

Policies and Criteria for Discussion at 6/2/10 NNWPC Meeting

Goal 1: Plan for the Development of Sustainable Water Supplies

Objective 1.1 Promote Efficient Use of Resources

Policy 1.1.a: Geographic Use of Truckee River Water

Use of Truckee River water rights shall be limited to the hydrographic basins historically receiving Truckee River water. Use of Truckee River water rights in additional hydrographic basins shall be allowed only to the extent that such uses: are an efficient use of water resources; meet or satisfy all regulatory requirements and operating agreements; maintain or improve water quality for downstream users; maintain a healthy river environment, provide a recreation attraction for residents and tourists, and offer a focus for economic/tourism development.

Criteria to implement policy: Local governments and water purveyors shall apply the following criteria to identify approved areas for the use of Truckee River resources:

- The primary locations where Truckee River water may be used include the hydrographic basins where Truckee River water has historically been diverted for agriculture pursuant to the Orr Ditch Decree: Truckee Meadows Hydrographic basin 87, Spanish Springs basin 85, Truckee Canyon segment basin 91, and Tracy segment basin 83, plus areas where Truckee River water has been delivered for municipal and industrial use in Sun Valley basin 86 and Lemmon Valley basin 92.
- In reviewing requests for use of Truckee River Water, water purveyors and local government agencies shall determine that export of the Truckee River water resource to additional areas does not impair the ability to meet the demands associated with fulfilling the reasonable development potential of properties identified under the Regional Plan Policies 1.2.1 and 1.2.2, as calculated in the 2003 Water Resource Baseline (see Appendix D) and subsequent Water Resource Budgets.
- The proposed area of Truckee River water use is within the Truckee Meadows Service Area boundary, as it may be amended.
- Local governments and water purveyors have determined that the resource costs are found to be economically acceptable.
- Expanded use is consistent with water quality, wastewater disposal, environmental and flood control policies or regulations.

Discussion: It is in the best interest of the community to optimize the use of Truckee River resources, both within and by export of water from the Truckee River Basin. Use of limited Truckee River water supplies throughout the region is recognized as an ongoing

and necessary practice that provides water supplies to areas that independently do not have sufficient water resources to accommodate existing and planned uses.

Policy 1.1.b: Water Conservation

Water conservation measures that promote smart management of the region's water resources will be implemented for the benefit of the community. Additionally, the community will be expected to conserve more water during drought.

Criteria to implement policy: Local governments and water purveyors shall enforce existing ordinances and work towards implementation of Base Case conservation measures.

Discussion: In many communities, water conservation is viewed as an alternative to developing new water resources. However, due to institutional constraints, most water conservation programs in the Truckee Meadows do not result in new water resources for future use. Notwithstanding the limitations on water resource benefits resulting from conservation, valuable benefits can be realized, including:

- stretching drought or emergency water supplies
- delaying construction of new water and wastewater treatment facilities
- reducing cost of water system operations
- reducing energy costs
- enhancing downstream water quality
- improving environmental conditions
- enhancing access to water supply projects, including the Negotiated Settlement

Techniques that may be used to achieve the region's conservation goals include, but are not limited to, the following:

- water meters
- existing ordinance enforcement
- water saving indoor fixtures
- individual evapotranspiration controller system requirement
- minimum of 65% efficient irrigation for residential and commercial sites
- seasonal changes in irrigation timing
- functional turf areas
- proper soil preparation
- pressure reducing valves
- individual customer water budgets
- tiered pricing
- water audits
- reclaimed wastewater for landscaping

Policy 1.1.c: Management of Conserved Truckee River Water

Conserved water originating from the Truckee River shall be managed consistent with agreements among local entities and parties of interest to the Truckee River.

Discussion: During drought conditions, low river flows occur between the Glendale Water Treatment Plant and the Steamboat Creek confluence. During extreme drought periods flow is sometimes reduced to zero. The above policy is designed to generate a source of water that can be managed in the best possible way, depending on drought conditions, to achieve instream flows and habitat enhancement to the greatest degree possible. Storage of conserved water in upstream reservoirs will have requirements pursuant to TROA operations that provide drought protection and fish credit water. Water stored under TROA operations can be released for fish purposes thereby providing undiverted flow to the benefit of Pyramid Lake as well as Truckee River habitat. Implementation of the Water Quality Agreement and TROA are expected to enhance flows during critical low-flow periods.

Policy 1.1.d: Evaluation of the Unexercised Portion of Committed Water Supplies

The feasibility of alternative uses and management of the unexercised portion of committed water supplies shall be evaluated. This appropriated but unused water could possibly be dedicated to a variety of beneficial uses.

