FINAL DRAFT: 6/17/2013

Town of Hotchkiss
Source Water Protection Plan

Delta County, Colorado
June 2013

Written by: Kimberly Mihelich
Source Water Specialist
Colorado Rural Water Association
For the Community Water Provider:
Town of Hotchkiss, PWSID#115352

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Cover photo: View, looking southwest, of the Town of Hotchkiss (Michael Owens, Town of Hotchkiss)

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ACRONYMS

AST	Aboveground Storage Tank
BLM	Bureau of Land Management
BMP	Best Management Practice
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
COGCC	Colorado Oil and Gas Conservation Commission
CRWA	Colorado Rural Water Association
EPA	Environmental Protection Agency
GIS	Geographic Information System
PSOC	Potential Source of Contamination
SDWA	Safe Drinking Water Act
SWAA	Source Water Assessment Area
SWAP	Source Water Assessment and Protection
SWPA	Source Water Protection Area
SWPP	Source Water Protection Plan
USDA	United States Department of Agriculture
USFS	United States Forest Service

EXECUTIVE SUMMARY

There is a growing effort in Colorado to protect community drinking water sources from potential contamination. Many communities are taking a proactive approach to preventing the pollution of their drinking water sources by developing a source water protection plan. A source water protection plan identifies a source water protection area, lists potential contaminant sources and outlines best management practices to implement to decrease risks to the water source. Implementation of a source water protection plan provides an additional layer of protection at the local level beyond drinking water regulations.

The Town of Hotchkiss values a clean, high quality drinking water supply and decided to work collaboratively with area stakeholders to develop a Source Water Protection Plan. The source water protection planning effort consisted of public planning meetings and individual meetings with water operators, government, and agency representatives during the months of August 2012 to March 2013, at the Hotchkiss Town Hall. During the development of this Plan, a Steering Committee was formed to develop and implement this Source Water Protection Plan. Colorado Rural Water Association was instrumental in this effort by providing technical assistance in the development of this Source Water Protection Plan.

The Town of Hotchkiss obtains its drinking water from a surface water intake off the Leroux Creek via the Highline Canal. The Source Water Protection Area for these water sources includes the drainage area for Leroux Creek and extends northwest approximately seventeen miles upstream from the Town's intake on US Forest System lands. This Source Water Protection Area is the area that the Town of Hotchkiss has chosen to focus its source water protection measures to reduce source water susceptibility to contamination.

The Steering Committee conducted an inventory of potential contaminant sources and identified other issues of concern within the Source Water Protection Area. Through this process, it was determined that the highest priority potential contaminant sources and/or issues of concern are: wildfires, coal mining development, oil and gas development, spills or accidents on roads and terrorism. Other noted water quality threats include: recreational activities, reservoir construction and maintenance, fuel storage tanks, timber harvesting, vandalism, miscellaneous residential practices, cattle and wildlife grazing, septic systems, road maintenance, and abandoned wells.

The Steering Committee developed several possible best management practices that may help reduce the risks from the potential contaminant sources and other issues of concern. The best management practices are centered on the themes of building partnerships with community members, businesses, and local decision makers; raising awareness of the value of protecting community drinking water supplies; and empowering local communities to become stewards of their drinking water supplies by taking actions to protect their water sources. At the completion of this Plan, the Steering Committee will oversee implementation.

INTRODUCTION

The Town of Hotchkiss operates a community water supply system that supplies drinking water to approximately 968 residents located within Delta County, Colorado. The Town of Hotchkiss obtains their drinking water from a surface water intake on Leroux Creek via the Highline Canal in the Leroux Creek watershed. The Town of Hotchkiss recognizes the potential for contamination of the source of their drinking water, and realizes that it is necessary to develop a protection plan to prevent the contamination of this valuable resource. Proactive planning and implementing contamination prevention strategies are essential to protect the long-term integrity of their water supply and to limit their costs and liabilities.[1]

Table 1: Primary Contact Information for the Town of Hotchkiss

PWSID	PWS Name	Name	Title	Address	Phone	Website
CO0115352	Town of Hotchkiss	Michael Owens	Public Works Director	PO Box 369 Hotchkiss, CO 81419	970-872-3663	www.townofhotchkiss.com

Purpose of the Source Water Protection Plan

The Source Water Protection Plan (SWPP) is a tool for the Town of Hotchkiss to ensure clean and high quality drinking water sources for current and future generations. This Source Water Protection Plan is designed to:

- Create an awareness of the community's drinking water sources and the potential risks to water quality within the watershed;
- Encourage education and voluntary solutions to alleviate pollution risks;
- Promote management practices to protect and enhance the drinking water supply;
- Provide for a comprehensive action plan in case of an emergency that threatens or disrupts the community water supply.

Developing and implementing source water protection measures at the local level (i.e. county and municipal) will complement existing regulatory protection measures implemented at the state and federal governmental levels by filling protection gaps that can only be addressed at the local level.

[1] The information contained in this Plan is limited to that available from public records and the Town of Hotchkiss at the time that the Plan was written. Other potential contaminant sites or threats to the water supply may exist in the Source Water Protection Area that are not identified in this Plan. Furthermore, identification of a site as a "potential contaminant site" should not be interpreted as one that will necessarily cause contamination of the water supply.

Protection Plan Development

The Colorado Rural Water Association's (CRWA) Source Water Protection Specialist, Kimberly Mihelich, helped facilitate the source water protection planning process. The goal of the CRWA's Source Water Protection Program is to assist rural and small communities served by public water systems to reduce or eliminate the potential risks to drinking water supplies through the development of Source Water Protection Plans, and provide assistance for the implementation of prevention measures.

The source water protection planning effort consisted of public planning meetings and individual meetings with water operators, government, and agency representatives. Information discussed at the meetings helped the Town of Hotchkiss develop an understanding of the issues affecting source water protection for the community. The Steering Committee then made recommendations for management approaches to be incorporated into the Source Water Protection Plan. In addition to the planning meetings, pertinent data and other information pertaining to Source Water Protection Area was gathered via public documents, internet research, phone calls, emails, and field trips to the protection area. A summary of the meetings is represented below.

Table 2: Planning Meetings

Date	Purpose of Meeting
August 29, 2012	First Planning Meeting - Presentation on the process of developing a Source Water Protection Plan for the Town of Hotchkiss. Review of the State's Source Water Assessment for Town of Hotchkiss.
October 1, 2012	Second Planning Meeting – review delineation of Source Water Protection Area. Begin discussion of potential sources of contamination
November 14, 2012	Third Planning Meeting – Discussion of potential sources of contamination and other issues of concern within the Source Water Protection Area
December 11, 2012	Fourth Planning Meeting – Prioritization of potential sources of contamination and other issues of concern.
January 17, 2013	Fifth Planning Meeting – Continue discussion of prioritization of potential sources of contamination and other issues of concern. Develop best management practices.
March 7, 2013	Sixth Planning Meeting – Review draft SWPP
May 9, 2013	Present final SWPP to Hotchkiss Town Council

Stakeholder Participation in the Planning Process

Local stakeholder participation is vitally important to the overall success of Colorado's Source Water Assessment and Protection (SWAP) program. Source water protection was founded on the concept that informed citizens, equipped with fundamental knowledge about their drinking water source and the threats to it, will be the most effective advocates for protecting this valuable resource. Local support and acceptance of the Source Water Protection Plan is more

likely where local stakeholders have actively participated in the development of their Protection Plan.

The Town of Hotchkiss's source water protection planning process attracted interest and participation from 24 stakeholders including local citizens and landowners, private businesses, water operators, local and state governments, and agency representatives. Stakeholders were notified of meetings via letters, emails and phone calls. During the months of August 2012 through March 2013, six stakeholder meetings were held at the Hotchkiss Town Hall to encourage local stakeholder participation in the planning process. Input from these participants was greatly appreciated.

Steering Committee

During the development of this Plan, a volunteer Steering Committee was formed from the stakeholder group to develop and implement this Source Water Protection Plan. Specifically, the Steering Committee's role in the source water protection planning process was to advise the Town of Hotchkiss in the identification and prioritization of potential contaminant sources as well as management approaches that can be voluntarily implemented to reduce the risks of potential contamination of the untreated source water. All members attended at least one Steering Committee meeting and contributed to planning efforts from their areas of experience and expertise. Their representation provided diversity and led to a thorough Source Water Protection Plan. The Town of Hotchkiss and the Colorado Rural Water Association are very appreciative of the participation and expert input from the following participants.

Table 3: Stakeholders and Steering Committee Members

Stakeholder	Title	Affiliation	Steering Committee Member
Wendell Koontz	Town Mayor	Town of Hotchkiss	X
Michael Owens	Public Works Director	Town of Hotchkiss	X
Leonard McCulloch	Water Operator	Town of Hotchkiss	X
Joanne Fagan	Town Engineer	Town of Hotchkiss	X
Paul Healy	GIS Coordinator	Delta County	
Rob Fiedler	Emergency Management	Delta County	
Robbie LeValley	County Administrator	Delta County	
Larry Hudnall	Environmental Health Specialist	Delta County	
Linda Bledsoe	Lands and Minerals Specialist	US Forest Service	
Albert Borkowski	Special Uses Program Manager	US Forest Service	
Jedd Sondergard	Hydrologist	Bureau of Land Management	
Paul Schmucker	Water Commissioner	Colorado Division of Water Resources	
Doug Fritz	Fire Chief	Hotchkiss Fire Department	
Jim Ware	Permittee	Leroux Creek Cattle Pool	

Gale Ware	President	Leroux Creek Cattle Pool	
Steve Weist	Manager Special Projects	Oxbow Mining Inc.	
Mark Smith	President	Leroux Creek Water Association	
Jim Blankenship	Superintendent	Hanson Mesa Water	
Sarah Sauter	Executive Director	Western Slope Conservation Center	
Cassandra Shenk	Distribution Technician	Rogers Mesa WC	
David Smuih		HydroTerra Inc.	
Rob Gill		Bear Ranch/7X	
Thomas Wills	Reporter	North Fork Merchant Herald	
Kimberly Mihelich	Source Water Specialist	Colorado Rural Water Association	

Development and Implementation Grant

The Town of Hotchkiss has been awarded a $5,000 Development and Implementation Grant from the Colorado Department of Public Health and Environment (CDPHE). This funding is available to public water systems and representative stakeholders committed to developing and implementing a source water protection plan. A one to one financial match (cash or in-kind) is required. The Town of Hotchkiss was approved for this grant in July 2012, and it expires on July 17, 2014. The Town of Hotchkiss intends on using the funds to implement management approaches that are identified in this Plan.

