

**Source Water and Watershed Protection
in Washoe County
Supported by:**



Kim Borgzinner,
Bureau of Safe Drinking Water



**Truckee River
Watershed Management Plan**
Nonpoint Source Branch
Bureau of Water Quality Planning

Birgit Henson,
Bureau of Water Quality Planning

Program Overview

- **Groundwater Quality**
- **Surface Water Quality**

 **NOT Water Quantity**



Program Overview

Voluntary Stakeholder Driven


 NOT mandated issues



Program Overview

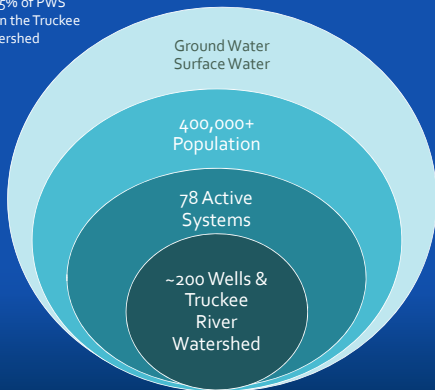
• Water Quality

- Public Water Systems
- Truckee River Watershed

 NOT Private Wells
NOT areas with existing watershed plans



Roughly 75% of PWS wells are in the Truckee River Watershed



Washoe County

Program Questions?



Plan Development Process

1. Form Team
2. Gather information
3. Characterize groundwater and watershed
4. Contaminant evaluation
5. Protection strategies
6. Action Plan and Public Education
7. Public review and local approval

Local Planning Team

- Reno, Sparks, Washoe County
 - Planners, Engineers, Public Works, Remediation
- Stormwater Committee
- Public Water Systems, TMWA, Utilities Inc., etc.
- WRWC, TMRPA,
- Emergency responders
- Educators—Pubic, Private, GBI, SNJ
- Land Managers—BLM, USFS
- TNC, NLT, KTMB, others



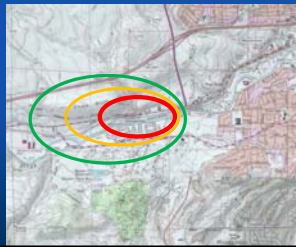
Local Planning Team Role

- Collaborative Plan Goals and Objectives
- Share ideas, plans and data
- Identify other stakeholders
- Prioritize water quality issues and threats
- Support plan adoption and implementation



Gather information Characterize groundwater and watershed

- Truckee River Information Gateway
- Data gap analysis
- Existing WHPPs
- Watershed Maps



Contaminant evaluation

- Chemical spills
- Underground tanks
- Urban slobber
- Soil erosion



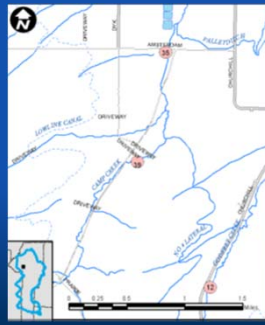
Strategy Development

- Coordinated planning
- Education
- Projects
- What works for your community?



Action Plan & Project Description

- Funding
- Schedule
- Milestones
- Load reductions
- Implementation
- Monitoring



Project Examples

- Close unused wells
- Wellhead security improvements
- Stream restoration
- Stormwater BMPs



Education and Outreach

- Examples:
 - Elementary School Education
 - Community Leaders
 - Outreach to Businesses
 - Training for Emergency Responders



Public Review and Support



Guidance Documents



Nevada Nonpoint Source Management Plan

2015-2019





Source Water & Watershed Protection Program in Washoe County

Where does public drinking water come from in Washoe County?

- The Truckee River provides 85% of the public drinking water
- Over 200 wells provide the rest of the public drinking water

What impacts the water quality of the Truckee River and wells?

- Excessive use of lawn fertilizers, pesticides, and water
- Failure to pick up pet waste
- Dumping household chemicals, batteries, fluorescent lights, motor oil, antifreeze, human feces, etc.
- Septic systems
- Leaking underground tanks storing fuel or chemicals
- Soil erosion
- Urban storm runoff from yards, roads, rooftops, and parking lots
- Lack of riparian buffers (natural vegetation along streams and rivers)
- Commercial or industrial accidental spills

What can we do to protect our water quality?

A comprehensive Clean Water Protection Program in Washoe County is being supported by the Nevada Division of Environmental Protection (NDEP). This program will look at threats to community drinking water and actions to minimize or eliminate risks to water quality.



