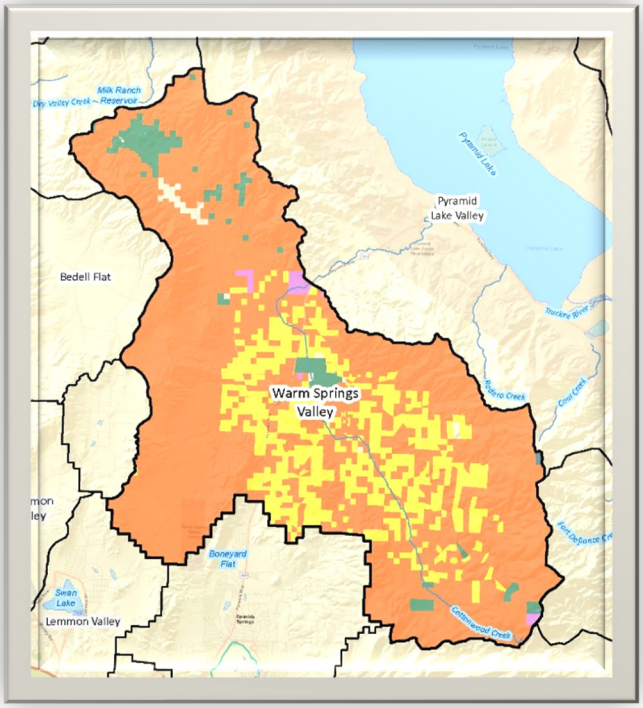
Warm Springs Valley

Groundwater Basin #084, Source Water Profile

Click here for the SWPA Map



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Introduction

The Warm Springs Valley source water profile is a component of the 2020 Integrated Source Water and 319(h) Watershed Protection Plan for Public Water Systems and the Truckee River in the Truckee Meadows (Plan). This document is a part of the on-line source water mapping tool.

This Source Water Protection Area (SWPA) description is intended to be a guide and resource for organizations working within the basin, and an educational tool for those interested in learning more about the drinking water source in the area where they live. This Plan can be used to support funding for water quality projects in the basin.

Summary

This profile focuses on protecting water quality for the sources of drinking water for small recreation developments in the valley. There are no surface waters used directly by water systems in this basin. This profile includes potential and existing water quality concerns, types of land uses, management strategies and projects, and the involved stakeholders and their corresponding plans with water quality components.

The Warm Springs Valley basin is a northwest hydrographic area of 247 square miles surrounded by the Virginia Mountains in the northeast, Dogskin Mountain to the north, and the Pah Rah Range in the south. The mountains are composed of mostly volcanic, sedimentary, and granitic rock. The principal aquifer in the basin is in alluvium. Groundwater moves from upland recharge areas down to basin lowlands.

There are three small public water systems in this basin: Air Sailing, Inc. Gliderport, the Washoe Regional Shooting Range, and the Springwood Equestrian Center, each with their own active well. The land in each of the SWPAs is privately owned with a small portion of the land in the SWPA at the Air Sailing, Inc. Gliderport managed by the BLM.

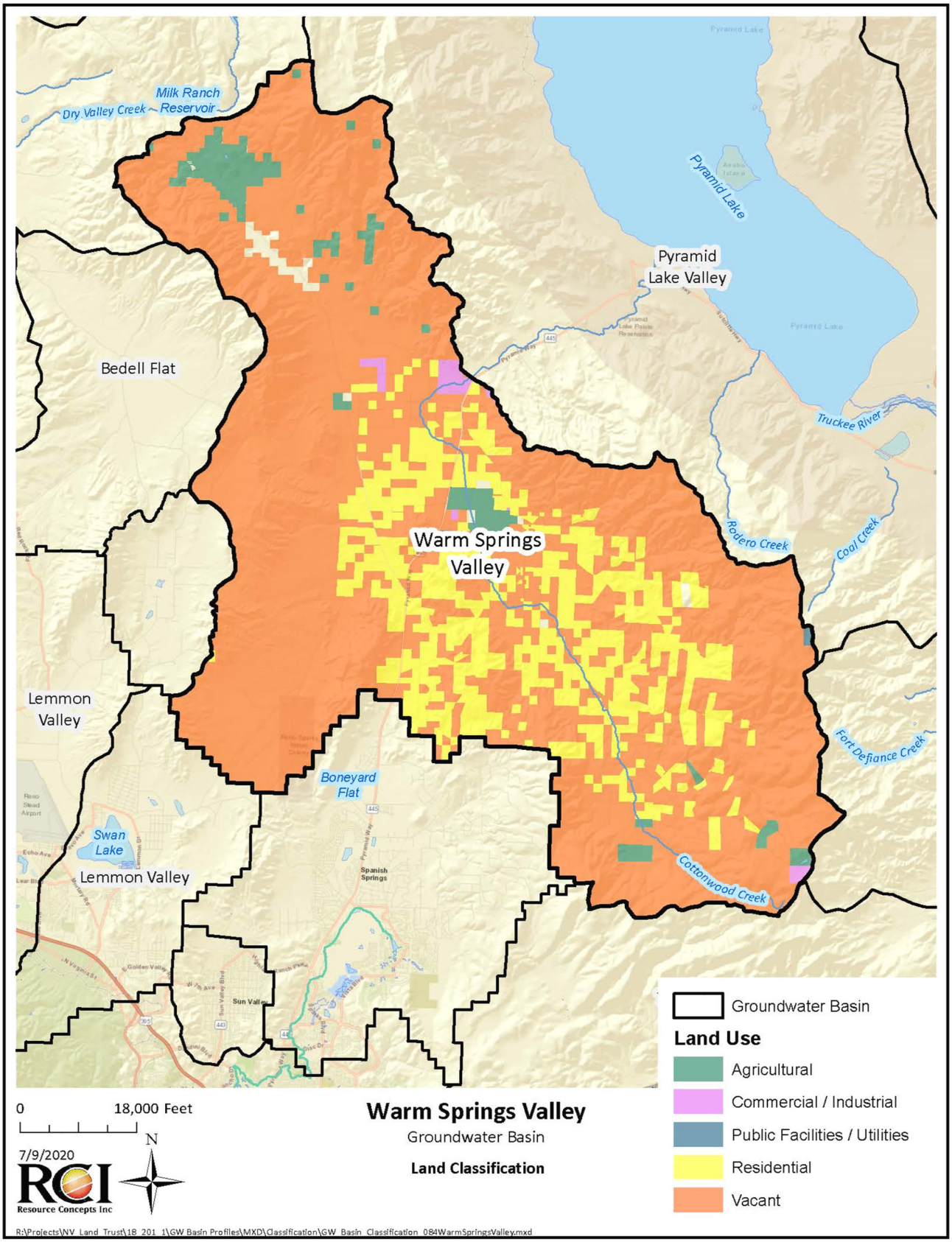
The SWPAs were developed county-wide by stakeholders to help protect drinking water sources. The following table summarizes key water quality aspects of this basin.