WATER SUPPLY SETTING

Location and Description

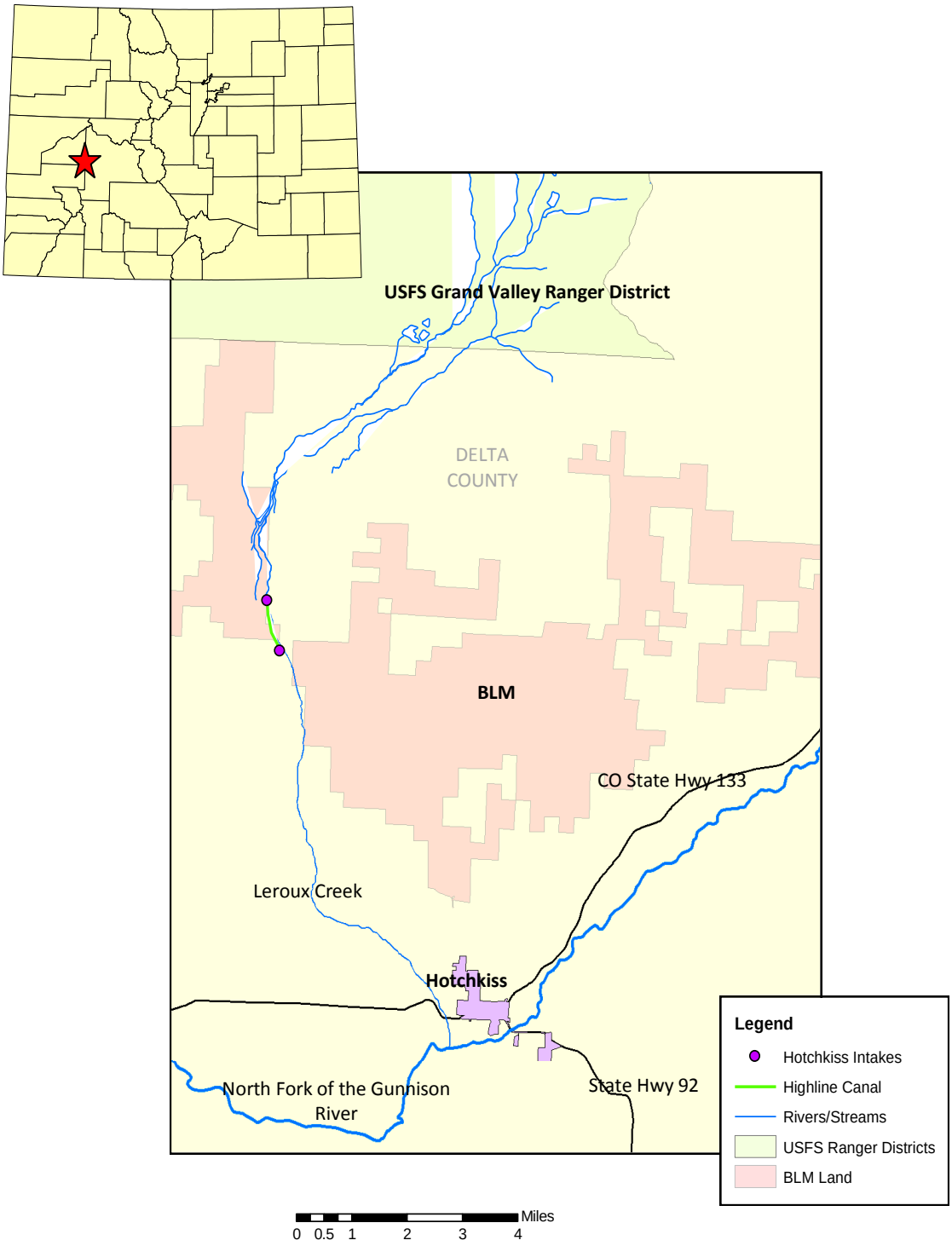

Figure 1: Location of the Town of Hotchkiss and its intake within Delta County, Colorado

The Town of Hotchkiss is a small rural town, covering an area of approximately 0.67 square miles, and is located in Delta County on the western slope of Colorado in the heart of the North Fork Valley. Primary access to the Town is through Colorado State Highway 133 or through State Highway 92. The Town of Hotchkiss has 412 households, 271 families, and a small town charm. Future projections by the Town of Hotchkiss estimate that growth will increase over the next ten years.

The Town was incorporated in 1900 and named for Enos T. Hotchkiss, who had staked an early land claim on the site where the Town is now situated (Town of Hotchkiss, CO). Municipal affairs are governed by the Hotchkiss Town Council. The North Fork Valley is a popular destination for hunting and fishing as well as a popular attraction for its local wine and organic fruit and vegetable operations.

The majority of the Town of Hotchkiss's source waters originates on public lands and travels through both public and private lands before reaching an intake outside the Town boundaries. The private land includes unincorporated areas of Delta County. The public lands include Gunnison National Forest Lands, managed by the Grand Valley Ranger District, and BLM lands managed by the Uncompaghre Field Office. Land use on private land consists of agricultural and rural residential development. Delta County has no zoning and limited controls on land use.

Physical Characteristics

The Town of Hotchkiss sits at an elevation of 5,351feet and is located at latitude 38^0 47' 57" N, longitude 107^0 43' 1" W. The Leroux Creek watershed, in which the Town's source water originates, has a mountainous topography, with elevations ranging from 6800 to over 11,000 feet above sea level. It is in the Colorado Plateau Physiographic Province and lies mostly within Grand Mesa National Forest lands between the Grand Mesa and Oak Mesa. The Grand Mesa is an erosional remnant within the lower Piceance Basin that consists of tertiary volcanic rocks and is capped by lava flow. The Piceance Basin is a sedimentary rock aquifer located in western Colorado (Topper, Spray, Bellis, Hamilton, & Barkmann, 2003).

The climate within the source water area is generally semiarid with an estimated average annual precipitation of 27.6 inches based on Mountain Data from NRCS SNOTEL Overland Reservoir Sites (USDA Natural Resources Conservation Service, 2013). Overland Reservoir lies within Hotchkiss's source water area.

Soils in the Leroux Creek Drainage consist mainly of clay loams or aridisols in the lower portion of the basin while soils higher in the basin originate from sandstone parent materials. The soils at the highest elevations located on National Forest typically consist of mollisols with enriched organic matter.

Hydrologic Setting

Leroux Creek is the principal source of drinking water for the Town of Hotchkiss. The Leroux Creek watershed drains approximately 44 square miles (28,432 acres) and is part of the North Fork of the Gunnison River watershed basin (Hydrologic Unit Code (HUC) 14020004), tributary to the Gunnison River. The headwaters of Leroux Creek originate approximately 16.5 miles north of the Town of Hotchkiss, within U.S. Forest System lands, and receive flow from high mountain snowmelt fed lakes. Leroux Creek flows into the North Fork of the Gunnison River southwest of Town, which joins the Gunnison River a few miles farther downstream. Once the two branches merge, it winds through the canyon lands of west central Colorado, joining the Colorado River west of Grand Junction, CO (Hotchkiss, Paonia, and Crawford Chambers of Commerce). The Gunnison River Basin is part of Colorado Water Division Four with the office of the Division Engineer in Montrose, CO.

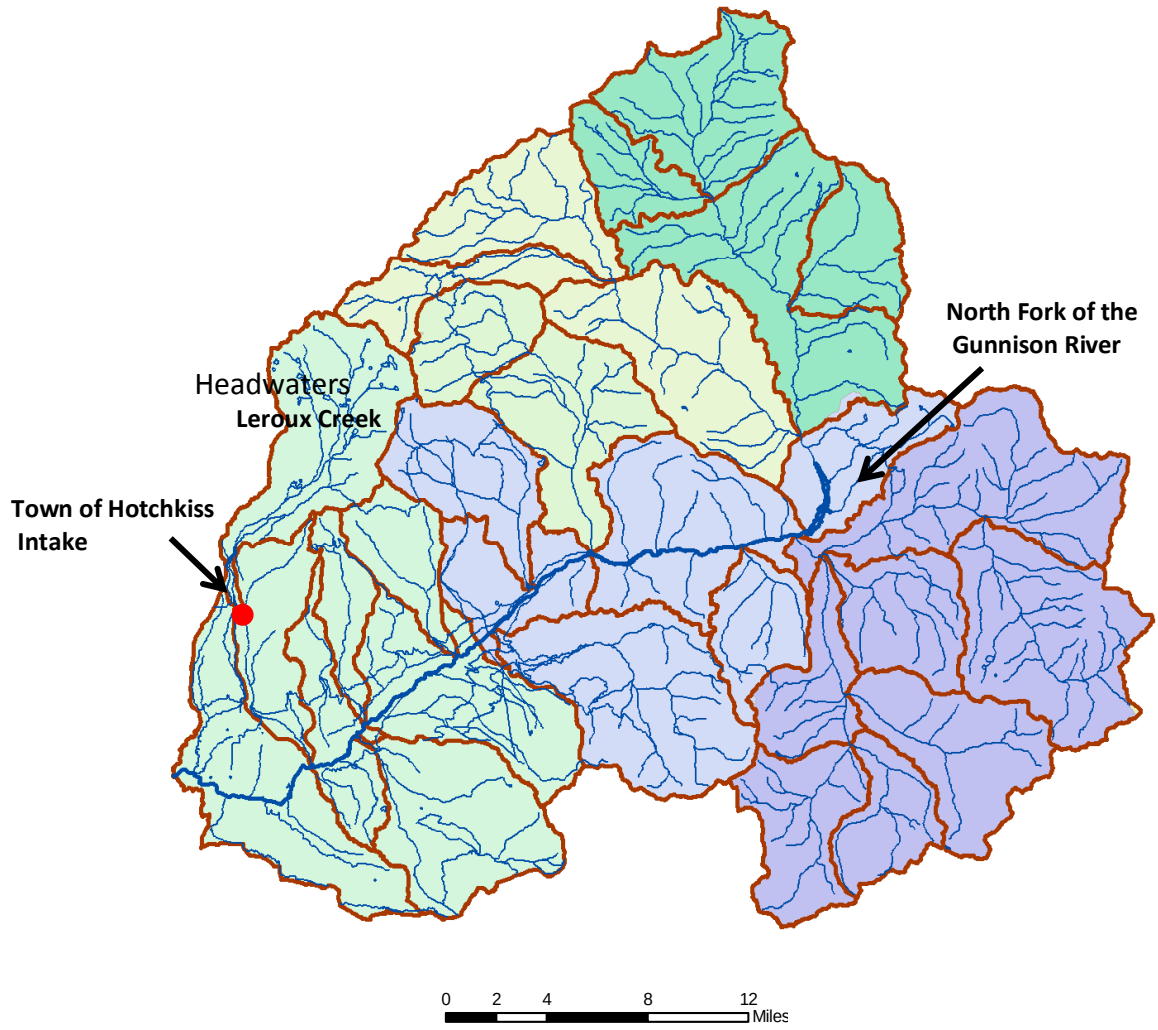

Figure 2: Leroux Creek watershed within the North Fork of the Gunnison River basin

Water Quality Standards

Under the Clean Water Act, every state must adopt water quality standards to protect, maintain and improve the quality of the nation's surface waters. The State of Colorado's Water Quality Control Commission has established water quality standards that define the goals and limits for all waters within their jurisdictions. Colorado streams are divided into individual stream segments for classification and standards identification purposes (Table 4). Standards are designed to protect the associated classified uses of the streams (Designated Use). Stream classifications can only be downgraded if it can be demonstrated that the existing use classification is not presently being attained and cannot be attained within a twenty year time period (Section 31.6(2)(b)). A Use Attainability Analysis must be performed to justify the downgrade.

Table 4: Stream segments within the Leroux Creek Watershed and their Designated Uses

Waterbody Name	Waterbody ID	Location	Designated Use
Leroux Creek	COGUNF05_7000	HUC: 14020004	Agriculture Aquatic Life Cold Water-Class 1 Domestic Water Source Recreation Primary Contact

Source: EPA "Water Quality Assessment and TMDL Information," 2013

Drinking Water Supply Operations

Water Supply and Infrastructure

The Town typically provides water to its customers from flow and storage of waters from Leroux Creek. The Town also has water available from the Overland Reservoir, the Fire Mountain Canal and from a flow right on the North Fork of the Gunnison River upstream of Town. The Town of Hotchkiss has approximately five miles of ten-inch pipe delivering the raw water from the Highline Canal to a settling pond just prior to the Horse Park Water Treatment Plant.

The water from the settling pond is pretreated by mixing a flocculent into the water and running it through a clarifying system utilizing tube settlers. The clarified water then travels through two Pall Aria AP6 membrane filtration skids capable of producing 750 gallons per minute (GPM) of treated water. Post treatment consists of fluoride for healthy bones and teeth and chlorine gas for disinfection.

Following disinfection contact time, the treated water is then put into the distribution system. The beginning of the distribution system has a one million gallon tank and a 350,000 gallon tank used for domestic water storage. Approximately three miles of 10-inch water main delivers water to the Town of Hotchkiss. Just north of Hotchkiss is another storage tank capable of storing 450,000 gallons of domestic water.

The Horse Park Water Treatment Plant provides water for 614 taps and fire protection in the Town of Hotchkiss' distribution system, as well as providing domestic water for two consecutive water systems, Hanson Mesa Domestic Pipeline Company and Rogers Mesa Domestic Water Company.