Discussion: Conversion of agricultural water rights to municipal and industrial uses and the various conversion ratios accepted (e.g. 1.12 af for one single-family home) have committed water resources that are not currently being used due to a variety of reasons, including conservation. This appropriated but unused water could possibly be dedicated to a variety of uses including environmental or a reduced water right dedication policy or could be added to existing water supply. Any one of these options has political or institutional barriers and could be hydrographic basin specific.

Policy 1.1.e: Water Meters

Water purveyors within the region shall meter to the extent practicable, all uses or sales of water within their respective service areas.

Objective 1.2 Provide an Acceptable Level of Service to the Community

Policy 1.2.a: Conjunctive Management of Surface Water and Groundwater Supplies to withstand a 10-year Drought Cycle

For planning purposes, the conjunctive management of surface water and groundwater supplies for municipal and industrial use shall be designed to withstand the worst drought cycle of record, that being the drought of 1987-1994, with 2 dry years (1987-1988) added to the cycle.

Discussion: When the 1995–2015 Regional Water Plan was being written (during the worst years of what would become the worst 8-year drought of record), the RWPC endorsed a drought protection policy designed to withstand an event more severe than the worst drought of record. The resulting policy required a 10-year drought design consisting of the actual drought of 1987–1994 plus two additional years, 1987-1988. The stricter, more conservative nature of that policy resulted, at least in part, due to the

uncertainty of whether the 1995 water year would prolong the drought or end it. It so happened the drought ended after adoption of the policy.

In its 2005-2025 Water Resource Plan (TMWA, 2003), TMWA concluded that the threat of drought affecting the regional surface water supply is always present and no scientific research can provide a 100% reliable estimate of when a drought will occur or how long one will last. The longest drought period on record is eight years, from 1987 to 1994. In determining the level of threat from a drought and the appropriate length of time for which to plan, consideration must be given to the likelihood that a drought of eight or more years will occur and the costs that might be imposed on water customers to maintain an acceptable level of water supply to endure such a drought.

As part of its 2005-2025 Water Resource Plan, TMWA used historical Truckee River data to examine the likelihood of occurrence of droughts of various lengths and found that drought-year cycles are relatively rare events, similar to flood events. A TMWA / UNR modeling effort to analyze drought frequencies estimated that the likelihood of a 8-, 9-, or 10-year event occurring is extremely rare with frequencies of 1 in 230 years, 1 in 375 years and 1 in 650 years, respectively.

TMWA's 2005-2025 Resource Plan finds that 1) a ten-year drought design imposes an unrealistic burden on the Region's resources, 2) planning for the nine-year drought event with today's resources is more than adequate to meet expected drought frequencies.

TMWA leans on the conservative side in its modeling efforts and concludes that its customers will have water available for all uses, provided there is increased conservation during the critical year, to withstand a nine-year drought. During the drought period of the late 1980s to the mid-1990s, use per connection decreased by almost 25% from the previous years' average usage, demonstrating significant consumer response to drought measures. In light of the above findings, the projected water demands of the region (see Chapter 6), and the anticipated cost to the community to support a 10-year drought design, the RWPC recommended a 9-year drought planning standard. The Board however, retained the more conservative 10-year standard reflected in Policy 1.2.a, above. Please see related sections on drought in Chapters 2 and 8.

The RWPC intends to review this policy, and revise it if necessary, during the next 3-year update of this Plan. Factors to consider in reviewing the performance of this policy might include updated demand projections; more hydrologic/climatologic data and analyses; increased conjunctive use and other measures that provide flexibility in managing water resources; new sources of water supply; or other appropriate factors.

Policy 1.2.b: Water Resource Investigations

Where a water supply deficiency exists or a potential water supply deficiency may occur as a result of master plan, zoning or land use changes or changes to the Truckee Meadows Service Area boundary, or there is a need for additional water resources to meet other regional objectives, the RWPC may investigate alternatives to meet the potential water requirement.

Criteria to implement policy: The RWPC may initiate water resource investigations when any of the following criteria are met:

- The investigation has been identified as a required element of the RWPC's regular updates to the Regional Water Plan, per NRS 540A.130.3(d).
- When the projection of potential demand indicates that less than 10 years of remaining water resources are available, based on the Water Resource Budget.
- When there is an identified need for additional water resources not associated with land use changes (examples: water for return flow requirements, Water Quality Settlement Agreement requirements, effluent reuse, domestic well conversion or augmentation, etc.).

