Appendix F

Public Education and Outreach Plan

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Attachments

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1.0 Introduction

The Community Source Water Protection (CSWP) Plan for Public Water Systems in Churchill County identifies increasing community awareness of the source of their drinking water supply and how they can help to protect that supply as one of the plan goals. The education and outreach is detailed in the CSWP Action Plan to achieve this goal. This Public Education and Outreach Plan (Education Plan) provides a variety of tools and tactics to implement the public education and outreach actions.

Source water protection programs in Nevada are initiated and implemented at local levels and depend on the willingness of a community to support the local program. Therefore, public education and participation is an important strategy to enable community members to be stewards of their local drinking water sources, to promote voluntary protection efforts, and to build public support.

The following are useful contacts for implementing this Education Plan.

Contacts

Organizations	Phone Number	Email Address
Churchill County		
Planning Department	(775) 423-7627	planning-director@churchillcounty.org
County Manager	(775) 423-5136	countymanager@churchillcounty.org
Churchill County GIS	(775) 423-7627	planning-gis@churchillcounty.org
Emergency Management	(775) 423-4188	ccem@phonewave.net
Sand Creek PWS	(775) 428-0264	building-mh@churchillcounty.org
Technical Resources		
Truckee Carson Irrigation District	(775) 423-2141	rusty@tcid.org
Ag in the Classroom, Nevada Farm Bureau, Churchill County	(775) 423-6056	wolfpack@cccomm.net
Carson Watershed Subconservancy District	(775) 887-7450	edjames@CWSD.org
Resource Concepts, Inc. and Subconsultants	(775) 883-1600	jill@rci-nv.com lynn@rci-nv.com

2.0 Education Plan Goals

1. Help the target audiences to gain understanding of and interest in doing their part to protect community source water.
2. Motivate a change in practices and personal behavior to prevent contamination of source water per the drinking water protection goals of the Community Source Water Protection Plan for Public Water Systems in Churchill County.

3.0 Target Audiences and Educational Focus

The Local Planning Team that developed the CSWP Plan, identified residents, businesses and agricultural land managers in the greater Fallon area in Lahontan Valley as the primary target audience. The recharge area for the SWPAs includes most of the developed and agricultural areas in the valley west of Crook Road. The primary contamination threats to source water are improper chemical storage, use and disposal. The primary ways chemicals can contaminate source water are either through spill infiltration into the ground or by old unprotected wells or wells with poor seals.

The community has been growing since the Newlands Project began in the early 1900s. The Local Planning Team indicated that there are numerous old unused wells, orphaned wells and wells with poor seals in the source water protection areas. These types of wells are direct conduits to transmit contaminants to the groundwater. Agricultural areas typically are the older developments. These areas may have old wells that are not in use and may or may not be protected. Residents, businesses and agricultural lands may have a variety of chemicals and products that could leach into the groundwater or be transmitted down an old well if not property protected from the elements.

Currently there are about 1400 parcels with private wells and over 1600 parcels on septic systems within the source water protection areas. This combination of wells and septic systems in the bottom of the valley can lead to water contamination if the wells have poor seals.

4.0 Educational Tools for Target Audiences in Churchill County

During the process of preparing the CSWP Plan, several educational tools were developed to help facilitate immediate public education and awareness for source water protection. These tools can be used in conjunction with the successful Ag in the Classroom program, or other community events or meetings.

Maps of Source Water Protection Areas

Source Water Protection Areas can be depicted over a variety of base maps such as topography, aerial photos, or streets to illustrate their location relative to where people live and work.

The Watershed and Groundwater Physical Models

The watershed and groundwater physical models used together with the SWPA maps are powerful three dimensional education tools to illustrate how source water can be contaminated from every-day activities. The watershed model shows how contaminants from industry and residential activities can be washed into our drainages. The groundwater model illustrates how contaminants in drainages can infiltrate into the ground and eventually contaminate a drinking water well. These models are available for purchase or may be borrowed from the NDEP. Attachment B includes a brief example for how the models can be used in a classroom.