Figure 3: Town of Hotchkiss's Drinking Water Supply Operations

Top Left: Leroux Creek just above the High Line Canal diversion; Top Right: High Line Canal Headgate off Leroux Creek to the High Line canal; Bottom Left: Town of Hotchkiss' raw water inlet from High Line Canal; Bottom Right: Town of Hotchkiss Domestic Water Storage

Water Supply Demand Analysis

The Town of Hotchkiss serves an estimated 614 connections and approximately 968 residents and other users in the service area annually. The water system currently has the capacity to produce one million gallons per day (MGD). Current estimates by the water system indicate that the average daily demand is approximately 0.215 MGD, and that the average peak daily demand is approximately 0.367 MGD. Using these estimates, the water system has a surplus average daily demand capacity of 0.785 MGD and a surplus average peak daily demand capacity of 0.633 MGD.

In the event that the Leroux Creek water supply became unusable due to potential contamination, the Town of Hotchkiss has enough capacity to supply its users for a period of time before it became a problem. During irrigation season, the Town is able to get water from either the Overland Reservoir or the Fire Mountain Canal within a day or so. If Leroux Creek were to become unusable outside the irrigation season, the Town could treat water from the North Fork of the Gunnison River, which would take a bit longer. The ability of Town of Hotchkiss to meet either of these demands for an extended period of time is also affected by the amount of treated water the water system has in storage at the time Leroux Creek becomes unusable, however, their storage tanks contain enough treated water to sustain demand for approximately four days.

The Steering Committee believes the development and implementation of a source water protection plan for Town of Hotchkiss and its community can help to reduce the risks posed by potential contamination of its water sources. Additionally, the Town of Hotchkiss has developed an emergency response plan (available upon request from Town Hall) to coordinate rapid and effective response to any emergency incident that threatens or disrupts the community water supply.

OVERVIEW OF COLORADO'S SWAP PROGRAM

Source water assessment and protection came into existence in 1996 as a result of Congressional reauthorization and amendment of the Safe Drinking Water Act. The 1996 amendments required each state to develop a source water assessment and protection (SWAP) program. Colorado Department of Public Health and Environment's (CDPHE) Water Quality Control Division, assumed the responsibility of developing Colorado's SWAP program. The SWAP program protection plan is integrated with the Colorado Wellhead Protection Program that was established in amendments made to the federal Safe Drinking Water Act (SDWA, Section 1428) in 1986.

Colorado's SWAP program is an iterative, two-phased process designed to assist public water systems in preventing potential contamination of their untreated drinking water supplies. The two phases include the Assessment Phase and the Protection Phase as depicted in the upper and lower portions of Figure 4, respectively.

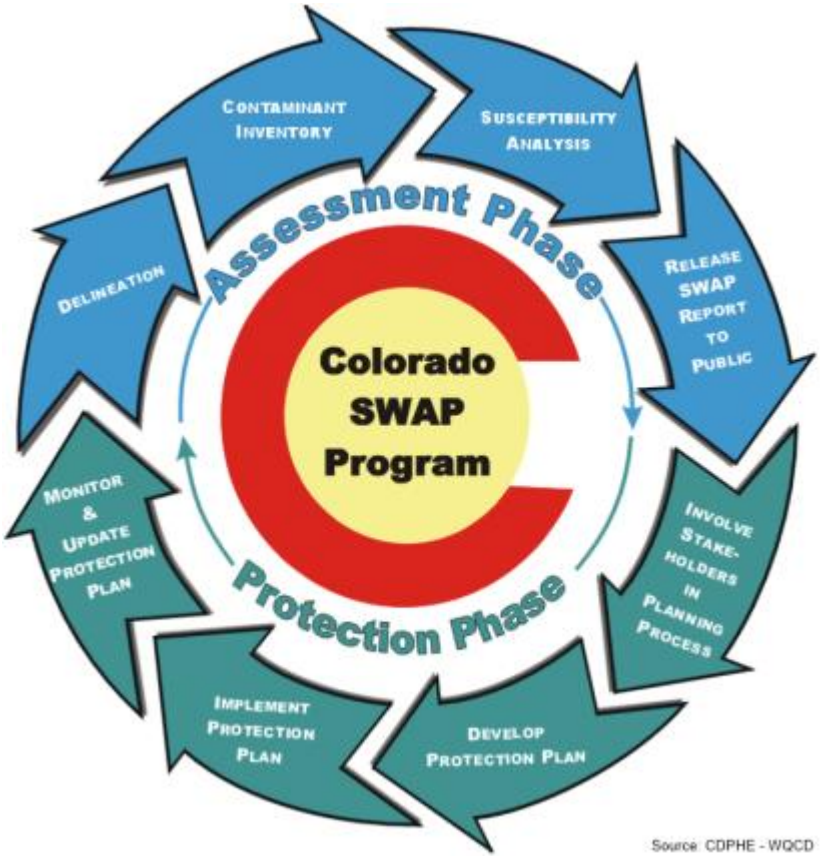

Figure 4: Source Water Assessment and Protection Phases

Source Water Assessment Phase

The Assessment Phase for all public water systems consists of four primary elements:

1. Delineating the source water assessment area for each of the drinking water sources;
2. Conducting a contaminant source inventory to identify potential sources of contamination within each of the source water assessment areas;
3. Conducting a susceptibility analysis to determine the potential susceptibility of each public drinking water source to the different sources of contamination;
4. Reporting the results of the source water assessment to the public water systems and the general public.

The Assessment Phase involves understanding where the Town of Hotchkiss's source water comes from, what contaminant sources potentially threaten the water sources, and how susceptible each water source is to potential contamination. The susceptibility of an individual water source is analyzed by examining the properties of its physical setting and potential contaminant source threats. The resulting analysis calculations are used to report an estimate of how susceptible each water source is to potential contamination. A Source Water Assessment Report was provided to each public water system in Colorado in 2004 that outlines the results of this Assessment Phase.

Source Water Protection Phase

The Protection Phase is a voluntary, ongoing process in which all public water systems have been encouraged to voluntarily employ preventative measures to protect their water supply from the potential sources of contamination to which it may be most susceptible. The Protection Phase can be used to take action to avoid unnecessary treatment or replacement costs associated with potential contamination of the untreated water supply. Source water protection begins when local decision-makers use the source water assessment results and other pertinent information as a starting point to develop a protection plan. As depicted in the lower portion of Figure 4, the source water protection phase for all public water systems consists of four primary elements:

1. Involving local stakeholders in the planning process;
2. Developing a comprehensive protection plan for all of their drinking water sources;
3. Implementing the protection plan on a continuous basis to reduce the risk of potential contamination of the drinking water sources; and
4. Monitoring the effectiveness of the protection plan and updating it accordingly as future assessment results indicate.

The water system and the community recognize that the Safe Drinking Water Act grants no statutory authority to the Colorado Department of Public Health and Environment or to any other state or federal agency to force the adoption or implementation of source water

protection measures. This authority rests solely with local communities and local governments. The source water protection phase is an ongoing process as indicated in Figure 4. The evolution of the SWAP program is to incorporate any new assessment information provided by the public water supply systems and update the protection plan accordingly.

SOURCE WATER PROTECTION PLAN DEVELOPMENT

Source Water Assessment Report Review

The Town of Hotchkiss has reviewed the Source Water Assessment Report along with the Steering Committee. These Assessment results were used as a starting point to guide the development of appropriate management approaches to protect the source water of Town of Hotchkiss from potential contamination. A copy of the Source Water Assessment Report for Town of Hotchkiss can be obtained by contacting the Town of Hotchkiss or by downloading a copy from the CDPHE's SWAP program website located at: http://www.colorado.gov/cs/Satellite/CDPHE-WQ/CBON/1251596793639.

Defining the Source Water Protection Area

A source water protection area is the surface and subsurface areas from which contaminants are reasonably likely to reach a water source. The purpose of delineating a source water protection area is to determine the recharge area that supplies water to a public water source. Delineation is the process used to identify and map the area around a pumping well that supplies water to the well or spring, or to identify and map the drainage basin that supplies water to a surface water intake. The size and shape of the area depends on the characteristics of the aquifer and the well, or the watershed. The delineated source water assessment area provides the basis for understanding where the community's source water and potential contaminant threats originate, and where the community has chosen to implement its source water protection measures in an attempt to manage the susceptibility of their source water to potential contamination.

After carefully reviewing their Source Water Assessment Report and the CDPHE's delineation of the Source Water Assessment Area for the Town of Hotchkiss's source, the Steering Committee chose to modify it before accepting it as their Source Water Protection Area for this Source Water Protection Plan. The original assessment area did not include protection zones around the Highline Canal, and it also excluded the Overland Reservoir, which is a storage reservoir for the Town of Hotchkiss. The Source Water Protection Area therefore was created by expanding the assessment area to include them.

The Town of Hotchkiss's Source Water Protection Area is defined as:

1. **Zone 1** is defined as a 1,000 foot wide band on either side of the stream segments (including the Highline Canal).
2. **Zone 2** extends 1/4 mile beyond each side of the boundary of Zone 1 (2,320 feet from the drainage network).
3. **Zone 3** is made up by the remainder of the source water assessment area up to the watershed boundary.

The Source Water Protection Area is illustrated in the following map:

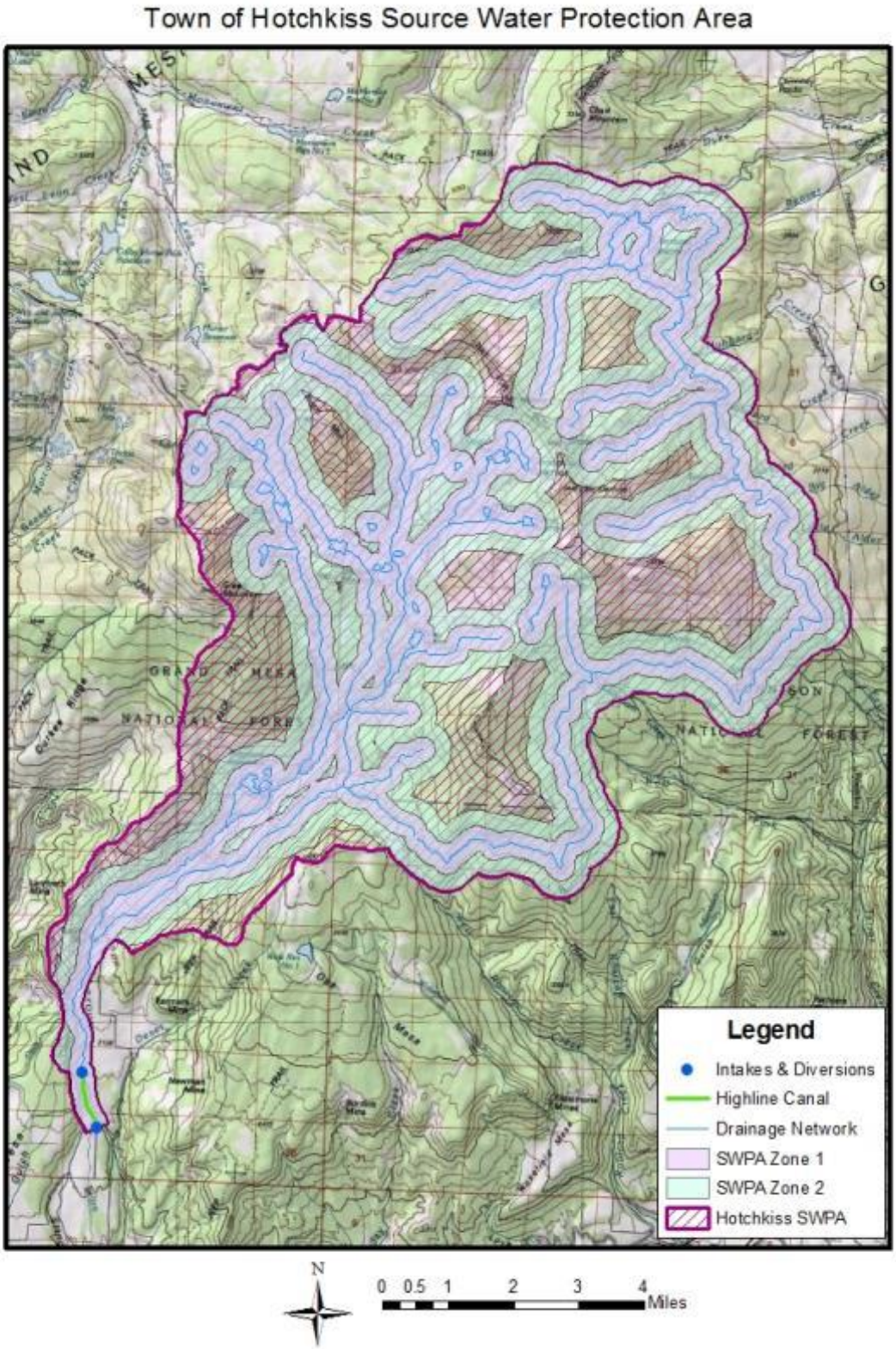

Figure 5: Town of Hotchkiss Source Water Protection Area

Potential Contaminant Source Inventory and Other Issues of Concern

Many types of land uses have the potential to contaminate source waters: spills from tanks, trucks, and railcars; leaks from buried containers; failed septic systems, buried or injection of wastes underground, use of fertilizers, pesticides, and herbicides, road salting, as well as urban and agricultural runoff. While catastrophic contaminant spills or releases can wipe out a water resource, groundwater degradation can result from a plethora of small releases of harmful substances. According to the USEPA, nonpoint-source pollution (when water runoff moves over or into the ground picking up pollutants and carrying them into surface and groundwater) is the leading cause of water quality degradation (GWPC, 2008).