What will the Clean Water Protection Program accomplish?

A Clean Water Protection Plan will be prepared to evaluate water quality protection and describe projects identified by the team. These descriptions will outline the projects including the priority, costs, schedule, and benefits. The clean water protection planning process in Washoe County is anticipated to be complete by 2020.

Who are the Stakeholders that will prepare the Clean Water Protection Plan?

Input from community stakeholders is needed to ensure that the plan meets the needs of the local communities. Stakeholders include:

- City of Reno, City of Sparks, Washoe County
- Truckee Meadows Water Authority
- Community planners, engineers, and educators
- Washoe County Health District
- Public water system owners and operators
- Other interested parties

How will this program be managed?

This is a dynamic, voluntary, stakeholder-driven process. NDEP's consultant, Resource Concepts, Inc. (RCI), will facilitate all aspects of developing the plan and carrying the plan forward.

How much does this Clean Water Protection Program cost?

Upfront costs for this planning effort are funded through the NDEP by U.S. EPA funds. The completed plan will open the door for local, state and federal clean water project funding.

How can my agency or organization become involved to help?

We are happy to come meet with your organization. Your organization can request participation by contacting the NDEP indicating your desire to help and requesting participation as a stakeholder.



Where can I get more information?

Information is available on the web at: http://www.rci-nv.com/source_water_protection/

Public Water Wells

Kim Borgzinner

Integrated Source Water Protection Program
Coordinator

Bureau of Safe Drinking Water

Nevada Division of Environmental Protection

775.687.9503 kborgzinner@ndep.nv.gov

Truckee River Watershed

Birgit M. Henson, CPM

Nonpoint Source Branch Supervisor

Bureau of Water Quality Planning

Nevada Division of Environmental Protection

775.687.9550 bhenson@ndep.nv.gov

Fun Facts about Public Drinking Water Sources in Washoe County (February 2017 Draft)

Drinking Water Sources

- Groundwater –172 Active Wells (73 TMWA Wells, 99 Wells in Other Systems)
- Surface Water – Truckee River (TMWA) and Lake Tahoe (Incline Village)

Types of Public Water Systems

Type	Active	Inactive	Proposed	Total
• Non-Community	37	11	1	48
• Community	29	22	0	51
• Non-Transient Non-Comm	12	3	0	15
Total Public Water Systems	78	36	1	114

Public Water Systems in Washoe County

4th Street Bistro	Incline Village GID	Sand Harbor State Park
Air Base Inn	Johnny Cassinaris Restaurant	Silver Knolls Mutual Water Company
Air Sailing Inc Gliderport	Ke Ta Mobile Home Park	Sky Ranch Water Service Corporation
Animal Ark	Lemmon Valley Horsemans Park	Sky Tavern
Arrowhead MHP	Lightning W	Slide Mountain Ski Area
Bar M Bar	Magic Carpet Golf	Springwood Equestrian Center
Biglieri Water System	Mels Diner	Sutcliffe Mobile Park
Black Rock Station	Memorial Point State Park	Stampmill
Boomtown Hotel And Casino Inc	Mount Rose Bowl Homeowners Association	Steamboat Springs Waterworks Inc
Bowers Mansion	MSHK Properties LLC	Sun Valley GID
Brasserie Saint James	Mt Rose Campground USFS	Sunrise Estates
Chucks Circle C Market	Mt Rose Ski Area Ski Reno	The Vine
Cold Springs Meetinghouse LDS	Natchez Gym	Truckee Canyon
Conestoga MHP	Natchez School	Truckee Meadows Water Authority
Crosbys Lodge	NDOT Wadsworth Rest Stop	Urban Roots
Crystal Peak Park	North Valley Bus Facility	Utilities Inc Of Nevada
Crystal TP	Old Forty West Motel	Verdi Meadows Utility Company Inc
Davis Creek Park	Old Washoe Estates	Verdi Mutual Water Company
Empire Mining Company	Pleasant Valley School	Verdi School
Foothill Trailer Park	Reno Sahara Trailer Park	Wadsworth Mobile Home Park
Franktown Meadows	Reno Technology Park Water Company	Washoe Lake State Park
Gerlach GID	River Bend MHP	Washoe Lake State Park N Boat Ramp
Gold Ranch Casino	Riverbelle Properties LLC MHP	Washoe Regional Shooting Range
Golden Valley Park	Riverbelle Properties LLC Sasquatch Inn	Washoe Valley Christian Church
Grandview Terrace Water District	Rosemount Water Co	Washoe Valley Meetinghouse Facility
Granite Construction		Webb Mobile Home Park
Granite Hills Baptist Church		