Basin Summary	
Basins	• Groundwater Basins: Warm Springs Valley #084 • HUC-12 Watershed: Upper Mullen Creek #160501030407 Lower Mullen Creek #160501030600 Bacon Rind Flat #160501030404
Source Water Protection Areas	• A SWPA provides a buffer around public water system wells, and it represents a precautionary indicator to safeguard the drinking water sources. • Three wells are managed by three small public water systems that provide drinking water to 25 people, 25 people, and 175 people, respectively. • 299 acres make up the SWPA in this basin.
Special Considerations & Issues	• No surface waters are used for public water supply. • Cottonwood Creek is the only surface water with "designated" Beneficial Uses in the groundwater basin.

SWPA Acreage	Type	Acres
Land Jurisdiction	Washoe County Non- Federal: BLM:	294 5
Land Use	Agricultural: Commercial/Industrial: Residential: Vacant:	15 220 1 55

Land uses and jurisdictions in the SWPAs are summarized in the adjacent table and illustrated by the Land Classification Figure.

The three small public water systems, Air Sailing, Inc. Gliderport, Washoe Regional Shooting Range, and the Springwood Equestrian Center are the multiple entities that share ownership and management in these SWPAs .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Dry Valley Creek
Pyramid Lake
Pyramid Lake Valley
Bedell Flat
Truckee River
Rodero Creek
Coal Creek
Warm Springs Valley
Lemmon Valley
Fort Defiance Creek
Boneyard Flat
Swan Lake
Lemmon Valley
Spanish Springs
Cottonwood Creek
Groundwater Basin
Land Use
Agricultural
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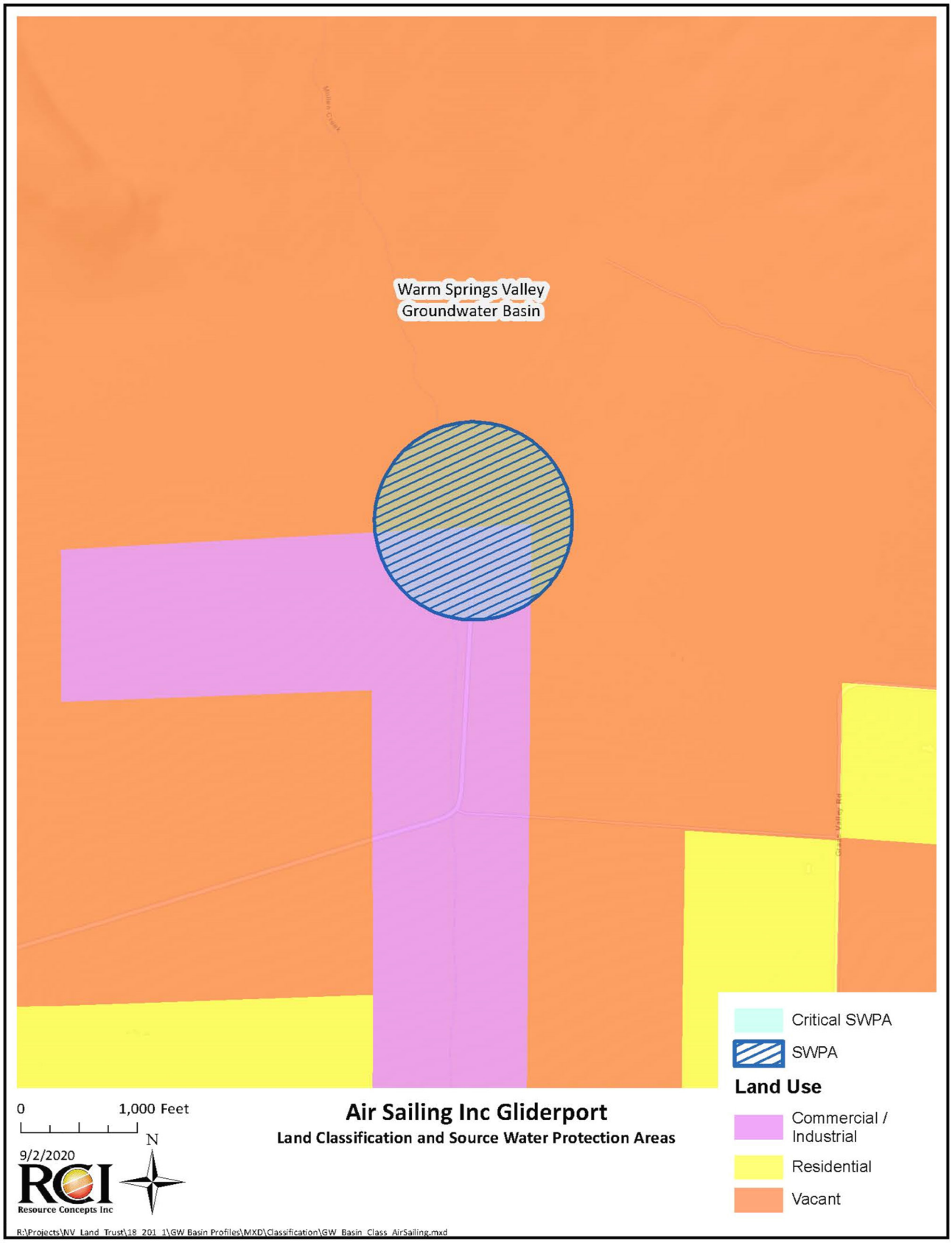
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Critical SWPA
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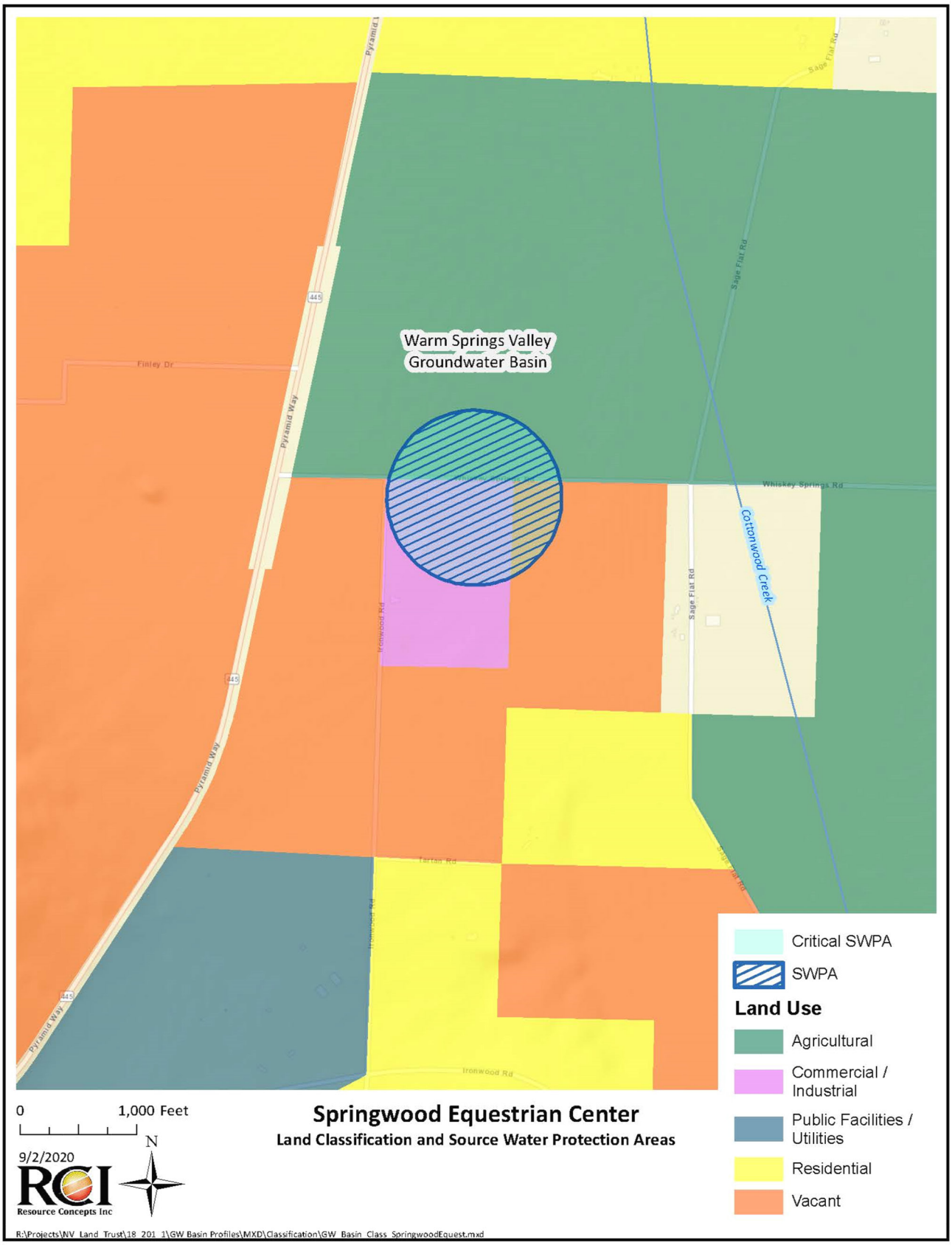
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Pyramid Way
Finley Dr
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Whiskey Springs Rd
Cottonwood Creek
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Land Use
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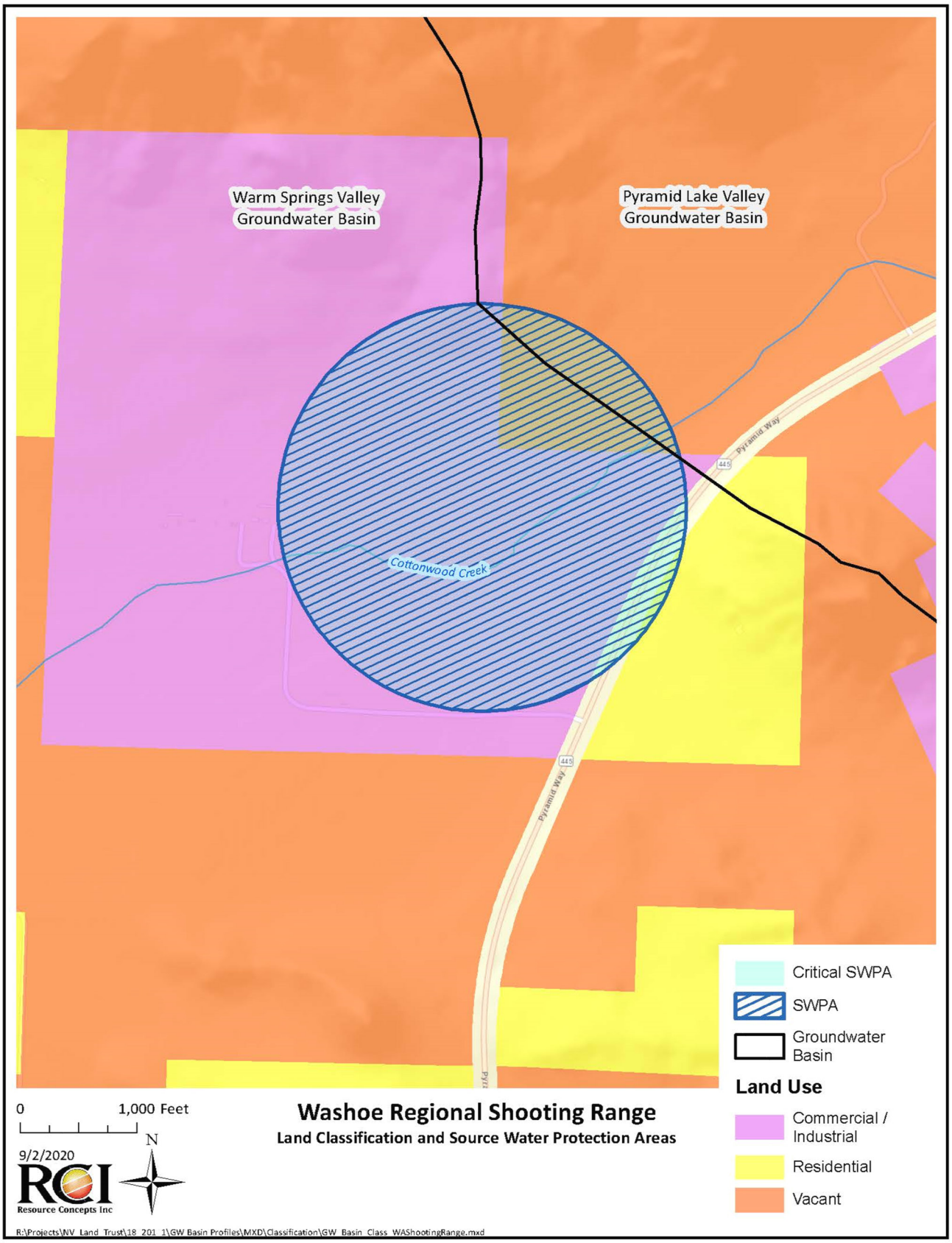
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Critical SWPA
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Water Quality Standards and Beneficial Uses