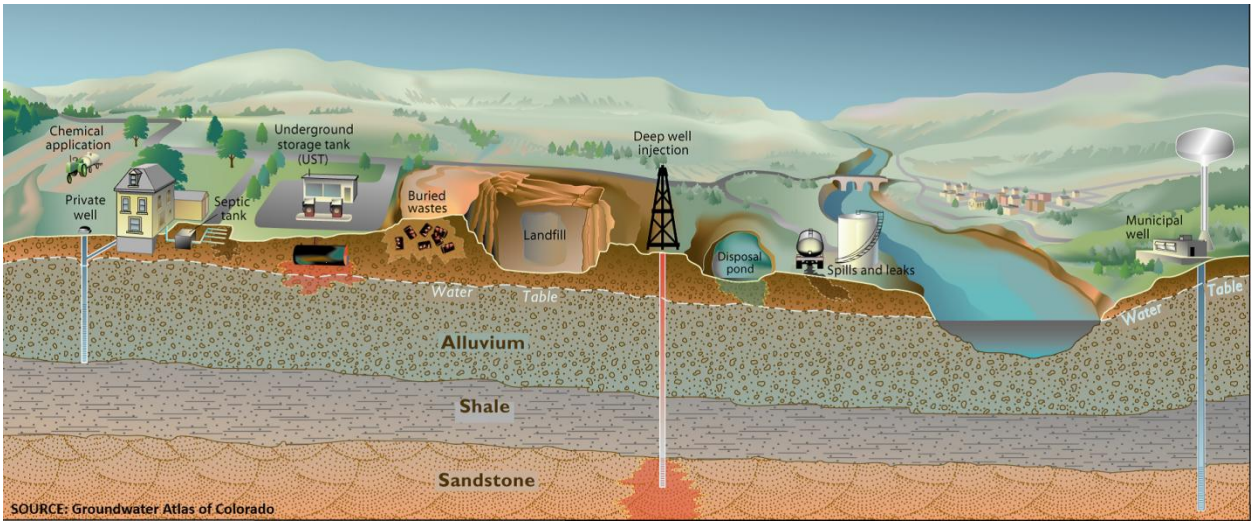

Figure 6: Schematic drawing of the potential source of contamination to surface and groundwater

In 2001 – 2002, as part of the Source Water Assessment Report, a contaminant source inventory was conducted by the Colorado Department of Public Health and Environment to identify selected potential sources of contamination that might be present within the source water assessment areas. Discrete[2] contaminant sources were inventoried using selected state and federal regulatory databases including: mining and reclamation, oil and gas production, above and underground petroleum tanks, Superfund sites, hazardous waste generators, solid waste disposal, industrial and domestic wastewater dischargers, and water well permits. Dispersed contaminant sources were inventoried using then recent land use / land cover and transportation maps of Colorado, along with selected state regulatory databases. The contaminant inventory was completed by mapping the potential contaminant sources with the aid of a Geographic Information System (GIS).

The State's contaminant source inventory consisted of draft maps, along with a summary of the discrete and dispersed contaminant sources inventoried within the source water assessment area. The Town of Hotchkiss was asked, by CDPHE, to review the inventory information, field-verify selected information about existing and new contaminant sources, and provide feedback

[2] The WQCD's assessment process used the terms "discrete" and "dispersed" potential sources of contamination. A discrete source is a facility that can be mapped as a point, while a dispersed source covers a broader area such as a type of land use (crop land, forest, residential, etc.).

on the accuracy of the inventory. Through this Source Water Protection Plan, the Town of Hotchkiss is reporting its findings to the CDPHE.

After much consideration, discussion, and input from local stakeholders, the Town of Hotchkiss and the Steering Committee have developed a more accurate and current inventory of contaminant sources located within the Source Water Protection Area. Upon completion of this contaminant source inventory, the Town of Hotchkiss has decided to adopt it in place of the original contaminant source inventory provided by the CDPHE.

Contaminant Source Inventory (in no particular order):

- Septic Systems
- Fuel Storage Tanks
- Miscellaneous Residential Practices
- Wildfires
- Road Maintenance
- Spills/Accidents on Roads
- Timber Harvesting
- Cattle/Wildlife Grazing
- Recreational Activities
- Reservoir Construction & Maintenance
- Abandoned Wells
- Oil and Gas Development
- Coal Mining Development

In addition to the discrete and dispersed contaminant sources identified in the contaminant source inventory, the Steering Committee has also identified other issues of concern that may impact the Town of Hotchkiss's drinking water source.

Additional Issues of Concern (in no particular order)**:**

- Terrorism
- Vandalism

Priority Strategy

After developing a contaminant source inventory and list of issues of concern that is more accurate, complete, and current, the Steering Committee began the task of prioritizing this inventory for the implementation of the Best Management Practices outlined in this Source Water Protection Plan (see Table 7).

The strategy which the Town and Steering Committee used was based on three criteria.

1. **Contaminant Hazard** - The contaminant hazard is an indication of the potential human health danger posed by contaminants likely or known to be present at the contaminant source. Using the information tables provided by CDPHE (see Appendices E-H), the Steering Committee considered the following contaminant hazard concerns for each contaminant source:

    - **Acute Health Concerns** - Contaminants with acute health concerns include individual contaminants and categories of constituents that pose the most serious immediate health concerns resulting from short-term exposure to the constituent. Many of these acute health concern contaminants are classified as potential cancer-causing (i.e. carcinogenic) constituents or have a maximum contaminant level goal (MCLG) set at zero (0).

    - **Chronic Health Concerns** - Contaminants with chronic health concerns include categories of constituents that pose potentially serious health concerns due to long-term exposure to the constituent. Most of these chronic health concern contaminants include the remaining primary drinking water contaminants.

    - **Aesthetic Concerns** - Aesthetic contaminants include the secondary drinking water contaminants, which do not pose serious health concerns, but cause aesthetic problems such as odor, taste or appearance

2. **Potential Volume** - The volume of contaminants at the contaminant source is important in evaluating whether the source water could become contaminated at concentrations that may pose a health concern to consumers of the water in the event these contaminants are released to the source water. Large volumes of contaminants at a specific location pose a greater threat than small volumes.

3. **Likelihood of Release** - The more likely that a potential source of contamination is to release contaminants, the greater the contaminant threat posed. The regulatory compliance history for regulated facilities and operational practices for handling, storage, and use of contaminants were utilized to evaluate the likelihood of release.

Based on the above criteria, the Steering Committee has ranked the potential contaminant source inventory and issues of concern in the following way:

Prioritized Potential Contaminant Sources and Issues of Concern

- HIGH PRIORITY:
  - Wildfires
  - Spills/Accidents on Roads
  - Oil and Gas Development
  - Coal Mining Development
  - Terrorism
- MODERATE PRIORITY:
  - Recreational Activities
  - Reservoir Construction and Maintenance
  - Fuel Storage Tanks
  - Timber Harvesting
  - Vandalism
- LOW PRIORITY:
  - Miscellaneous Residential Practices
  - Cattle/Wildlife Grazing
  - Septic Systems
  - Road Maintenance
  - Abandoned Wells

Susceptibility Analysis of Water Sources

The Town of Hotchkiss's Source Water Assessment Report contained a susceptibility analysis[3] to identify how susceptible an untreated water source could be to contamination from potential sources of contamination inventoried within its source water assessment area. The analysis looked at the susceptibility posed by individual potential contaminant sources and the collective or total susceptibility posed by all of the potential contaminant sources in the source water assessment area. The CDPHE developed a susceptibility analysis model for surface water sources and ground water sources under the influence of surface water, and another model for groundwater sources. Both models provided an objective analysis based on the best available information at the time of the analysis. The two main components of the CDPHE's susceptibility analysis are:

1. **Physical Setting Vulnerability Rating** – This rating is based on the ability of the surface water and/or groundwater flow to provide a sufficient buffering capacity to mitigate potential contaminant concentrations in the water source.

2. **Total Susceptibility Rating** – This rating is based on two components: the physical setting vulnerability of the water source and the contaminant threat.

[3] The susceptibility analysis provides a screening level evaluation of the likelihood that a potential contamination problem could occur rather than an indication that a potential contamination problem has or will occur. The analysis is NOT a reflection of the current quality of the untreated source water, nor is it a reflection of the quality of the treated drinking water that is supplied to the public.

Upon review of CDPHE's susceptibility analysis, the Steering Committee determined that both the Physical Setting Vulnerability Rating and the Total Susceptibility Rating for each of the Town of Hotchkiss's sources are accurate and should remain the same (see table below).

Table 5: Updated Susceptibility Analysis

Source ID #	Source Name	Source Type	Total Susceptibility Rating	Physical Setting Vulnerability Rating
115352-002	Leroux Creek	Surface Water	Moderately Low	Moderately Low

DISCUSSION OF POTENTIAL CONTAMINANT SOURCES AND ISSUES OF CONCERN

The following section provides a brief description of potential contaminant sources and issues of concern that have been identified in this plan, describes the way in which they threaten the water source(s) and outlines management approaches.

Public Land Management

The SPWA for the Town of Hotchkiss is located almost entirely within Grand Mesa National Forest land managed by the Grand Valley Ranger District, within the USFS Rocky Mountain Region. US Forest Service land use management practices have the potential to directly affect the quality of Hotchkiss's source waters. Grand Valley Realty Specialist, Linda Bledsoe, has attended Hotchkiss's SWPP planning meetings, and her input on US Forest System lands was greatly appreciated.

Figure 7: Sign leading to Grand Mesa National Forest lands

Protecting Water Resources

A principal purpose for which the Forest Reserves (predecessor to the National Forest System) were established was to "secure favorable conditions of water flows". Throughout its history, the Forest Service has had a very diverse and broad mission of multiple use management outlined by the National Forest Management Act, Multiple Use-Sustained Yield Act, Federal Land Policy and Management Act, etc. This means that the agency balances outdoor recreation and preservation of wildlife habitat, air and water, and other scenic and historical values with environmentally responsible commercial development of the land and its resources. The Forest Service's mandate to manage lands for multiple-use requires balancing present and future resource use with domestic water supply needs as well as many other needs. The greater the proportion of National Forest System lands in a source water area, the greater the potential to be directly affected by Forest Service land use and management activities. It is the desired condition of the National Forest System land managers to "maintain favorable conditions of flow and sustain supplies of high quality raw water while providing for multiple-use management" (GMUG, 2006).

