types of floods; federal programs; federal, state and local laws; progress on TRFMA's Truckee River Flood Management Project (Flood Project); structural and nonstructural alternatives for flood control; local drainage programs; flood control and drainage facility design standards; regional facilities; and facilities for single drainage basins.

Implementation of the Flood Project is currently overseen by TRFMA, a joint powers authority created in 2011 by an Interlocal Cooperative Agreement executed by Washoe County and the Cities of Reno, and Sparks. Nevada Senate Bill 175, approved in June 2009, served as the basis for the new flood authority (refer to Chapter 477 of the Nevada Revised Statutes for more information). The agency's primary mission is to plan, design, build, operate and maintain infrastructure to reduce flood damages, safeguard public health, and create a more resilient community. In coordination with various federal agencies and local emergency managers, TRFMA also operates and maintains a network of stream gauges that monitor river stage as part of a regional flood warning system.

Based on recent events, TRFMA is moving forward with the Flood Project locally, without participation from the U.S. Army Corps of Engineers. The project is being streamlined and certain elements have been modified to achieve the project goals in a more cost-effective manner. For example, TRFMA is now prioritizing construction of levees and wide berms rather than floodwalls, as this approach will reduce costs and improve the environmental and aesthetic value of the region.

Chapter 7: Population Forecast and Water Demand and Flow Projections

Chapter 7 uses the Washoe County Consensus Population Forecast (TMRPA 2020), the TMWA 2020 WRP, and the Truckee Meadows Regional Planning Agency (TMRPA) 2020 Land Use Model as the basis for estimating the future needs of the Planning Area with respect to water demands, including peak day requirements, wastewater flows, treatment capacity, and effluent management capacity. The chapter relies on data presented in preceding chapters and develops a water balance scenario showing future water supplies available to public purveyors and wastewater flows by service area.

The WRWC determined in 2020 that the consensus forecast population for 2040 can be supported by the sustainable water resources set forth in the Plan. The Washoe County Consensus Population Forecast is in close agreement with TMWA's 20-year population forecast.

Overall, the region has available water resources to meet both existing demands and the projected 2040 increase in demands. These water resources include TROA water supplies, the Fish Springs Water

Importation Project, local basin groundwater supplies, and local tributary creeks. In addition to these water resources, the region has reclaimed water resources available for multiple uses from the TMWRF, the STMWRF, the RSWRF and potentially the Cold Springs Water Reclamation Facility (CSWRF). The water balance includes well recharge at American Flat in Lemmon Valley, using APW (i.e., recycled water treated to the State of Nevada's category A+ reclaimed water quality) as part of a field-scale demonstration project.

Water reclamation facility expansions are either planned or are underway to provide treatment capacity to meet 2040 wastewater flow demands. Long-term effluent management options are either being implemented, are planned, or at a minimum are being studied as concepts.

Chapter 8: Water Conservation Plan - Efficient Use of Water

Chapter 8 presents the water conservation plan that assists Washoe County, the Cities of Reno and Sparks, residents, businesses, and other entities in using only the water that is needed to achieve a desirable and sustainable quality of life. This water conservation plan describes water conservation programs and ordinances that are in effect in the Planning Area at present and pending proposals for water conservation for both indoor and outdoor water use. Recommended water conservation actions that may be implemented or considered for implementation in the future are also presented.

Several practices found in the water conservation plans are being implemented, including converting TMWA customers to metered rates, educating users about water conservation practices, managing water distribution systems to reduce leaks, retrofitting existing homes and businesses with water-efficient plumbing fixtures, encouraging water-efficient landscaping, implementing assigned-day watering, and conducting water audits.

Increased use of reclaimed water and other non-potable water sources may also be implemented to increase water conservation in the Planning Area. These uses are subject to federal, state, local, and WCDHD regulations, and depend on the availability of supplies from the TMWRF, the RSWRF and the STMWRF.

By implementing current and future water conservation methodologies, the Plan will help ensure that there will be sufficient water for essential public health and safety needs, even during prolonged periods of drought or during an emergency event.

Chapter 9: Cost and Financing

Chapter 9 summarizes the costs associated with planned major facility improvements for water, wastewater, reclaimed water, storm drainage, and flood management in the Planning Area.

The data provided by each of the water service agencies shows that greater spending on capital improvements is anticipated over the next 5 years than was planned for in the previous two 5-year intervals (2011 and 2016).

Spending on infrastructure, including both rehabilitation of existing assets and building of new facilities, is projected to be 135 percent higher than in the 2011-2016 time period and 89 percent higher than in the 2016-2020 time period. Developer-funded project costs are anticipated to be 533 percent greater than in the 2011-2015 time period and 247 percent greater than in the 2016-2020 time period.

Spending on wastewater and water systems is anticipated to be 47 percent and 23 percent, respectively, of total CIP spending over the 5-year period from 2022 through 2026. The remaining costs will be spent on reclaimed water systems (18 percent), flood infrastructure (8 percent), and storm drainage facilities (4 percent). Of note, the region is increasing investment in reclaimed water facilities, which was estimated at only 2 percent of total expenditures in the 2016-2020 time period.

Impacts to the current users of the water systems cannot be estimated in this chapter because each agency employs different rate structure methodologies and has different philosophies in their approach to rate-setting. Impacts to future users of the systems similarly cannot be estimated; however, the impact of fees charged to new users is analyzed within the context of the overall development fee and cost burden to evaluate the significance of water-related fees in development decisions. The analysis finds that water-related fees are a relatively insignificant factor driving land development decisions compared to other factors, primarily economic factors at both the macro (United States in general) and micro (regional) levels. However, the level of fees can encourage or discourage development in certain parts of the region.

Chapter 10: Issues and Action Items

Chapter 10 summarizes issues discussed in the preceding chapters, identifies regional water planning connections (or linkages) to related water planning topics, briefly outlines activities since the last edition of the Plan, and presents alternatives and solutions to address the various water planning subjects moving forward. The sections of this chapter are primarily organized according to facility planning areas. Proposed action items to guide the activities of the WRWC and NNWPC over the next 5 years are provided at the conclusion of each section of this chapter.

Water planning continues to focus on meeting the demand for potable water supplies within the Planning Area. TMWA adopted its 2020 WRP, completed the construction of the Mount Rose Water Treatment Plant in the South Truckee Meadows, acquired the West Reno Water Company in Verdi, and continues to investigate available water resources to ensure sustainable water supplies into the future.

The five water reclamation facilities —TMWRF, STMWRF, RSWRF, LVWRF and CSWRF— continue to implement their individual facility plans. The LVWRF is planned for decommissioning in 2025, and the RSWRF will continue to serve the LVWRF customers. The City of Reno and TMWA entered into an interlocal agreement to proceed with the 30% design of the RSWRF American Flat Aquifer Storage and Recovery Project. Washoe County is conducting an analysis to evaluate the current infiltration capacity of the CSWRF rapid infiltration basins and to determine whether the facility can dispose of additional effluent resulting from proposed new developments. The Regional Effluent Management Team continues to evaluate the merits of regional integrated solutions for wastewater treatment and effluent reuse and disposal.

The Plan continues to support strategies to maximize water resources and mitigate water quality challenges. Water conservation, conjunctive use strategies, integrated use of water rights, regional stormwater and floodplain management, and source water and watershed protection programs are all examples of regional strategies that are being implemented to ensure a high-quality and sustainable water supply into the future.