Water quality standards for surface water in the state of Nevada are established by Nevada Administrative Code (NAC) NAC 445A.11704 through NAC 445A.2234. The Warm Springs Valley is located within the "Truckee River Basin" region. Mullen Creek, which flows through the middle of the Washoe Regional Shooting Range SWPA, is tributary to Pyramid Lake. There are no designated beneficial uses (NAC 445A.1622) and water quality standards (NAC 445A.1624) for surface water bodies in the Upper Mullen Creek, Lower Mullen Creek, or Bacon Rind Flat HUC-12s. However, Cottonwood Creek, upstream of Mullen Creek in the Lower Cottonwood Creek HUC-12, is a Category 3 drainage (NAC 445A.1694). Category 3 drainages have insufficient information to make a use support determination that the water body is impaired for beneficial uses.

For groundwater, Nevada's policy is to protect all groundwater against deterioration in quality, in order to maintain supplies that are suitable for beneficial use.

Potential and Existing Water Quality Concerns

There are three wells used by the individual public water systems in this groundwater basin: the Air Sailing, Inc. Gliderport, the Washoe Regional Shooting Range, and Springwood Equestrian Center. These wells are highly valued because they are the only sources of public drinking water for these water systems.

Air Sailing, Inc. Gliderport is an educational soaring facility that hosts operations for small aviation. Aviation fuel, other fuel, and chemicals used to maintain aircraft may be stored and used at the facility. Leaks and spills of hazardous materials can be potential sources of groundwater contamination.

The Washoe Regional Shooting Range well resides in the Mullen Creek wash and contaminants could be mobilized in a wet season (NDEP, 2017). According to the Nevada Vulnerability Assessment Program Water System Report prepared by Nevada Division of Environmental Protection (NDEP) for the Washoe Regional Shooting Range, the well is moderately vulnerable to microbial contamination from nearby Mullen Creek. Mullen Creek is not an assessed water body by NDEP.

Agricultural activities surround the southern SWPA in Warm Springs Valley located at the Springwood Equestrian Center. In general, agriculture is likely to involve the use and storage of fertilizers and pesticides/herbicides that, depending on handling practices and irrigation, can contribute to groundwater quality issues. Horse stables are a source of animal waste which can also create potential water quality concerns.

Individual Sewage Disposal Systems, or septic systems, are associated with nitrate contamination of groundwater. Contamination can depend on depth to groundwater, flow direction, well screen depth, and the soil types between the septic tank and the well screen.