One of the long-term management goals of the Rocky Mountain Region is to manage the forest for water resources:

"Protect the resource. Maintain, and where opportunities exist, restore watershed and forest health to ensure full watershed function exhibiting high geomorphic, hydrologic, and biotic integrity. Ensure that forest management activities occur in a manner that adequately protects the integrity of watersheds (USFS, 2010)."

In October 2009, the Forest Service Rocky Mountain Region and the State of Colorado Department of Public Health and Environment signed a Memorandum of Understanding (MOU) to establish a framework to work together on issues regarding the management and protection of water quality on state defined Source Water Assessment Areas on National Forest System lands in Colorado (see Appendix D). Under this agreement, the Forest Service recognizes a CDPHE-delineated Source Water Area as a "Municipal Supply Watershed" per definition in FSM 2542 (MOU Between CDPHE and USFS Rocky Mountain Region, 2009). The source water protection area for the Town of Hotchkiss that lies within these National Forest lands, will be included in future Revised Forest Plans as a municipal supply watershed. In the interim, the Town should be watchful of new and modified activities requesting permitting with the forest and notify the USFS if the Town is concerned proposed changes in use could impact the Town's water supply.

Forest Plan

At the District level, the Grand Valley Ranger District adheres to the management directives established under the 1991 Amended Land and Resource Management Plan (1991 Forest Plan) for the Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forest.

The current management area prescriptions within the source water protection area includes: 6B – Livestock Grazing (maintain). The area is managed for livestock grazing. Intensive grazing management systems are favored over extensive systems. Range condition is maintained through use of forage improvement practices, livestock management, and regulation of other resource activities. Investment in structural and nonstructural range improvements to increase forage utilization is moderate to high. Structural improvement benefit, or at least do not adversely affect wildlife. Conflicts between livestock and wildlife are resolved in favor of livestock. Nonstructural restoration and forage improvement practices available are seeding, planting, burning, fertilizing, pitting, furrowing, spraying, crushing and plowing. Cutting of encroaching trees may also occur. Investments are made in compatible resource activities. Dispersed recreational opportunities vary between semi-primitive non-motorized and roaded natural. Management activities are evident but harmonize and blend with the natural setting.

7A – Wood Fiber Production. Management emphasis is on wood fiber production and utilization of large roundwood of a size and quality suitable for sawtimber. Engelmann spruce-subalpine fir clearcuts are less than 5 acres in size to promote natural regeneration. The area generally will have a mosaic of fully stocked stands that follow natural patterns and avoid straight lines and geometric shapes. Management activities are not evident or remain visually subordinate along Forest arterial and collector roads and primary trails. Roaded-natural recreation opportunities are provided along forest arterial and collector roads. Semi-primitive motorized recreation opportunities are provided on those that are closed

Wildfires

The Town of Hotchkiss's Source Water Protection Area sits in the upper Leroux Creek Basin and has a considerable risk of damage from wildfire. In describing the risk of wildfire to the area, the term "low frequency, high consequence" may be appropriate. The general area is very fire-prone as shown in Figure 10, and numerous wildfires have occurred within a five-mile radius in the past under a variety of conditions and circumstances (see Appendix I). Nationally, wildfires are primarily naturally caused (i.e., lightning), however, a significant percentage of wildfires in the area have been human caused. With a higher level of usage in the area due to subdivisions and home sites, a higher number of ignitions may be possible.

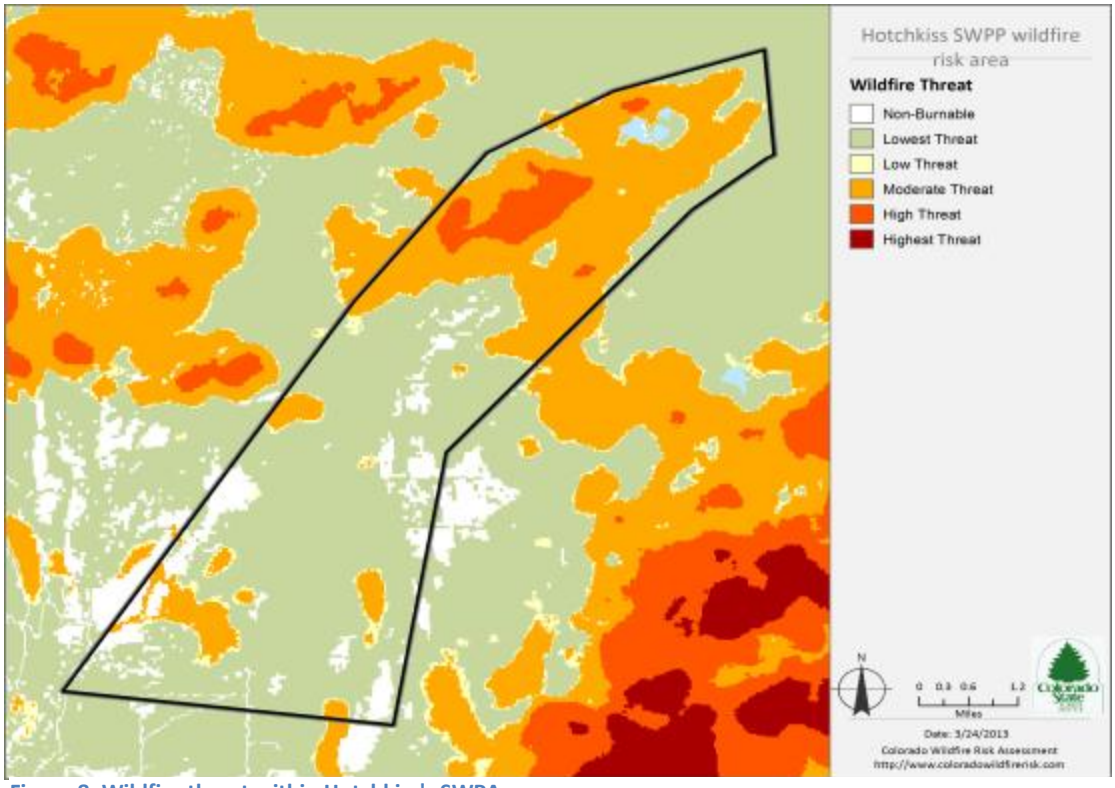

Figure 8: Wildfire threat within Hotchkiss's SWPA

There is mixed ownership and jurisdiction in the area of concern, including private and federal lands, along with two Fire Protection Districts having responsibility for initial attack, which can complicate dispatch and initial attack effectiveness, allowing a potential fire to escape control. In addition, access and egress to the area is limited to one road, 3100 Road, which could complicate suppression efforts. In fact, suppression may be delayed while responders assist the evacuation of area residents and recreational users.

Fire season, traditionally described as May through early July, is now considerably longer, with wildfires occurring state-wide in virtually any month in the calendar. Fire weather and dangerous fuel conditions in the area have historically risen to extreme levels many days per year, with the number of such periods likely to increase along with the longer fire season. Mitigating the wildfire danger using fuel reduction techniques like tree thinning may have

limited short-term benefit, as much of the vegetation in the creek bed and surrounding slopes is fast growing. Other fuels are located on steep slopes, some on private lands and others on federal lands. These factors can lead to a high rate of wildfire spread as indicated in Figure 11 below. A comprehensive approach to fuels treatment that would provide long-term protection to Leroux Creek seems unlikely.

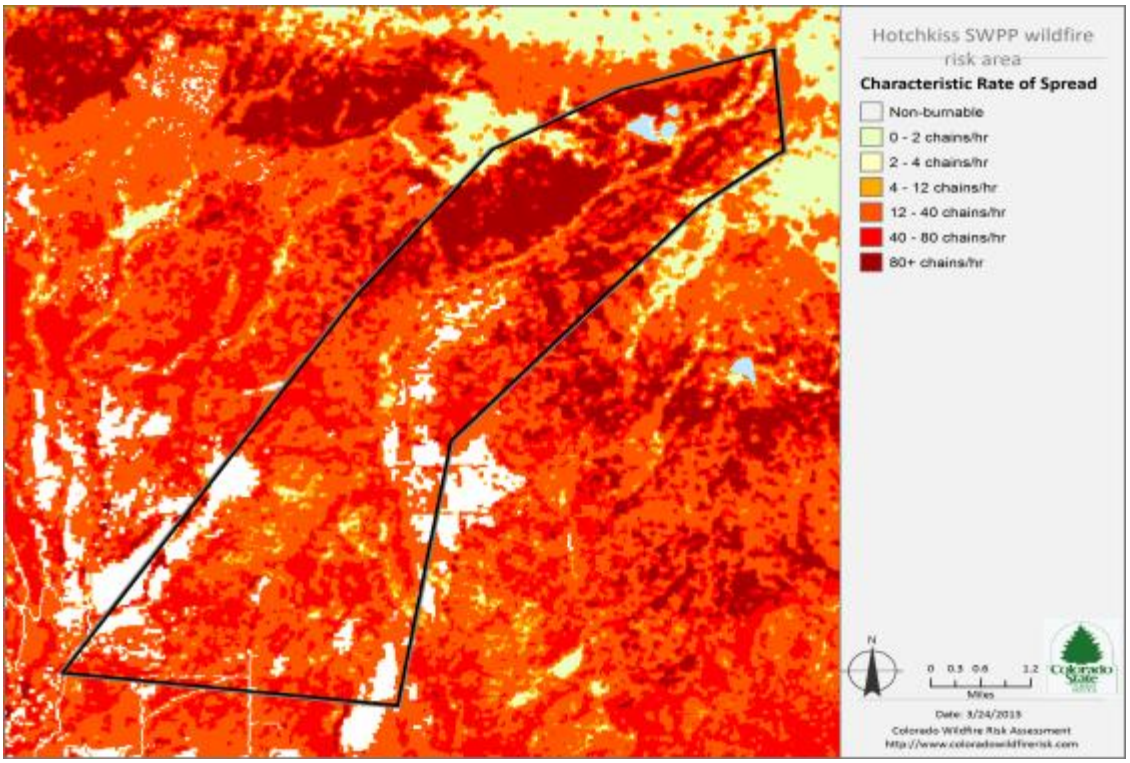

Figure 10: Rate of wildfire spread in Hotchkiss's SWPA

A large hot fire in the creek bed and surrounding lands can have an impact on source waters by removing vegetation and decreasing infiltration during rain events. This can result in soil erosion and sediment and ash pollution in drinking water. Large rain events can produce mudslides, and debris flow capable of destroying water infrastructure and altering clarity and pH of the source waters.

Hotchkiss Fire District is in the process of developing strategies and plans to manage the wildfire risk to the Source Water Protection Area. These strategies include the following:

PHOTO: DOUG FRITZ, HOTCHKISS FIRE DISTRICT

Figure 9: View of Gambel Oak slope with major risk for wildfire

- Hotchkiss Fire District will work with Montrose BLM's and the Grand Mesa, Uncompahgre and Gunnison National Forest's Fire Management Officer (FMO) in 2013 to develop modeling on fire behavior in the area to understand how a wildfire may affect the area.
- Using such modeling, Hotchkiss Fire District will develop a plan to suppress wildfire in the Source Water Protection Area in 2013, and will conduct several exercises to train firefighters on the plan.
- The area will be included in Hotchkiss Fire District's Community Wildfire Protection Plan, scheduled for updating in 2014. As part of this effort, homeowners in the area will be encouraged to create or improve Defensible Space near their homes, as well as improve their home's resistance to wildfire.
- Hotchkiss Fire District will seek out opportunities to reduce the fuels on private lands near the west side of the northern part of Redlands Mesa, utilizing available cost-share grants, continuing our successful fuels mitigation efforts in the District.