Discussion: A method of accounting for potential water requirements and available water resources has been developed in the form of the 2003 Water Resource Baseline and the subsequent Water Resource Budgets. It may take up to 10 years to implement a new water resource option from the time a need for additional resources has been identified to the commencement of delivery of that resource. The RWPC will use the Water Resource Budget as a tool to identify the need to investigate additional water resource options.

Policy 1.2.c: Emergency Water Supply Standard

Water service providers using Truckee River water rights supplemented with other water resources shall design and manage their supplies to withstand a short-term contamination event (1-2 days) with no interruption in service, and a 7-day event through the use of mandatory conservation. Water resources supplemental to Truckee River water rights shall be sufficient to meet system average daily demand for 7 days, which would be sufficient to meet all indoor water uses.

Discussion: The Truckee River and its tributaries may be subject to both natural and human-induced contamination events. Natural events may include turbidity caused by flooding, thunderstorms, and/or landslides in the watershed. Human-induced events may include leaks or spills associated with the transport of materials that would pollute water if released. This policy acknowledges emergency management plans required by state statute.

The purpose of this standard is to provide emergency water to the community during a potential contamination event that could render Truckee River water untreatable for an extended period. The minimum 7-day supply is intended to allow the contaminant to flush by the treatment plant intakes, and to provide sufficient response time to plan, implement and communicate temporary treatment or other extraordinary measures to restore the water supply to the community. A water supply of at least the average day demand will provide basic community needs and assumes that mandatory water conservation is implemented.

An evaluation by the RWPC as to whether the region's existing facilities meet this standard was conducted in 2002. This analysis recommended five projects, described in Recommended Projects to Provide an Emergency Water Supply to the Truckee Meadows (ECO:LOGIC, 2002), for detailed evaluation to meet the standard. It is recommended that the RWPC examine these alternatives for future compliance with this service standard.

Policy 1.2.d: Water Supplies to Meet Safe Drinking Water Act Requirements

All drinking water supplies shall meet or exceed the requirements of the Safe Drinking Water Act.

Discussion: The region depends on both surface water and groundwater for its municipal drinking water supplies. Compliance with the Federal Safe Drinking Water Act will ensure a healthful water supply for the regional population.

Objective 1.3 Implement Measures to Ensure a Sustainable Water Supply

Policy 1.3.a: Wellhead Protection

To protect public health and to ensure the availability of safe drinking water, the Washoe County District Health Department (for domestic wells) or local governments with input from the water purveyors with groundwater production facilities in the vicinity of a proposed project shall review any proposed project that may cause possible groundwater contaminating activities. Water purveyors are encouraged to develop wellhead protection programs that can be integrated with local government new business or development review processes.

Criteria to implement policy: Local governments shall solicit comments from the water purveyor and/or the Washoe County District Health Department and consider such comments prior to taking action on a proposed project if there is the potential that a proposed project could result in development with possible contaminating activities within a Wellhead Protection Area. A list of possible contaminating activities includes, but is not limited to:

- Septic tanks
- Solid waste transfer or storage facilities
- Tank farms
- Service stations
- Laundries and dry cleaning plants
- Auto repair services
- Batch plants
- Storage yards
- Electronic circuit manufacture or assembly plants
- Chemical storage, processing or manufacturing plants
- Industrial liquid waste storage areas
- Paint products manufacturing
- Printing and publishing establishments
- Wood preserving
- Plating plants
- Livestock yards
- Storm water infiltration systems

Discussion: A number of potential contaminating activities have been identified as risks for groundwater contamination. Wellhead protection programs are being implemented nationwide to provide assurance that inadvertent discharge of pollutants into the groundwater supply will not occur, since groundwater cleanup is often prohibitively

expensive. In considering comments from the Washoe County District Health Department or water purveyors, local governments may choose to apply conditions to the approval of a proposed project in order to reduce the risk of possible groundwater contamination.

Policy 1.3.b: Protection and Enhancement of Groundwater Recharge

Natural recharge areas shall be defined and protected for aquifer recharge. Proposed projects and proposed land use changes in areas with good recharge potential shall be encouraged to include project features or adequate land for passive recharge.

Criteria to implement policy:

Natural recharge in drainage ways:

Local governments shall enforce existing ordinances referenced below. Local governments will protect the natural recharge and flood protection functions of the drainage ways shown on USGS 7.5 Minute Quad maps.