Strategies to Protect and Improve Water Quality

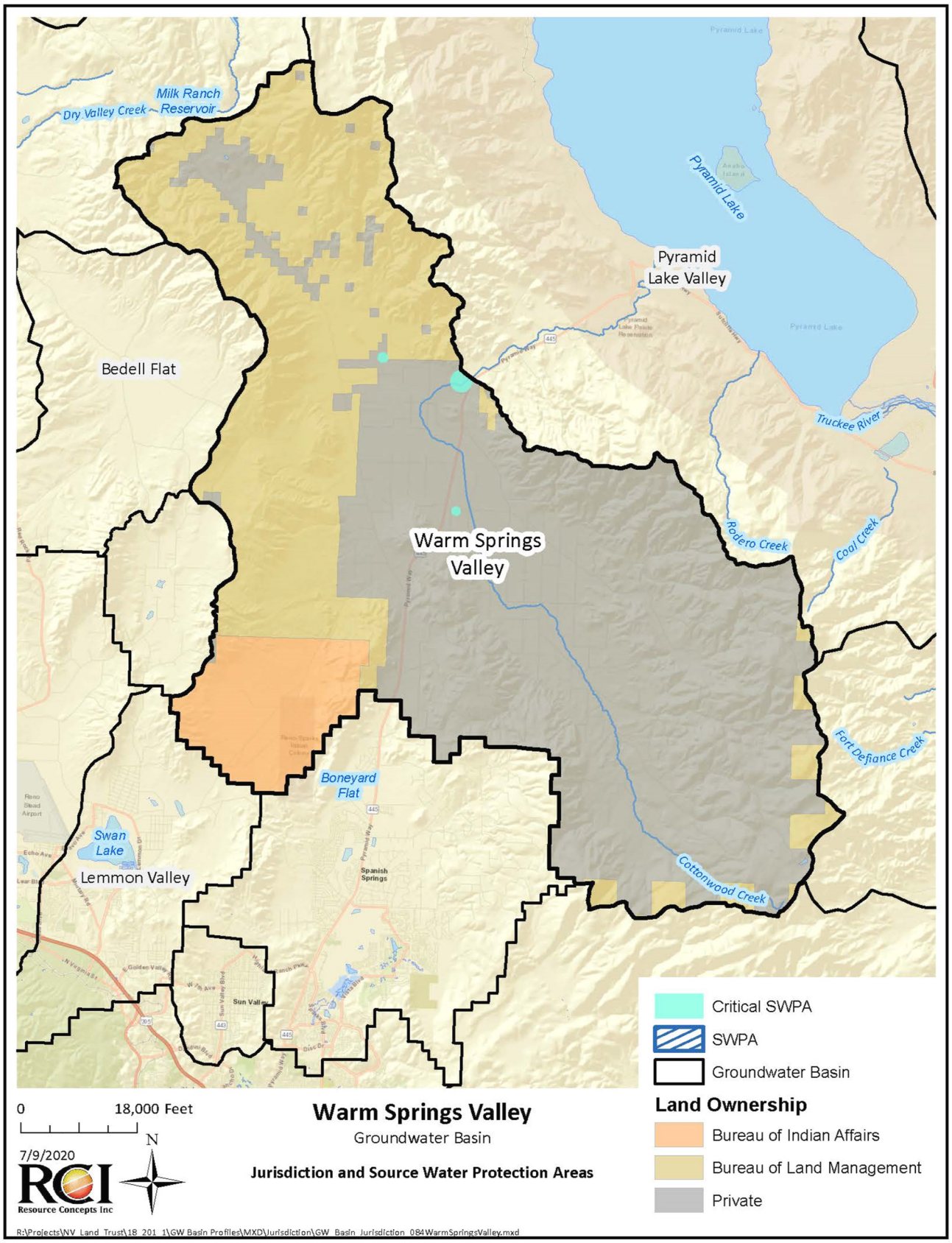
The water quality concerns identified in this basin can be addressed through management strategies described in this section, the proposed projects detailed in the Project Profiles, as well as applicable on-going water quality projects and programs described under Stakeholders and Plans. These strategies pertain to the entire basin but may be prioritized in SWPAs.

Source Water Protection Area Identification and Management

A SWPA is a management area surrounding a surface water or groundwater resource that supplies water for public consumption. Activities in these buffer areas can affect the quality of water downstream or underground. These management strategies acknowledge the value of these SWPAs to prevent future contamination of sources of drinking water.

The SWPA buffers in this groundwater basin are based on a 20-year time of travel for groundwater. These areas are illustrated on the Jurisdiction and Source Water Protection Areas Figure. The following objectives are significant in both future and on-going SWPA management:

- Inform landowners in SWPAs about their proximity to a valuable drinking water source and how they can help protect their water quality.
- Encourage coordination between Public Water Systems, landowners, and City or County planners to consider the importance of SWPAs in project reviews.
- Explore collaborative funding for water quality improvements and support the resource investigations needed to develop viable projects.
- Prioritize physical improvements in SWPAs to protect and improve source water quality.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Coal Creek
Warm Springs Valley
Fort Defiance Creek
Boneyard Flat
Swan Lake
Lemmon Valley
Spanish Springs
Cottonwood Creek
Sun Valley
Critical SWPA
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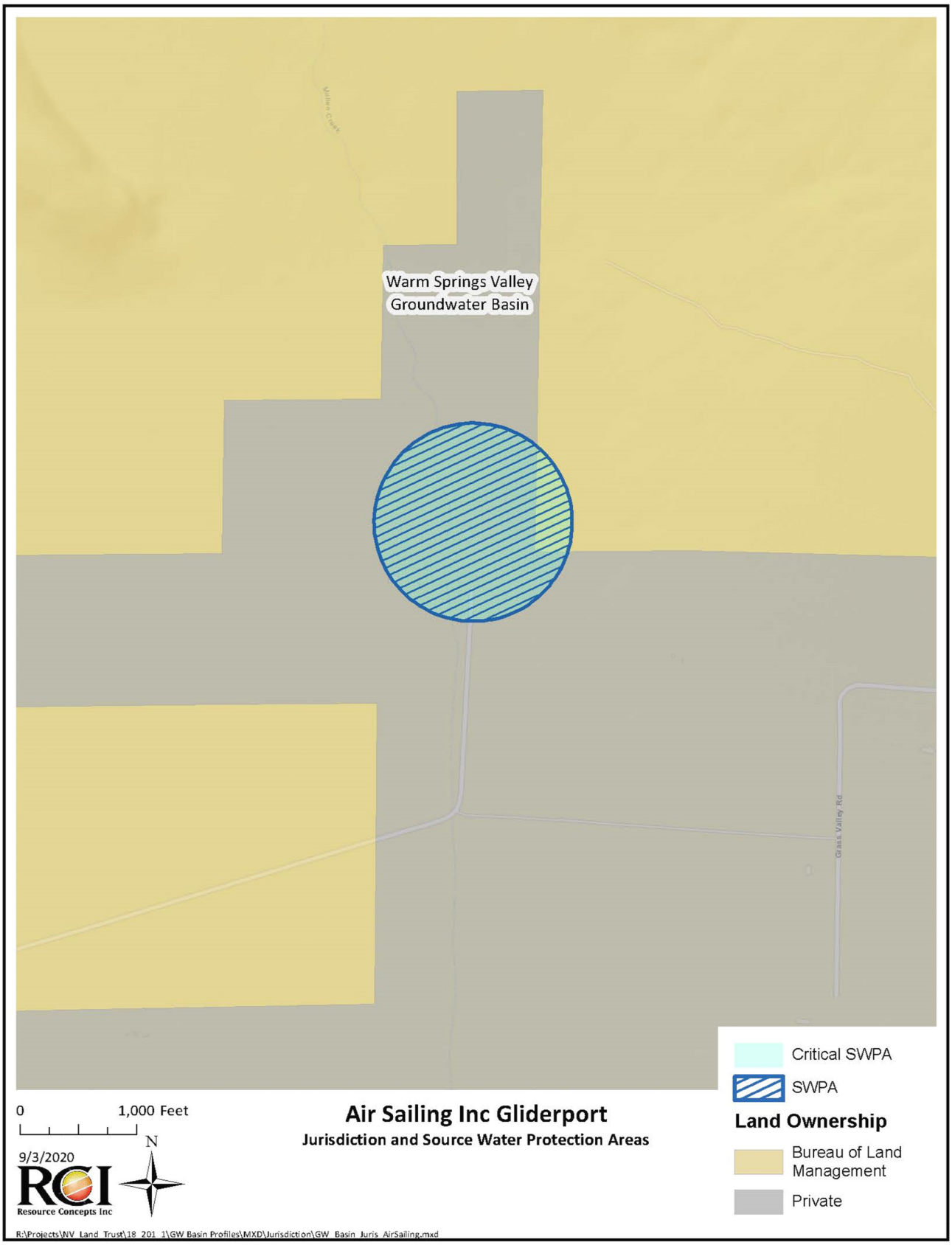
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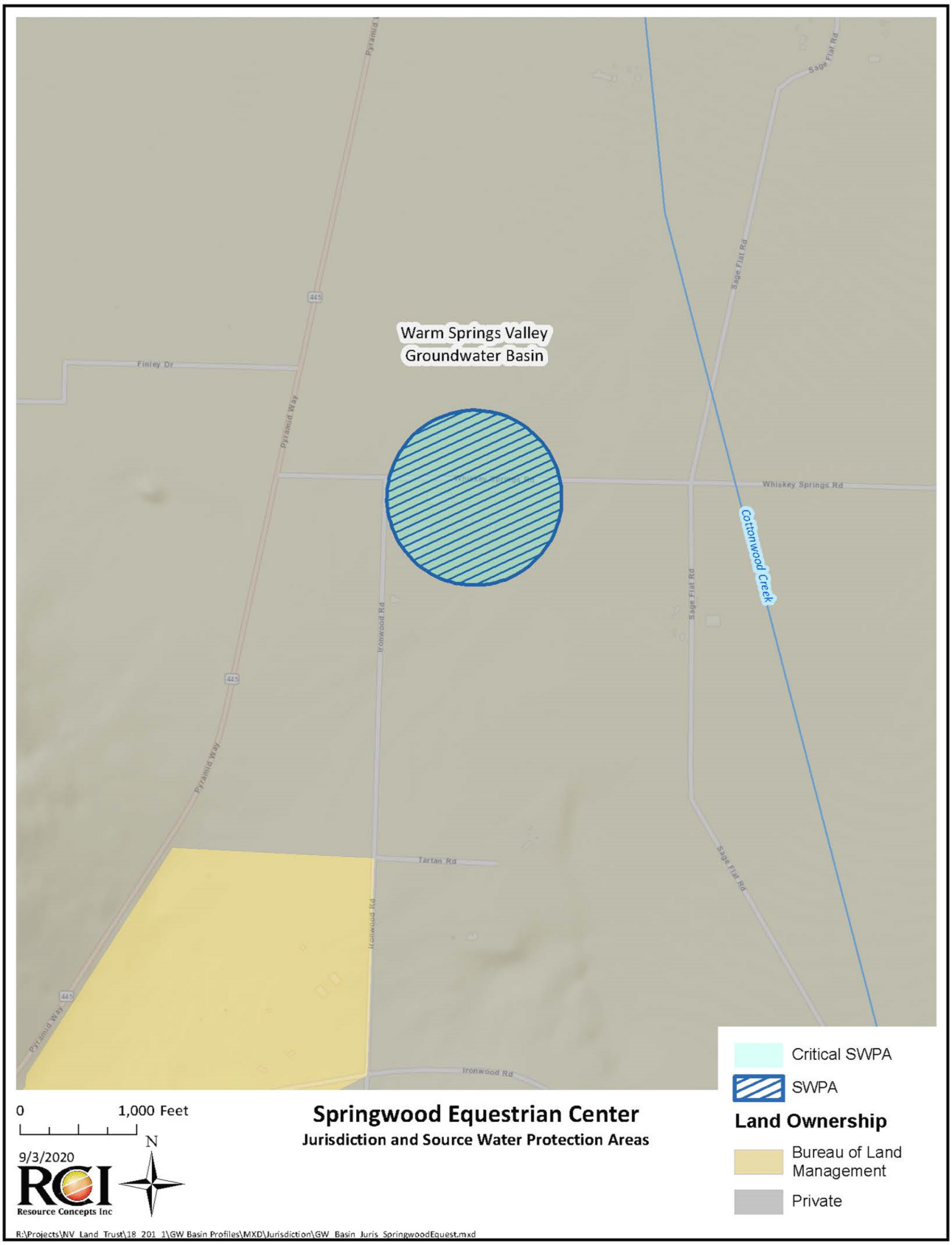
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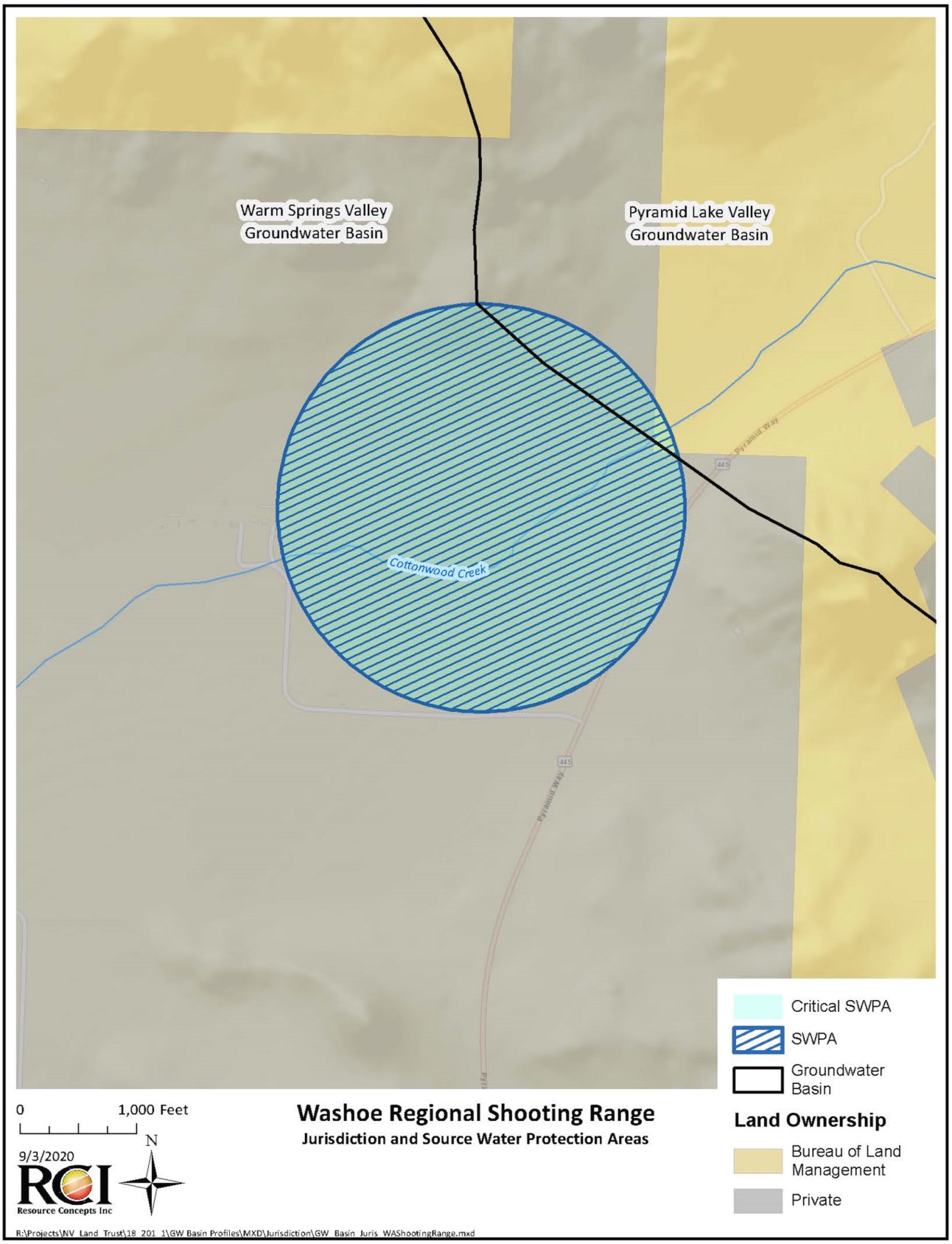
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Education and Outreach