- The watershed model may be purchased from Enviroscapes at http://www.enviroscapes.com/nonpoint-source.html
- The groundwater model may be purchased from University of Nebraska, Lincoln http://groundwater.unl.edu/

5.0 Useful CSWP Information

The CSWP Plan contains a variety of information that can be used when conducting public education and outreach. This information includes:

- Names and affiliations of the individuals who helped prepare the CSWP Plan (see page i);
- Source Water Protection Area maps (CSWP Plan Appendix A);
- A map of the areas around the drinking water source(s) that may be susceptible to contamination (see the CSWP Plan Appendix D);
- Inventory of activities and conditions that may adversely affect drinking water quality (see the CSWP Plan Appendix D);
- The Management Strategies that community intends to use to protect its drinking water sources (see the CSWP Plan Section 3.4);
- The Contingency Plan describing what the community would do to replace its drinking water supply if the source became contaminated (see the CSWP Plan Section 3.5); and
- The Action Plan that provides a schedule for implementation of the Public Education Plan (see the CSWP Plan Appendix E).

6.0 Educational Messages and Discussion Points

The presenter(s) should engage their audience in order to bring the source water protection concepts into a person's own experience. The discussions before, during and after the presentations help to facilitate this. The following questions can help to kick start open communication.

When you turn the tap in your home where does the water come from?
Most people do not know where their water comes from unless they own their own well. If you are on your own well, then the water comes from the shallow aquifer in the immediate vicinity of your well. If you are connected to the public water system then your water comes from a source water protection area, is treated and piped to your home.

What is Source Water Protection?
Source water protection is a way to prevent drinking water from becoming polluted. Much can be done to prevent pollution, such as the informed use of land and proper use and disposal of chemicals.

What are source water protection areas?
In Churchill County, source water protection areas are specific areas surrounding public water supply wells as illustrated by the source water protection figures. Typically they include a broad recharge area surrounding the wells.

Why is it important to protect water at the source?
Protecting public drinking water supplies *before* pollution enters our drinking water supplies lessens potential health issues, the high costs associated with water treatment, and source water development. People in Churchill County can help protect our source water by managing land uses and human-caused sources of contamination to prevent pollution *before* it enters our drinking water supply.

What contaminates the water we drink?
There are numerous pollutants that can contaminate surface and ground water. Some contaminants are a result of improper disposal of common household and business products such as cleaning products, waste oil, pet waste, fertilizers and pesticides. These and other harmful products, when improperly used, stored or disposed of may threaten to contaminate our drinking water.

7.0 Other Education and Outreach Tools

The CSWP Local Planning Team should consider themselves Plan Ambassadors. The entire Team should take every opportunity to convey the essence and objectives of the CSWP Plan. The following tactics help increase knowledge and change behavior in accordance with protecting our drinking water sources.

Nevada Agriculture in the Classroom – Agriculture in the Classroom is an existing program that helps students develop an understanding of the food, fiber and landscaping systems and how agriculture affects their daily lives. The source water protection messages fit well and could be added to this existing program.

Newsletter inserts – scheduled to be distributed as newsworthy information becomes available. Newsletters may include updates on the CSWP Plan, testimonials collected, pertinent Nevada Division of Environmental Protection (NDEP) news, information on what other communities are doing to protect their water resources, and real time changes happening at businesses or source water sites. Photos and links to information make newsletter inserts more interesting.

Fact sheet, brochures, handouts, flyers, etc. – can be effective forms of communication. The key is to plan ahead as to how you want the audience to use them, how you will get them to the audience, and how you will evaluate their effectiveness. Libraries, community centers, builder associations, and economic development authorities can be useful locations. However, unless your audience knows the materials are available at these locations, the materials will not be successful.

Inserts in water bills – The larger water purveyors may want to insert information in water bills periodically to communicate drinking water source protection measures.

Press releases – developing relationships with local media and pitching stories and event ideas to them is an effective way to reach several audiences including business leaders and residents. A list of media outlets for the Churchill County area and a press release template are attached to this Education Plan. Contact persons at these outlets can change quickly so it is important to confirm this information before moving forward.

Website inserts and links – The Local Planning Team may choose an appropriate website to serve as the repository for education materials. The website could provide information businesses regarding how they can become source water protectors and share stories of how they are helping protect their community's source water. If a website is created, then all tactics should include a website address. Photos and links are very helpful on a website.

Public meetings/conferences/community events – are identified in the Action Plan. Publicize the meeting or event and use other tactics to support the education at the meeting, conference, or event.

Posters – purveyors may want to create appropriate signage as a reminder of best management practices related to protecting your community's drinking water source.

Employee training on materials handling practices, emergency spill situations – purveyors should have these items on hand and, if asked, they may consider including information on the importance of protecting your community's source water.