Entity	Contact / Involvement
City of Reno	On-going coordination with: <ul style="list-style-type: none"> • Theresa Jones, Drainage Engr. • Kerri Lanza, Engineering Mgr. Discussions with: <ul style="list-style-type: none"> • Naomi Duerr, City Council • Ryan Bird, Maintenance & Ops Mgr., Storm, Sewer
City of Sparks	Discussions with: <ul style="list-style-type: none"> • Toby Ebens, Env. Contrl. Super. • Andy Hummel, Utility Mgr. • Armando Ornelas, City Planner • Kristopher Dahir, City Council • Karen Melby, Development. Serv. Mgr.
Washoe County Health District	Discussions with: <ul style="list-style-type: none"> • Jim English, EHS Supervisor
Nevada DEP	On-going coordination with: <ul style="list-style-type: none"> • Kim Borgzinner, Source Water Program Lead • Birgit Henson, Nonpoint Source Program Lead
NNWPC / WRWC	On-going coordination with: <ul style="list-style-type: none"> • Chris Wessel, Water Mgmt Planner • Jim Smitherman, Water Res. Progr. Mgr. *Board Presentation to NNWPC 2016-12-07; Letter of support WRWC 2017-01-18
One Truckee River Project	On-going coordination with <ul style="list-style-type: none"> • Lynda Nelson, OTR Lead
Sun Valley GID	Contact with <ul style="list-style-type: none"> • Darrin Price, General Manager
TM Stormwater Committee	On-going coordination with: <ul style="list-style-type: none"> • Theresa Jones Committee Coordinator *Discussion with Committee on 2016-10-27
TMWA	Ongoing coordination with: <ul style="list-style-type: none"> • Kara Steeland, Hydrologist • Christian Kropf, Hydrogeologist • John Enloe, Dir. Nat. Res. • Paul Miller, Manager Operations and Water Quality • Robert Charpentier, Communications Specialist *Board Presentation and letter of support on 2017-01-18
TMRPA	Reached out to <ul style="list-style-type: none"> • Kim Robinson, Exec. Dir
Washoe County	Meeting with <ul style="list-style-type: none"> • Bill Whitney, Planning Director • Bob Webb, Planning Manager • Vahid Behmaram, Water Management Planner Coordinator
Washoe Co CTM Remediation District	Discussions with: <ul style="list-style-type: none"> • Chris Benedict, Program Mgr. • Ben Jesch, Licensed Engr.
Washoe Storey Conservation District	Discussions with: <ul style="list-style-type: none"> • Kevin Roukey, Director *Board Presentation on 2017-01-30

Examples of Funded Projects through the Source Water Protection Program and the 319 Grant Program

Manage Open Space for Recreation & Water Quality

Kings Canyon Trailhead Improvements

The North Kings Canyon Creek is an important source of drinking water for Carson City. The water was being polluted by sediment eroded from social trails and off-trail hiking, graffiti, trash and other **human** disturbance of the riparian corridor. The Source Water Protection Program and Resource Concepts, Inc. assisted in bringing local agencies and community organizations together to develop solutions such as **fencing, trail stabilization, trail signage**, a reconstructed trailhead with a “drinking water protection” kiosk.

This collaborative project brought together partnerships to protect drinking water and raised the community’s awareness regarding where their drinking water comes from.

- Carson City Public Works
- Carson City Parks, Recreation, and Open Space
- Nevada Division of Forestry
- Nevada Division of Environmental Protection
- US Forest Service
- Washoe Zephyr Consulting
- Great Basin Inc.
- Boy scouts of America
- Basalite
- Tangerine Design



Informational Kiosk and stabilized trail.

Add Wellhead Protection Areas to Development Review



Wellhead Protection Area GIS Mapping

City of Fernley Municipal Code Update

In June 2013, The City of Fernley requested technical assistance from the Source Water Protection Program to include source water protection areas and sustain groundwater quality in Chapter 19 of their municipal code. The code included a **checklist tool for businesses in “5-year Source Water Protection Areas”** to certify to the City that they comply with existing local, State and Federal permits that control pollutant sources (hazardous materials use and storage, storm water runoff, spill prevention, etc.).