The following education and outreach objective is intended to help effectuate positive actions to protect water quality:

- Inform landowners and developers within SWPAs about the importance of avoiding contamination and their proximity to a valuable drinking water source.

Resource Investigation and Planning

Stakeholders may consider supporting the following resource investigation and planning, which can help fill data gaps, inform implementation designs, and prioritize projects:

- Explore and engage funding sources available for small public water systems to expand monitoring, implement improvements, and develop contingency plans.

Water Quality Best Management Practices

Stakeholders may consider supporting the following Water Quality Best Management Practices, or BMPs, that may improve and prevent degradation to water quality resources:

- Water quality improvement projects.
- Proper abandonment of wells.
- Physical improvements prioritized in SWPAs for water quality improvement and protection.

Proposed Implementation Projects

Proposed implementation actions are generally described under the Strategies to Protect and Improve Water Quality. Specific implementation actions have been developed into proposed projects by local stakeholders and are described in Project Profiles. These Project Profiles include the information needed, as identified in the Environmental Protection Agency (EPA) guidance for nine critical elements for an endorsable watershed management plan or the Nevada Integrated Source Water Protection Program. Future projects could also be brought forward to funding agencies through:

- Demonstrating advancement of the strategies identified for this watershed in the Source Water and Watershed Protection Plan.
- Using the Project Profile format to establish consistency with the nine critical elements of an EPA endorsed plan.

As discussed in the following Stakeholders and Plans section, municipality and agency projects are also incorporated by reference.

Stakeholders and Plans

Stakeholder information and existing plans were used extensively in development of this Plan for Washoe County. These municipalities and agencies each have unique strategies and capital improvement plans that include water quality protection or improvement projects. These are updated regularly at differing timeframes (i.e. annually, every five years, etc.) according to their specific budgeting and planning processes. The applicable planning documents are briefly described and referenced in this section. Those projects pertaining to water quality protection and improvement are incorporated by reference.

Project Stakeholders	
• Bureau of Land Management • Nevada Division of Environmental Protection	• Washoe County • Washoe County Health District • Western Regional Water Commission

Bureau of Land Management

The Nevada BLM has Resource Advisory Councils (RACs) which allow community members to be involved in natural resource planning and management issues on BLM managed public land. Washoe County is a part of the Sierra Front-Northwestern Great Basin RAC which is administered through the BLM-Carson City and Winnemucca District offices. BLM Resource Advisory Councils-Nevada

The BLM also has specific Resource Management Plans, or RMPs, that apply to this basin. These plans generally outline the way that the BLM currently manages and intends to manage the multiple resources on public land. Within this basin, the following plans and sections are applicable:

- Carson City Consolidated Resource Management Plan (2001):

  RIP-1: Riparian Management discusses how riparian areas on BLM land should be managed, monitored, and maintained. The desired outcome in this section is to protect and maintain existing and potential fisheries and riparian areas in good or better condition.