Social media (blogs, podcasts, Facebook, YouTube, Twitter, LinkedIn) – can be a crucial component to communications and is worth consideration. Through websites, blogs, YouTube, etc., audiences have an opportunity to get information anytime. It can also provide an interactive experience. Be aware this kind of media changes rapidly.

Site signage – at businesses that use best management practices to lessen their impact on source water indicating their dedication to their community's most important resource, drinking water. For example:

> [INSERT BUSINESS NAME HERE] is dedicated to protection of drinking water sources in Churchill County through the use and support of best management practices.

Guest columns/editorials – providing guest columns and editorial pieces to local newspapers enables the CSWP Team the opportunity to position the Team as source water protection experts. Guest columns from respected and well-known community members also offer a medium to encourage, educate, and motivate readers to protect their source water. Use the attached Nevada media list to assist you in pitching a guest column or editorial.

Case studies – give audiences an understanding of the issue and how it is being approached in the community. The studies should be brief with general information as to who, what, where, when, and why and include photos where appropriate.

8.0 Education and Outreach Success Evaluation

Evaluating effectiveness is the foundation for a successful plan implementation. Effective evaluation is key in determining how effective your messages and tactics are received and what changes can be made to improve the program. Based on the tactic you have chosen and what resources you have, at least one form of measurement will work for each tactic. Establish the best form of evaluation as soon as you have decided on which tactics to execute. When conducting outreach one should be thinking about the difference being made and how best to measure the impact. Quantitative and qualitative measures should be considered.

Quantitative measurements – these measure the amount of information, not necessarily the quality of information.

- Quantity of presentations delivered and people in attendance;
- Quantity of distributed materials; and
- Quantity of inquiries (phone calls, e-mail, e-newsletter, website testimonials and visits).

Qualitative measurements – these measure the quality of the information by giving an opportunity for feedback. In this way you can determine how the messages you are communicating are being received. This can be as simple as asking each and every person who has come into contact with your messages a few simple questions:

- Survey attendees of presentations;
- Email surveys to those who receive email communications; and/or
- Online survey of website visitors.

9.0 Education Outreach Tips

Education outreach should be personalized for your individual needs. Depending on the tactics selected, you may need to create additional communication pieces. A few tips to remember when creating any communication piece:

- Simple is best;
- Allow whitespace – do not fill every space; and
- You do not need to say it all – the more you say the less effective the entire piece.

Be consistent in the look and message of every piece and limit it to no more than three messages. Finally, always include a call to action such as:

- “To learn more, log onto our website: www.xxxx.org”
- “To register for a presentation, contact your water purveyor.”
- “Take oil to one of the following disposal locations…”

A great idea without the resources to execute it will not be effective, nor will brochures that simply sit on the counter at the community library when they need to be in people's hands. Therefore, when education for an audience is desired, these are a few things to consider:

- What is the best way to reach my audience?
- What is my budget?
- How much time do I have?
- How will I follow up to see if it was effective? And when?

Public Education and Outreach Attachment A

Using the Models in Outreach: An Example

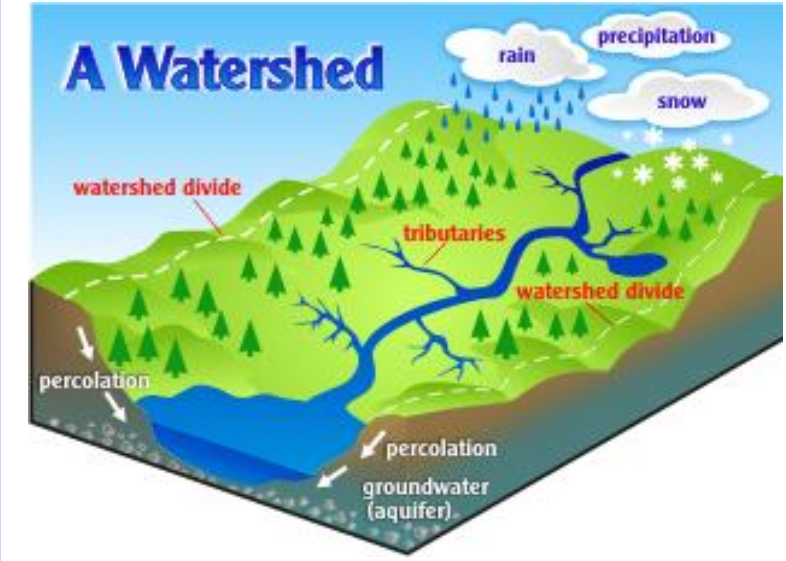
Outreach using the watershed and groundwater models is appropriate for community events or schools. Presentations can be brief or extend up to an hour.