Wildfire Best Management Practices Recommendations:

1. Fuels Reduction Plan - The District Ranger will continue to implement the National Fire Plan to reduce fuels within the areas of National Forest lying within the source water protection area. The Forest Service will provide an opportunity for the public during their NEPA process. The Steering Committee will become actively involved in reviewing the plan and providing comment when needed on source water protection concerns.
2. Explore opportunities to work with private landowners for landscape scale fuel reduction and defensible space projects.
3. Fire Prevention – The District Ranger will continue to implement their fire prevention plan which includes public education programs: Fire Wise Program and Project Learning Tree.
4. Share a copy of the SWPP with Delta County Sheriff's Department as it pertains to fire bans and restrictions. Encourage collaboration with Sherriff's office in reviewing fire prevention measures
5. Develop fire response plans for the Source Water Protection Area with BLM
6. Request Full Suppression designation on Source Water Protection Area with a plan to manage amount of vegetation in the area

Spills & Accidents on Roads

The Source Water Protection Area is located outside the boundaries of the Town and is accessed by County Road 3100, a two-lane gravel road. The majority of the roads within the protection area are maintained by the Delta County Road and Bridge Department, including National Forest System Roads (NFSRs) on Grand Mesa National Forest under agreements with the Forest Service. The roads in the SWPA are

Figure 11: Corner of 3100 Rd. and Stoney Creek Rd. within the Town of Hotchkiss's SWPA

used for residential, recreational, timber, cattle, and reservoir maintenance access.

Vehicular spills may occur along the transportation route within the source water protection areas from trucks that transport fuels, waste, and other chemicals that have a potential for contaminating the source waters. Chemicals from accidental spills are often diluted with water, potentially washing the chemicals into the soil and infiltrating into the groundwater and/or running off into surface waters. Roadways are also frequently used for illegal dumping of hazardous or other potentially harmful wastes.

Road Spills/Accidents Best Management Practices Recommendations:

1. Meet with the Hotchkiss Fire District to discuss their emergency response plans for responding to hazardous and non-hazardous vehicular spills within the SWPA. Include this information in the emergency plans for the Town of Hotchkiss and ask Hotchkiss Fire District to do likewise
2. Provide information to the local fire departments:
    a. Importance of the Source Water Protection Plan
    b. Location of the intakes and Source Water Protection Area
    c. Overview of the Emergency Contingency Plan
    d. Personnel to be notified in the event of an emergency
3. Educate the public on how to call "911" to report any spills within the SWPA.
4. Place signage on public roads within the protection areas to educate the public about reporting spills on the roadway.

Oil and Gas Development

Although many areas of Colorado are experiencing an oil and gas boom, there is currently no oil and gas drilling within the Town of Hotchkiss's Source Water Protection Area. The potential for oil and gas development in the protection area is moderate. In fact, as of February 6, 2013, the Bureau of Land Management (BLM) announced the deferral of all parcels in the North Fork Valley associated with the February 2013 Oil and Gas Lease Sale (BLM - Uncompahgre Field Office, 2013). It is unknown, however, how long the deferral will last.

Colorado Oil and Gas Conservation Commission: Rule 317B

The oil and gas industry in Colorado is regulated by the Colorado Oil and Gas Conservation Commission (COGCC). The mission of the COGCC is "To promote responsible development of Colorado's oil and gas natural resources." The Colorado legislature passed House Bill 1341 in spring 2007 to increase environmental and public health protections in the face of unprecedented oil and gas development. House Bill 1341 directed the Colorado Oil and Gas Conservation Commission to make and enforce rules consistent with the protection of the environment, wildlife resources, and public health, safety, and welfare. In 2008, the COGCC developed and passed new rules that became effective on May 1, 2009 on federal land and April 1, 2009 on all other land.

One of the new rules, Rule 317B, protects public water systems by protecting the source of their drinking water. It creates protection zones, or buffer zones, combined with performance requirements applicable within 5 miles upstream of the surface water intake. The most protected Internal Buffer Zone is located within 300 feet of a water segment and is a drilling excluding zone. The purpose for protecting this zone is that a significant release in these areas would likely contaminate surface water used as a drinking water source. Enhanced drilling and production requirements also apply in areas ½ mile from the water supply segment, in an Intermediate and Extended Buffer Zone (Colorado Oil and Gas Conservation Commission, 2008).

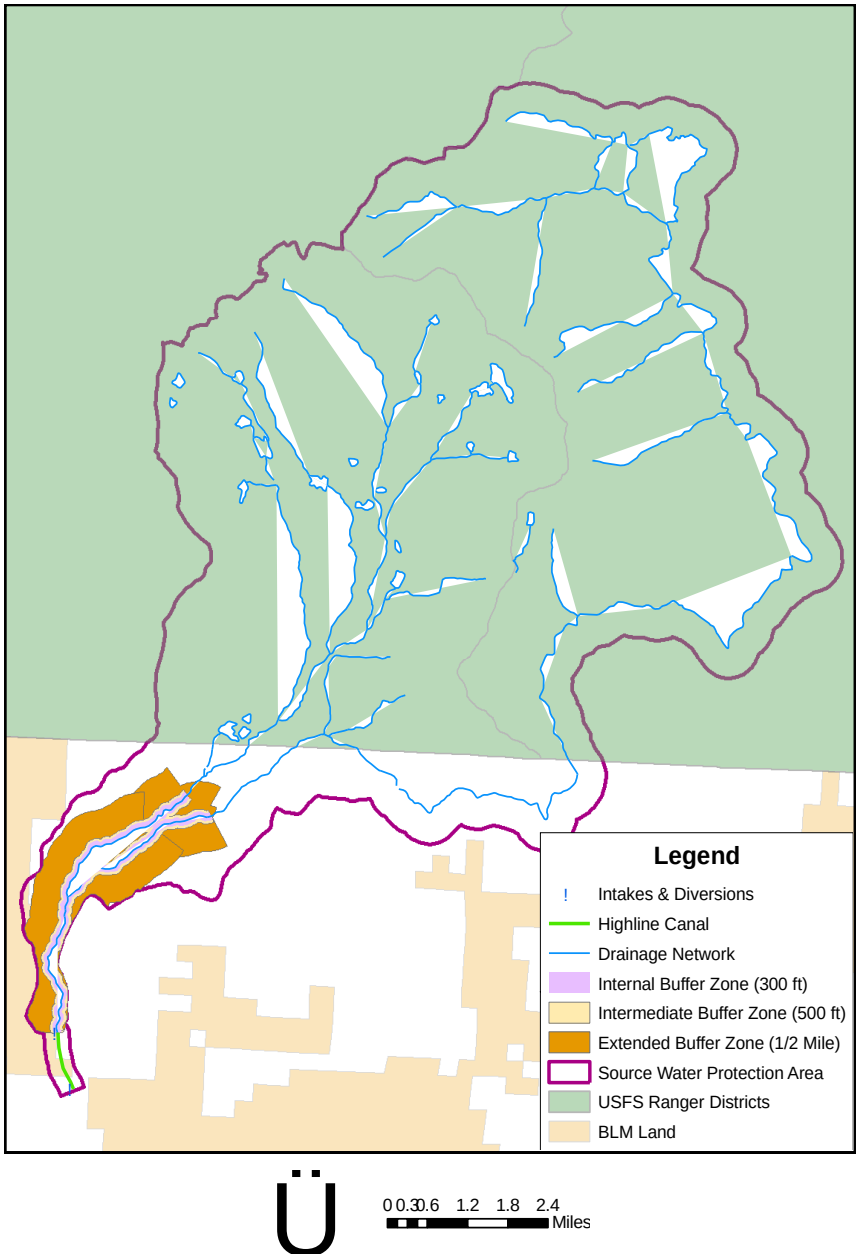

Figure 12: COGCC Rule 317B buffer zones in the Source Water Protection Area

Oil and Gas Development Best Management Practices Recommendations:

1. Stay informed of any potential oil and gas developments on federal lands within the protection area and become involved in the public process to encourage BMPs to protect water quality.
2. Encourage industry representative to share information about their operation, including chemicals utilized as part of their operations, within the source water protection area by inviting them to participate in the Town of Hotchkiss Source Water Protection Steering Committee meetings.
3. Encourage the local community to become actively involved in participating in local and regional oil and gas forums.
4. Encourage industry to educate all employees and subcontractors on the location of the source water protection areas, Emergency Response Plans, Storm Water Management plans, and Spill Response Plans.
5. The Town of Hotchkiss request county notification of application for permit to drill (APD). The Town and/or Steering Committee will provide comment.
6. The Steering Committee will encourage the industry to comply with and implement all actions in the approved Storm Water Management Plan to prevent or minimize storm water runoff impacts to the source waters.
7. The Steering Committee will encourage the industry to:
    a. Administer a Spill Prevention, Control, and Countermeasures Plan to prevent surface water and ground water contamination
    b. Immediately notify the water providers of any spills, and
    c. Use proper equipment & vehicle maintenance BMPs to prevent chemicals from contaminating ground water.
8. Develop an action plan with the Town of Hotchkiss, Hotchkiss Fire Protection District, Industry Representatives and local residents for spill response and/or other emergencies.

Coal Mining Development

Exploratory coal mine drilling is currently occurring on Oak Mesa by Oxbow Mining Inc. just outside of the Town of Hotchkiss's SWPA. Steve Weist with Oxbow Mining Inc. has attended Hotchkiss's SWPP planning meetings, and his input on coal mining impacts was greatly appreciated. If the exploration drilling shows positive results, Oxbow Mining may apply for coal leases by July 2013. Potential for this drilling and/or coal mining in this area to impact the watershed is low because it would occur outside the Leroux Creek drainage and SWPA.

Mining operations in the SWPA have a low potential to contaminate drinking water supplies from either point source discharges (i.e. mine tunnels or adits) or nonpoint source discharges from run-off over waste rock or tailing piles, because mining regulations require all runoff from mining activities to be contained and treated before allowing it to be discharged. The mineral makeup of the surface and sub-surface materials does not contain acid bearing material so there is minimal possibility of acidic, metal-laden water emanating from inactive mines within the SWPA.

Coal Mining Development Best Management Practices Recommendations:

1. Stay informed of any potential coal mining development within the protection area and become involved in the public process to encourage BMPs to protect water quality.
2. Mine planning information is usually available at local libraries to assist the public in being informed about activities occurring in their area. Encourage industry representative to share information about their operation, including chemicals utilized as part of their operations, within the source water protection area by inviting them to participate in the Town of Hotchkiss Source Water Protection Steering Committee meetings.
3. As part of their annual refresher training for MSHA (Mine Safety and Health Administration), encourage industry to educate all employees and subcontractors on the location of the source water protection areas, Emergency Response Plans, Storm Water Management plans, and Spill Response Plans.

Terrorism

Although there have been no major acts of terrorism to Hotchkiss's water supply, this is still a concern for the Steering Committee. The potential for these acts are low due to the remoteness of the area, however, this is a high priority concern because impacts from a terrorist could be huge. Water infrastructure could be targeted directly or water can be contaminated through the introduction of poisonous chemicals or disease-causing biological agents (Gleick, 2006). Signs are posted around storage tanks and treatment facilities that state "No Trespassing: Town of Hotchkiss Municipal Water Supply". The Steering Committee recommends taking other preventative measures by displaying signage at the roadways that lead to the watershed and developing outreach material that explains the importance of source water protection.

Terrorism Best Management Practices:

1. Continue to inspect watershed and intakes for signs of terrorism.
2. Display signage at roadways leading to the watershed and develop outreach material that explains the importance of source water protection.

Recreational Activities

There are many types of recreation occurring in Hotchkiss's SWPA including camping, hiking, horseback riding, fishing, boating and canoeing, skiing, snowshoeing, and off-road-vehicle use which pose threats to forested lands, grasslands, reservoirs and streams. Some undesirable impacts include severely eroded soils, user-created unplanned roads, disrupted wetland ecosystems, as well as general habitat destruction and degraded water quality throughout forested lands. To help minimize the impacts, the Forest Service approved and implemented the Grand Mesa National Forest Travel Plan, which restricts motorized travel by the public to designated roads and trails. In addition the Grand Mesa Recreation Map includes the "Leave No Trace" ethics. These ethics include guidelines that visitors should follow such as: keeping

campsites at least 100 feet from lakes and streams and outside of meadows; digging toilets at least 100 feet from the nearest water supply; burning or packing out trash; hobbling horses at least 100 feet from lakes and streams; etc. Maybe the "education" part can be something at the sign post at the forest boundary and/or our public contacts throughout field season.