  SWA-1: Soils, Watershed and Air Quality describes specific techniques and goals for all watersheds within the planning area, such as reducing soil loss, flood damage, and sediment damage from human activities.

  WAT-1: Water Resources discusses management for good water quality on public lands, such as watershed management plans, as an important administrative action.
- Carson City Fire Management Plan (2016):

  The Fire Management Plan (FMP) goal is to restore sagebrush ecosystems throughout the planning area. In doing so, the risk of wildfire and its negative effects should eventually decrease. Since wildfire is an issue in this basin, management to reduce its risk is a key planning component.

Nevada Division of Environmental Protection

The NDEP has a goal to preserve and enhance the environment of the State to protect public health, sustain healthy ecosystems, and contribute to a vibrant economy. Specifically, the Integrated Source Water Protection Program under the Safe Drinking Water Bureau works to help protect source water quality. This program offers technical assistance for source water protection projects. The program coordinates source water protection activities at the local, state, and federal levels, and encourages community-based protection and preventive management strategies to ensure all public drinking water resources are kept safe from future contamination. The 2010 Nevada Integrated Source Water Protection Program guidance document details the program components as well as the requirements for a State-endorsed Community Source Water Protection Plan.

Washoe County Health District

The Washoe County Health District has regulatory authority over a wide variety of programs and services in the Truckee Meadows including underground storage tanks, septic systems, all public water systems, domestic wells, water projects and community development, grading permits, solid waste management, and emergency preparedness. The Health District regulations are provided in several documents as listed below:

- Regulations of the Washoe County District Board of Health Governing Sewage, Wastewater and Sanitation. These regulations provide the minimum requirements to be followed by any person developing property served by an on-site sewage disposal system. These requirements are promulgated to prevent the spread of disease, protect the water quality of this County, and ensure the on-site sewage disposal systems function properly.
- Regulations of the Washoe County District Board of Health Governing Well Construction. These regulations provide minimum requirements to be followed by any person when drilling and plugging specific kinds of wells. A well construction permit is required to drill a well for consumptive use or monitoring wells. These requirements are primarily promulgated to protect the quantity and quality of the waters of this County from waste and contamination, and to provide public protection by enforcing proper construction and plugging of wells.
- Regulations of the Washoe County District Board of Health Governing Solid Waste Management. These regulations protect water quality through the regulation of municipal solid waste landfills.

Washoe County

Activities in Washoe County are reviewed according to the Master Plan Planning Areas. The Warm Springs groundwater basin area is included in the Warm Springs/Rural planning area. The County has Citizen Advisory Boards (CABs) which provide important community perspective on local issues to the Washoe County Board of Commissioners. The Warm Springs area is wholly within the Warm Springs/Rural CAB (CAB Boundaries).

The Washoe County Master Plan (2008) has Goals and Policies for Public Services and Facilities, and Open Space and Natural Resource Management. Applicable sections include:

- Article 418, Significant Hydrologic Resources, which regulates development activity within and adjacent to perennial streams to ensure that these resources are protected and enhanced. (Note: this does not apply to the Truckee River).
- Article 420, Storm Drainage Standards, which sets forth standards for ensuring that both private and public development provides adequate protection for citizens and property. Therefore, it minimizes and controls erosion and pollution impacts on the natural environment, and additionally, minimizes maintenance costs for drainage and flood control systems.
- Article 421, the Storm Water Discharge Program, which protects and enhances the water quality of watercourses, water bodies, groundwater, and wetlands in a manner pursuant to and consistent with the Clean Water Act.
- Article 810, Special Use Permits, which provides a method of reviewing certain uses to determine if they have the potential to adversely affect public facilities in the vicinity.

Washoe County also provides comprehensive services for construction and maintenance roads, landscaping and drainage facilities, county-wide planning and code compliance, and emergency response services for fire and hazardous materials. All of these roles contribute to preserving and improving water quality.

Western Regional Water Commission and the Northern Nevada Water Planning Commission

The Western Regional Water Commission (WRWC) focuses on improving water resource planning at the regional level and facilitating coordinated resource management among City of Reno, City of Sparks, Washoe County, Truckee Meadows Water Authority (TMWA), Truckee Meadows Water Reclamation Facility (TMWRF), South Truckee Meadows GID, and Sun Valley GID.

The Northern Nevada Water Planning Commission (NNWPC) is a technical advisory panel that reports to the WRWC. The NNWPC develops and updates a Comprehensive Regional Water Management Plan (RWMP) and makes recommendations to the WRWC for adoption. In addition, the NNWPC develops priorities and an annual budget for the Regional Water Management Fund, also for recommendations to the WRWC.

The Comprehensive Regional Water Management Plan includes several applicable objectives:

- Objective 1.2 Provide for a Sustainable Water Supply and an Acceptable Level of Service to the Community (including protecting groundwater recharge areas).
- Objective 1.3 Implement measures to protect and enhance water quality for a sustainable water supply (including source water protection).
- Objective 2.1 Promote Efficient Use of Resources (Reduction of Non-Point Source Pollution for TMWRF Pollutant Credit).
- Objective 2.2 Manage wastewater for protection and enhancement of water quality.
- Objective 3.1 Effective and integrated watershed management (protection of human health, property, and water quality, including storm water).

References

NDEP BSDW, Vulnerability Assessment Program (VAP) Public Water System Report, 2017.

NDEP BWQP, Nevada Division of Environmental Protection, 2016-2018. Nevada 2016-2018 Water Quality Integrated Report

NDEP, Nevada Integrated Source Water Protection Program, 2010. Nevada Integrated Source Water Protection Program

Washoe County Master Plan, 2008. Washoe County 2008 Master Plan, Washoe County Health District

WRWC, Western Regional Water Commission, Comprehensive Regional Water Management Plan 2016-2035 Update, 2017. WRWC Comprehensive Regional Water Management Plan 2016-2035