Undeveloped areas with recharge potential:

- Local governments shall perform a review of lands within proposed project or proposed land use change area and rank suitability for passive recharge based on site evaluation criteria: see RWPC Southern Washoe County Groundwater Recharge Analysis (Kennedy/Jenks, January 2001). Sites with a Hydrology/Geology matrix score of 2.2 or higher are considered to be sites with “good recharge potential”. Figure 1-1 shows areas of good recharge potential compiled from data presented in the report referenced above.
- If a site is determined to have “good recharge potential”, local governments shall, to the extent practicable, work with the project developer or land use change proponent to explore development features or configurations that maximize recharge while meeting other obligations regarding storm water quality and flood control needs.
- Passive recharge elements shall be designed such that they are consistent with water quality, environmental, storm water and flood control policies or regulations.

Discussion:

Natural recharge in drainage ways:

When combined, the requirements of the City of Reno Major Drainage Ways Ordinance and the Washoe County Development Code Article 418 “Significant Hydrologic Resources” provide for the protection of groundwater recharge in most natural drainage ways. There are additional drainage ways not identified in the two ordinances that are shown on USGS 7.5 Minute Quad maps as blue solid or dot-dash lines that represent perennial and ephemeral drainage ways. The intent of this policy is to protect the natural recharge and flood protection functions of these additional drainage ways.

Natural recharge through unlined irrigation ditches:

Insufficient information is available to develop policies at this time.

Areas with recharge potential:

The RWPC strongly encourages incorporation of passive groundwater recharge and/or storm water infiltration project components (infiltration basins or trenches, open space, meandering stream channels) when proposed projects or land use changes are considered

on sites that have good recharge potential and the water to be recharged can meet water quality standards. An initial identification of 30 such sites is included in the RWPC Southern Washoe County Groundwater Recharge Analysis (Kennedy/Jenks, 2001). No funding source is currently in place to develop particular locations as passive recharge sites.

Policy 1.3.c: New Water Resources / Importation

New water resources, including imported water, may be developed provided they further the goals of the Regional Plan and the Regional Water Plan.

Criteria to implement policy: Development of new water resources, including an importation water supply, may be pursued if the following criteria are met:

- The water is to be used within the Truckee Meadows Service Area boundary, as may be amended from time to time.
- There is a need for additional water resources to help meet the demands associated with fulfilling the reasonable development potential of properties identified under Regional Plan Policies 1.2.1 and 1.2.2, as calculated in the Water Resource Baseline or the subsequent Water Resource Budgets.
- Local governments or water purveyors have determined that the new water resource or importation of water is economically feasible and consistent with water quality, wastewater disposal, environmental and flood control policies or regulations.

Discussion: Water importation provides water supplies to areas that independently do not have sufficient water resources to accommodate existing and planned uses. Water importation is a component of the existing water supply for the region. This policy acknowledges that the State Engineer considers additional criteria for water importation according to NRS 533.370(4). Section 7.2.1 discusses this topic in more detail.

Policy 1.3.d: Water Resources and Land Use

Land use designations or zoning designations do not guarantee an allocation of future water resources. This applies to both surface water and groundwater, including groundwater for domestic wells. While a potential water supply deficiency may exist based on approved land uses, water supply commitments may only be approved pursuant to Policy 1.3.e.

Criteria to implement policy: Local governments shall consider the following criteria in reviewing proposed projects or in reviewing changes to land use or proposing changes to the Truckee Meadows Service Area:

- The potential resource requirement;
- The availability of uncommitted water resources in the hydrographic basin, as identified in the Water Resource Baseline¹ ;
- Whether or not a potential water supply deficiency is created and its timing, magnitude and regional water resource impacts;
- Existing water resource investigations that have been performed in accordance with Policy 1.2.b; or

- Timing and availability of potential new water resources developed in accordance with Policy 1.3.c and/or potential mitigation measures.

Discussion: Water resource options will be identified to help meet the potential water resource requirements associated with fulfilling the reasonable development potential of properties identified under Regional Plan Policies 1.2.1 and 1.2.2, as presented in the preliminary 2003 Water Resource Baseline¹ and subsequent Water Resource Budgets. The RWPC recognizes that proposed projects, master plan, zoning or land use changes may create a situation where there are insufficient water resources identified to supply the build-out of all approved land uses within the Truckee Meadows Service Area.

Policy 1.3.e: Water Resource Commitments

Issuance of new commitments against a water resource or combination of resources shall be made in conformance with existing State Engineer permits, certificates or orders; water purveyor rules or policies; and/or local government policies. The local governments, water purveyors, and State Engineer will seek to achieve a balance between commitments and the sustainable yield of the resources in the region.

Criteria to implement policy: The following criteria will be applied:

- The Water Resource Baseline (Appendix D) will be used by local governments and water purveyors as the basis for evaluating the availability of resources to serve proposed commitments. Not all basins within the Baseline have an estimate of the sustainable yield. In such cases where sustainable yield information is lacking, the local government or water purveyor shall use the best available information and may require or conduct additional studies, as it may deem necessary to make a decision.