PHOTOS: KIMBERLY MIHELICH, CRWA

Figure 13: Recreational activities within Hotchkiss's SWPA

Boating Activities

Boating activities occur on reservoirs within the Leroux Creek watershed. Two cycle motors, which are commonly used on small boats, release emissions directly into the water. Environmental impacts from boating may include: increased fuel amounts in source waters due to spills or direct emissions release; increased pollutant concentrations in aquatic organisms and sediments; increased erosion rates; increased nutrients, leading to an increase in algae and a decrease in oxygen (eutrophication); and high levels of pathogens. Water pollution from boating and marinas is linked to several sources such as poorly flushed waterways, boat

maintenance, discharge of sewage from boats, and the physical alteration of shoreline, wetlands, and aquatic habitat (US Environmental Protection Agency, 1996).

Recreational Activities Best Management Practices Recommendations:

1. Work with USFS to encourage and educate about setbacks for campsites from surface water.
2. Work with USFS to educate campers about proper waste containment and disposal.
3. Minimize the effects of recreational activities within the watershed from both motorized and non-motorized activities. Continue to provide multiple uses while restricting motorized vehicles to designated roads and trails under the Grand Mesa Travel Plan. Prevent recreational vehicle damage to stream banks and upland areas within the protection areas. Restore or close areas degraded by vehicular usage.
4. For those permitted activities utilizing horses or other animals, the permittees will be advised about the source water protection plan and that practices such as avoiding having animals in or near reservoir basins, ditches, and streams should be followed.
5. Work with USFS to encourage and educate boaters about the importance of source water protection on the reservoirs within their Source Water Protection Area.
6. Explore working with the USFS to develop boating prohibitions on reservoirs within the Source Water Protection Area.

Reservoir Operations & Maintenance

There are many small reservoirs within the Town of Hotchkiss's SWPA within the Grand Mesa National Forest. The reservoirs are privately owned mostly by Leroux Creek Water Users Association and require ongoing maintenance and reconstruction. If the maintenance work is not conducted properly, there can be short-term or long-term damage to wetlands, streams or ponds, floodplain, fisheries, state and federal rare and endangered species habitat, drinking water sources, and other resources.

Figure 14: Reservoir within the Town of Hotchkiss's SWPA

Maintenance of Reservoirs

Maintenance activities may include removal of debris upstream of a dam, dam or spillway repairs, clearing shoreline vegetation, removing nuisance aquatic vegetation, managing eutrophication, work on outlet structures, and other in-lake work. Any of these activities may include partial or complete drawdown of the reservoir, however, the reservoirs are typically drained every year depending upon the weather situation.

Releasing sediment-laden waters downstream can lower water quality below standards and affect fisheries and wildlife habitat. Increasing turbidity can also interfere with disinfection at

water supplies downstream. Releasing too much water too fast or with precipitation events can damage public and private property (including homes and roadways) and affect water users (including in-stream uses, shore recreation and withdrawals).

Reservoir Operations & Maintenance Best Management Practices Recommendations:

1. Provide information to the reservoir owners and managers about the source water protection plan and how they can help with protecting the drinking water sources.
2. Implement storm water best management practices to decrease sedimentation to the reservoir and downstream waterways.
3. Comply with all forest service regulations and permits.
4. Comply with State Engineers Office regulations to ensure structural integrity of dams.
5. Ensure proper application of pesticides and herbicides

Zebra and Quagga Mussels

The introduction and spread of the invasive aquatic species zebra mussel (*Dreissena polymorpha*) and quagga mussel (*Dreissena rostriformis burgensis*) into the waters of Colorado is a concern for drinking water suppliers. The zebra and quagga mussels are invasive nonnative freshwater bivalve mollusks. Both species of mussels were originally native to the lakes of southeast Russia and were accidentally introduced into other countries from ocean-going ships. The mussels were first discovered in the United States in the Great Lakes in 1988 and spread to a large number of waterways throughout the country. These mussels do not have many natural predators in North America and can have both economic and environmental impacts.

Zebra mussels are able to anchor themselves to native mussels making it impossible for native mussels to function. In addition they can grow and clog water system pipes associated, making water flow difficult or impossible. Many water systems have had to spend millions of dollars cleaning these mussels from their facility, retrofitting facilities with devices to keep mussels out, and monitoring for them (USGS - Southeast Ecological Science Center, 2012).

Zebra and Quagga Mussels Best Management Practices Recommendations:

1. Develop a public education campaign that provides information to reservoir users about the zebra and quagga mussels and how to prevent transmission of them into reservoirs on the Grand Mesa. Information may include:
    - Good boat hygiene (Decontamination Protocol included in the Appendices of this report)
    - Disposal of live bait in the trash
    - Opportunities for public education include: newspaper articles, signage at the reservoir, brochures, and stations at the reservoirs.
2. Work together with agencies (i.e. U.S. Fish and Wildlife, Colorado State Parks, Colorado Division of Wildlife) to explore opportunities for preventing the spread of these invasive species.

Fuel Storage Tanks

There are households within the Town of Hotchkiss's SWPA that contain aboveground storage tanks (ASTs) on their property. Most storage tanks contain petroleum products such as motor fuel or heating oil. These petroleum products are composed of volatile organic compounds (VOCs) which can pose a serious threat if released into the environment via leaky storage tanks. Storage tanks can become leaky due to corrosion, failure of the piping systems, spills and overfills, as well as equipment failure and human operational error. Even a small spill can have a serious impact. A single pint of oil released into the water can cover one acre of water surface area and can seriously damage an aquatic habitat. A spill of one gallon can contaminate a million gallons of water (US Environmental Protection Agency, 2001).

Storage Tank Best Management Practices Recommendations:

1. Gather information on the status of ASTs within the SWPA using the Colorado Storage Tank Information (COSTIS) website at http://costis.cdle.state.co.us.
2. Encourage fuel vendors to field-check AST to assess the condition of the tanks, location to the source water, and secondary containment surrounding the tanks.
3. Educate the tank owners on the need to assess their storage system and develop a system that guards against leaks and spills that may potentially contaminate the water supply.

Timber Harvesting

Timber harvesting occurs within the Town of Hotchkiss's SWPA. Timber harvesting can potentially generate several forms of non-point pollution. Disturbance of land surfaces from road construction, log landings, and skid trails are the primary causes of sediment transport into streams from this activity. Other potential impacts include: debris from timber harvesting ending up in the stream, oils and fuels used in machinery washing into streams, and an increase in temperature levels as a result of clearing timber along stream banks.

Timber Harvesting Best Management Practices Recommendations:

1. Implement Water Conservation Practices, BMPs, guidelines, and proper design criteria to prevent or reduce sediment delivery to water bodies within the watershed.
2. Work with timber harvesting companies to educate them about fuel spills, lubricants, care when driving trucks that contain fuels, etc.

Vandalism

Although there have been no major acts of vandalism to Hotchkiss's water supply, this is still a concern for the Steering Committee. Similar to terrorism, the potential for acts of vandalism is low due to the remoteness of the area. This is still a concern, however, because impacts from acts of vandalism could be huge. Signs are posted around storage tanks and treatment facilities

that state “No Trespassing: Town of Hotchkiss Municipal Water Supply”. The Steering Committee recommends taking other preventative measures by displaying signage at the roadways that lead to the watershed and developing outreach material that explains the importance of source water protection.

Vandalism Best Management Practices:

1. Continue to inspect watershed and intakes for signs of vandalism.
2. Display signage at roadways leading to the watershed and develop outreach material that explains the importance of source water protection.

Miscellaneous Residential Practices

The Town of Hotchkiss’s Source Water Protection Area includes the Stoney Creek Subdivision located northwest of Town boundaries as well as other rural residential dwelling and potential for future subdivisions over time. Common household practices may cause pollutants to runoff residential property and enter the surface or groundwater as indicated in Figure 15 below. Prevention of surface and groundwater contamination requires education, public involvement, and people motivated to help in the effort. Public education will help people understand the potential threats to their drinking water source and motivate them to participate as responsible citizens to protect their valued resources. The Town will need to coordinate with the County since all the private lands within the protection area are under county jurisdiction.

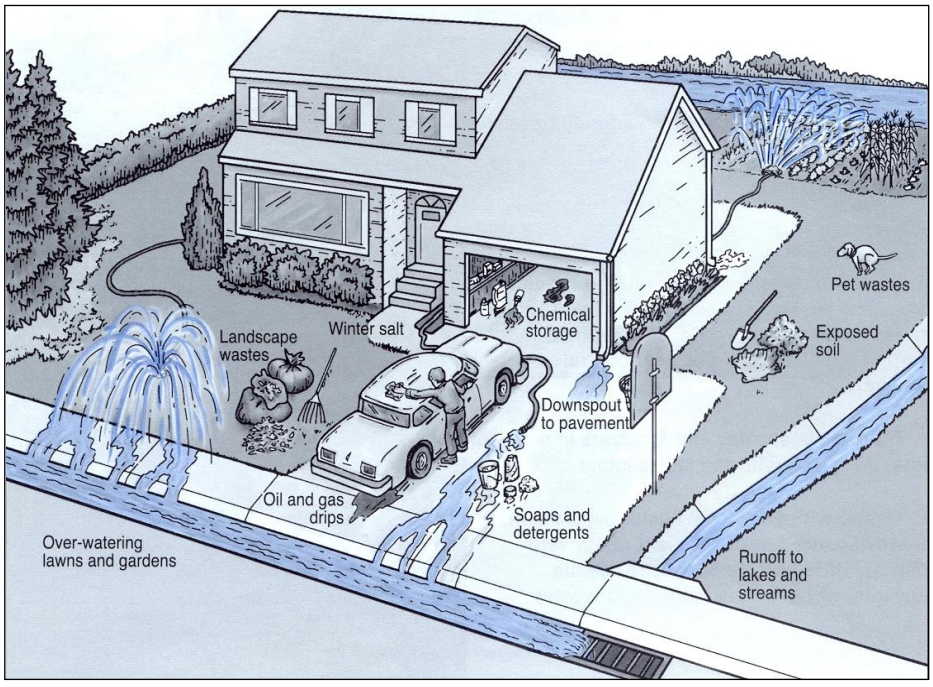

Figure 15: Common residential practices that may be potential sources of contamination to surface or groundwater

Miscellaneous Residential Practices Best Management Practices Recommendations:

1. Conduct public education and outreach programs for SWPA residents to encourage practices that will protect their drinking water source. Topics may include: source water protection, household hazardous waste storage and disposal, fertilizer usage, pet waste cleanup, water conservation, car washing, and secondary containment for above ground fuel storage tanks.
2. Opportunities for public education include: newspaper articles, poster displays at local utility offices and public buildings, water bill inserts, flyers, creek festivals, public forums, workshops and community events, county fair, sheep dog trials.
3. Participate in Delta Conservation District's annual workshops and provide materials about the Source Water Protection Plan and BMPs to prevent contamination of the source waters
4. Provide Information concerning the SWPP in the annual Consumer Confidence Report (CCR). Insert an additional letter or paragraph in the CCR about the completed SWPP and information on how they can help prevent pollutants from entering the source waters.
5. Post a copy of the SWPP on the Town's website

Cattle/Wildlife Grazing

Land within the Town of Hotchkiss's Source Water Protection Area is home to many wild animals such as deer, elk and bears, who feed upon the land. In addition to wildlife grazing, livestock (cattle) grazing occurs on the federal lands within the SWPA. Livestock operators are authorized to graze on areas called allotments through an approved USFS grazing permit. Cattle-grazing within Hotchkiss's SWPA is managed by Leroux Creek Cattleman's Association. Jim and Gail Ware of Leroux Creek Cattle Pool have attended Hotchkiss's SWPP planning meetings, and their input on grazing impacts was greatly appreciated.