This project raised awareness about where drinking water comes from, and how to prevent pollution through daily business activities, as well as improved local agency communication with property owners and State regulators.

Identify and Plug Unused Wells

Communities in Five Counties

Old wells be conduits for pollution to contaminate drinking water and the Source Water Protection Program has funded projects to **inventory and plug unused wells** in several communities. In Churchill County, a screening questionnaire was sent to over 200 property owners to locate unused wells in source water protection areas. In the Dayton area, Lyon County Utilities surveyed property owners, then collaborated with NDEP, a local driller, and homeowners to access and properly plug more than 15 old private wells near their public wells. Small public water systems in Nye County, Douglas County (Indian Hills GID) and Carson City (Stewart Complex Water System) have also received technical assistance and funding to abandon unused wells located in wellhead protection areas.



Small public water system wellhead.

Examples of Funded Projects through the Source Water Protection Program and the 319 Grant Program

Improve De-icing Methods & Reduce Sediment to Waterways



Washoe County de-icing operations improvement.

Washoe County BAT Material Spreaders Purchase and Operation

Washoe County received 319 grant funds in 2014 to purchase two brine and abrasive material spreaders. The ability to apply brine is new and these spreaders can apply sand, salt and brine for de-icing and anti-icing more accurately and consistently than their older equipment. The updated equipment and operations strategy will **lower annual material applications by 25%**. The pulverization of sand spread on icy or snow-covered roads is major source of fine sediment to waterways.

This 319-funded project helps to reduce runoff from de-icing and anti-icing activities to waterways.

Install “Source Control” Stormwater BMPs

Clark County Dog Waste Collection Program

Dog Waste Pick-Up Stations across the Las Vegas Valley in communities with Homeowner’s Associations that commit to maintain the stations. Each station includes a sign that informs the public about the problems with dog waste that is left on the ground. As of March 31, 2016, **46 stations were installed and thousands of pickup bags dispensed**. It is estimated that these stations have resulted in the removal of 34,050 pounds of dog waste from the watershed thus far, and further removal is expected to occur in future years. This initial removal translates to approximately 238 pounds of nitrogen, and 8.5 pounds of phosphorus that has been prevented from being delivered by runoff to the Las Vegas Wash and ultimately, Lake Mead, Las Vegas Valley’s drinking water source.



Repair Eroding River Banks and Restore Hydrologic Functions



River bank erosion and stabilization.

Bank Stabilization Projects, Dayton Valley Conservation District

Many sections of the Carson River banks are unstable due to historic channel straightening and mining, urbanization and agricultural activities. The Dayton Valley Conservation District has used 319 grants to **stabilized eroded stream banks and protect riparian vegetation** by regrading slopes, planting willow bundles, installing rock rip rap and placing juniper revetment along bank toe. These projects have helped to reduce the amount of sediment in the Carson River.

Prioritize Multi Year Watershed Based Erosion Reduction Projects

Ash Canyon Erosion and Sediment Control

Ash Canyon Creek is an important source of drinking water for Carson City. Since 2012, Carson City has implemented erosion control projects with the assistance of 319 grants. Efforts have included completion of the Ash Canyon Erosion Control Plan, and **priority BMP implementation and public education** and outreach aimed at reducing erosion and subsequent sedimentation into Ash Canyon Creek and ultimately the Carson River. These projects have reduced the amount of sediment reaching Ash Canyon Creek during large storm events or during wet years, thus protecting drinking water and the water quality of the Carson River.



Eroded duplicate OHV road closed in the Ash Canyon watershed.

Draft Washoe County Team Meeting Schedule

Dates	Meeting Topics and Milestones
2017	
March 9	Team Formation -- Core Team
April 27	Team Formation – Stakeholder Group
June 15	Data Gathering-- Goals and Objectives
August 3	Characterize groundwater and watershed
September 21 November 9	Contaminant Evaluation for Groundwater and Truckee River Watershed
2018	<i>Report sections will be provided to the team for review throughout the process as applicable.</i>
January 4	Management Strategies
February 15 to December	Action Plan and Public Education Project Description Development and Prioritization
2019	<i>Report sections will be provided to the team for review throughout the process as applicable.</i>
February	Plan Review
May	Final Plan Complete
May to December	Public Review and Local Approval Process