¹ The RWPC 2003 Water Resource Baseline and subsequent Water Resource Budget are subject to continuing review and update by the RWPC.

- In areas where the approval of commitments through the parcel map, division of land into large parcel map or subdivision process would tend to create or exacerbate a deficit in the Water Resource Baseline balance between sustainable yield and commitments, the local governments and water purveyors will limit such approvals or take affirmative actions to mitigate the deficits through mechanisms such as artificial recharge and recovery of groundwater, conjunctive use of available resources, or the use of alternative water resources.
- In specific basins, resources have been regulated by the State Engineer (such as groundwater in Basin 92) or by water purveyors through the development of a management plan or discount factor that has been approved by the State Engineer, Regional Water Planning Commission, or local government. Such management plans may include short-term reliance upon the use of groundwater in excess of the sustainable yield, provided that such use is temporary and part of an overall management plan to bring the basin back into a condition of sustainability. In addition, certain orders have been issued by the State Engineer on specific resources (such as certain rights in Basin 100) detailing and regulating the amount of the resource available for municipal use while protecting the basin of origin.

These resources shall be considered available sustainable yield and shall be managed in a manner consistent with such State Engineer order or regulation or an approved management plan or discount factor as described herein.

Discussion: While a potential water supply deficit may exist as described in Policy 1.3.d, it represents a hypothetical (or potential future) demand on water resources that might occur if the land is ultimately subdivided or developed in a manner that fully implements the land use plan. A commitment represents an obligation of a water purveyor to provide water to an approved project and therefore should be allowed up to the sustainable yield of the available resources or combination of resources. Properties with existing domestic wells and properties entitled to construct domestic wells constitute a form of commitment of water resources made by a local government when the parcels or lots are created, however there is no guarantee that well drilling will be successful. Maintaining a balance between commitments and the sustainable yield of the resources in the region is of great importance in the implementation of this plan. In areas where existing commitments exceed the sustainable yield the market place will play a significant role in the reallocation of the existing water resource commitments.

Policy 1.3.f: Well Siting and Geothermal Influence

Existing and proposed municipal and industrial well sitings must be evaluated for their influence on the potential for geothermal groundwater migration to areas of potable groundwater. Also, development of groundwater resources shall not result in deterioration of groundwater quality through migration of contaminants.

Discussion: The Region's groundwater supplies are limited in part due to the influence of geothermal systems, most notably the Moana Hot Springs and Steamboat Springs systems. Smaller geothermal systems also exist in Spanish Springs Valley, Washoe Valley near New Washoe City, and Warm Springs Valley. While these areas are fairly well known, it must be understood that large centers of municipal pumping peripheral to geothermal areas can induce geothermal water migration toward the production wells. Consequently, consideration must be given to the prevention of geothermal migration as a result of well placement or groundwater pumping.

Policy 1.3.g: Groundwater Resource Development and Management of Water Quality

Existing and proposed municipal and industrial well sitings must be evaluated for their influence on the potential for contaminated groundwater migration to areas of potable groundwater. Also, development of groundwater resources shall not result in deterioration of groundwater quality through migration of contaminants.

Criteria to implement policy: Long-term monitoring of groundwater quality by water service providers and participating domestic well owners shall be performed to identify potential deterioration in groundwater quality.

Discussion: Similar to the above discussion on the influence of geothermal systems, the Region's groundwater supplies are also limited because of the presence of other natural

and man-caused contamination. Occurrences of nitrates, PCE, arsenic and TDS are documented in one or more locations within the Region. Municipal groundwater providers and other entities as required by law must take measures to prevent further contamination of potable groundwater supplies.

Policy 1.3.h: Corrective Action for Remediation of Groundwater

The corrective action taken for remediation of groundwater contamination shall consider the level of cleanup desired by the affected community, realizing that public health concerns are typically the driving force for groundwater remediation.

Discussion: Groundwater contamination (solvents, fuels, etc.) from various sources occurs beneath the central Truckee Meadows, Sparks Tank Farm and near the Stead Airport. Currently, these sites are in various stages of study and corrective action. Until these areas of contamination have been "corrected", nearby groundwater production may be limited. Various levels of corrective action are available depending on several factors including whether contamination is a result of historic disposal practices or recent releases and whether a responsible party has been identified. Public health concerns as included in various State and Federal environmental laws and regulations may require or constrain certain corrective action alternatives. The affected community should consider the level and cost of corrective action taken.