When you turn on the tap in your home, where does the water come from?

Depending on the answers the discussion evolves. A discussion regarding what the sewer does, rainfall quantities, leakage from the Canal, the Truckee River, the Carson River or the Walker River as appropriate for the area.

What is a watershed?

Watershed is a difficult concept and a drawing can facilitate the discussion. A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place. The following figure is an example.



Demonstration of the Watershed Model

- ✓ Invite the participants to come close to see the watershed model and ask if they know:

  What is a contaminant? Discuss various forms such as oil and grease, factory chemicals, fertilizer, etc. and sprinkle it around.

  How much rainfall does the community receive each year? Discuss and then rain on the watershed, it flows down, then discuss infiltration, pull the plug and move to the groundwater model.

- ✓ Discuss the importance of individual actions to protect source water, drinking water.

Demonstration of the Groundwater Model

- ✓ Put green and red food coloring into the lake and pond areas and pump different wells, discuss aquifers, contaminants, pumping, water movement, etc.

Share the SWPA Maps of the Community

- ✓ Discuss the 2, 5, 10, and 25-year capture zones, the source water protection areas, and what they mean.
- ✓ Discuss different common chemicals or products that are more or less harmful to the environment. The importance of thinking about the chemicals we use and how we use them.
- ✓ Discuss proper disposal methods, the importance of keeping contaminants out of the irrigation ditches and the Household Hazardous Waste program available to the community.
- ✓ Re-iterate that each person makes a difference to source water protection by his or her actions and choices they make every day.

Public Education and Outreach Attachment B

Online Resources

For more information on your drinking water and source water protection go to:

Nevada Source Water Protections – General Information http://ndep.nv.gov/bwpc/sourcewater.htm

Nevada Integrated Source Water Protection Program http://ndep.nv.gov/bwpc/wellhead.htm

Nevada Drinking Water http://water.epa.gov/drink/local/nv.cfm

After the Storm: A Citizen's Guide to Understanding Stormwater
http://www.epa.gov/npdes/pubs/after_the_storm.pdf

This EPA link is excellent regarding water quality and things to look out for
http://water.epa.gov/drink/info/well/upload/2003_06_03_privatewells_pdfs_household_wells.pdf

The State Laboratory has information regarding water quality analyses. Their Web site is
www.medicine.nevada.edu/nsphl

NEMO Nevada (Nonpoint Education for Municipal Officials) is an educational program provided by the University of Nevada Reno Cooperative Extension program for land use decision-makers addressing the relationship between land-use and water resource protection. Excellent on-line resources are available:
https://www.unce.unr.edu/programs/sites/nemo/

Public Education and Outreach Attachment C

Terms Defined

Aquifer: a naturally occurring, underground area of water-soaked sand or gravel.

Best Management Practices: are barriers, methods, measures or practices designed to prevent or reduce water pollution.

Contamination: introduction of an undesirable chemical or biological substance not normally present in source water.

Ground water: water found beneath the earth's surface.

Source water: consists of bodies of water such as lakes, springs, streams, rivers and ground water/aquifers that become our water supply.

Nevada Division of Environmental Protection (NDEP): NDEP will protect the State's natural resources through an effective, efficient program of permitting, enforcement of regulations, monitoring the environment, pollution prevention and remediation based on state and federal laws.

NDEP encourages, motivates and supports communities' local source water protection activities; manages, shares and integrates source water protection information; develops federal, state and local source water protection partnerships; and integrates and implements source water protection at the state level.

Bureau of Water Pollution Control (BWPC): the mission of BWPC is to protect the waters of the State from the discharge of pollutants. This is accomplished by issuing discharge permits, which define the quality of the discharge necessary to protect the quality of the waters of the State, enforcing the state's water pollution control laws and regulations, and by providing technical and financial assistance to dischargers. Through the NDEP, BWPC helps communities protect their drinking water.

Integrated Source Water Protection Program (ISWPP): ISWPP is a comprehensive, voluntary approach designed to help communities develop and implement a plan that protects their drinking water supplies. ISWPP is a program created and monitored through BWPC.

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