While this grazing activity is a low concern to the Steering Committee, this activity can impact riparian health, stream-channel conditions and water quality. The most common water quality impacts include pathogen contamination, sedimentation, and increased water temperatures from loss of vegetative stream coverage. Grazing activities with the highest potential for direct and indirect impacts to water resources include long-term concentrated grazing in riparian areas, and trampling/trailing near water sources. Direct bank damage may add large amounts of sediment directly into streams, especially in wet meadow streams or erosive topography that is prone to gully formation.

The Leroux Creek Cattle Pool has taken great strides to mitigate impacts from cattle grazing within Leroux Creek's watershed. Their management scheme is based on deferred rotation. This means their grazing permit is split into four pastures and cattle are rotated through each pasture to prevent over-grazing. This ensures that vegetation can achieve maximum growth during periods when no grazing occurs, allowing for a higher variety of vegetation and healthier riparian areas. In addition, salt blocks are placed away from water sources so as to keep cattle from trampling riparian areas.

Figure 16: Cattle grazing within the Town of Hotchkiss's Source Water Protection Area

Cattle/Wildlife Grazing Best Management Practices Recommendations:

1. Minimize the effects of livestock grazing on water sources within the Town of Hotchkiss source water protection areas, as outlined in the grazing permits and allotment management plans issued by the Forest Service and BLM.
2. Share a copy of the SWPP with Leroux Creek Cattle Pool.

Septic Systems

The Stoney Creek Subdivision and other residential areas within Hotchkiss's Source Water Protection Area consist of properties that rely on onsite wastewater treatment systems (OWTS) or septic systems to dispose of their sewage. A septic system is a type of onsite wastewater system consisting of a septic tank that collects all the sewage and a leach field that disperses the liquid effluent onto a leach field for final treatment by the soil.

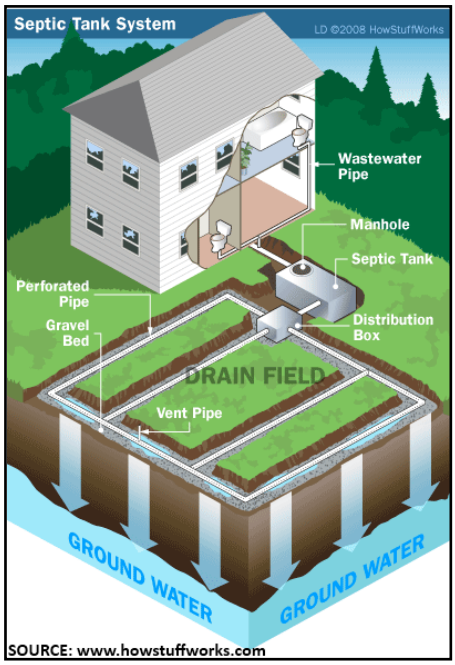

Figure 17: Schematic of a septic system

When onsite wastewater systems are properly designed, constructed, and maintained, they effectively reduce or eliminate most human health or environmental threats posed by pollutants such as nitrogen, phosphorus, and disease-causing bacteria and viruses in household wastewater. However, they require regular maintenance or they can fail. Unapproved, aging, and failing septic systems have a large impact on the quality and safety of a water supply. The failure to pump solids that accumulate in the septic tank can eventually clog the

lines and cause untreated wastewater to back up into the home, to surface on the ground, or to seep into groundwater. If managed improperly, these residential septic systems can contribute excessive nutrients, bacteria, pathogenic organisms, and chemicals to the groundwater.

In Delta County individual sewage disposal systems are permitted by Delta County Health Department. The County Health Department administers and enforces the standards, rules, and regulations outlined in the State of Colorado's Revised Statute 25-10-105. Delta County requires that a permit be issued for the installation, repair, replacement or alteration of any new or existing OWTS in Delta County (Delta County Planning and Community Development Dept.); however, because there is no formal building permit process, it can be difficult for the County to become aware of any new development in remote parts of the county.

Septic System Best Management Practices Recommendations:

1. Develop a public education program for property owners within the SWPA to provide basic information on the Source Water Protection Plan. Public education will include: the proper use and maintenance of their septic systems and how the source of their drinking water can be affected by an inadequately functioning septic system.
2. Work with Delta County Health Department to develop a mailing list of residents within the SWPA who have septic systems and send them educational materials.
3. Encourage Delta County Health Department to work closely with Delta County Planning and Community Development Department on subdivision review for septic system uses
4. The County Health Department will be encouraged to use this opportunity to educate the property owner on the link between good septic practices and protecting source water.

Road Maintenance

Dust abatement that contains chemicals such as magnesium chloride may be applied to parts of the roadway within the protection area. Dust suppressants abate dust by changing the physical properties of the road surface by creating a hard, compact surface. The use of chemical dust suppressants prevents road particulates from becoming airborne.

Magnesium chloride, used in dust abatement, is highly soluble in water and has the potential to move through the soil with water. The movement is dependent on the rate and frequency of rainfall, the drainage characteristics, and soil type. If the soil surface is not bound together well or if the rain event is extreme, dust suppressant treated soil particles can be carried by overland flow into streams, rivers, and ditches. Potential water quality impacts include elevated chloride concentrations in streams downstream of application areas and shallow groundwater contamination (US Environmental Protection Agency, 2002).

Road Maintenance Best Management Practices Recommendations:

1. Keep informed on the road maintenance practices and schedules within the Source Water Protection Area (SWPA) including: grading, de-icing, dust abatement and Best Management Practices used.
2. Provide Delta County Road and Bridge District 3 and USFS with a copy of the Source Water Protection Plan and map of the protection area. Encourage them to use road Best Management Practices to prevent road materials from entering the source waters.

Abandoned Wells

There are six identified abandoned natural gas wells located on US Forest System and private lands within Hotchkiss's SWPA. Abandoned wells can be a direct route for contaminants to drinking water sources if they are not properly abandoned. As shown in Table 6, the six wells identified in the SWPA have been properly abandoned in accordance to the COGCC Rule 319A. Because all of these wells have been properly abandoned, this is a low concern to the Steering Committee, however they recommend keeping informed of the status of each abandoned well.

Table 6: Status of Abandoned Wells within Hotchkiss's SWPA

Well Name/No.	Facility ID	Operator	Status*	Status Date
Overland Reservoir Govern #1	05-029-05000	Union Oil Company of California	DA	10/28/1957
Gov #1 – C	05-029-05001	Sunray Mid-Continent Oil Co.	DA	08/22/1961
Green Mountain Unit #1	05-029-0626	Amoco Production Co.	AL	05/3/1983
Powers Fed #11-30	05-029-06006	Petro-Lewis Corporation	DA	02/26/1973
Oak Mesa #1A	05-029-06096	Gunnison Energy Corporation	DA	08/23/2005
Oak Mesa #1	05-029-06088	Gunnison Energy Corporation	PA	09/23/2005

***Status Code**
AL – Abandoned Location
DA – Dry and Abandoned
PA – Plugged and Abandoned

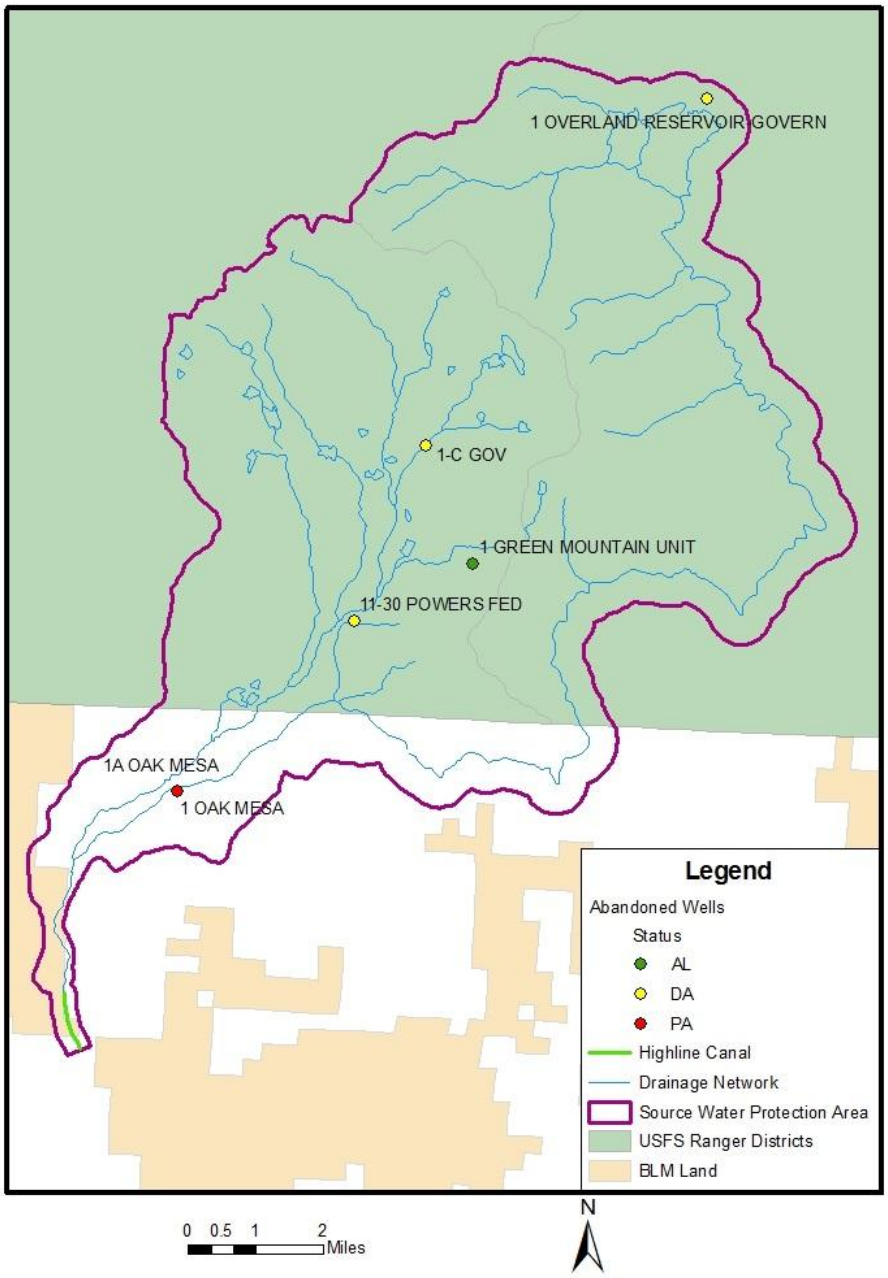

Figure 18: Abandoned Wells within Hotchkiss's SWPA

Abandoned Wells Best Management Practices Recommendations:

1. Work with the USFS to stay informed on the status of abandoned wells that exist within the SWPA.
2. Secure and cap wells that are temporarily not being used and permanently cap wells that are abandoned.

SOURCE WATER PROTECTION MEASURES

Best Management Practices

The Steering Committee reviewed and discussed several possible best management practices that could be implemented within the Source Water Protection Area to help reduce the potential risks of contamination to the community's source water. The Steering Committee established a "common sense" approach in identifying and selecting the most feasible source water management activities to implement locally. The focus was on selecting those protection measures that are most likely to work for the community. The best management practices were obtained from multiple sources including: Environmental Protection Agency, Colorado Department of Public Health and Environment, Natural Resources Conservation Service, and other source water protection plans as well as ideas from the Steering Committee.

The Steering Committee recommends the best management practices listed in Table 7, "Source Water Protection Best Management Practices" be considered for implementation by:

- Town of Hotchkiss
- Delta County
- Bureau of Land Management
- US Forest Service
- Leroux Creek Cattle Pool
- Leroux Creek Water Users Association
- Mining Companies
- Oil and Gas Industry
- Timber Harvesting Companies

Evaluating Effectiveness of Best Management Practices

The Town of Hotchkiss is committed to developing a tracking and reporting system to gauge the effectiveness of the various source water best management practices that have been implemented. The purpose of tracking and reporting the effectiveness of the source water best management practices is to update water system managers, consumers, and other interested entities on whether or not the intended outcomes of the various source water best management practices are being achieved, and if not, what adjustments to the Source Water Protection Plan will be taken in order to achieve the intended outcomes. It is further recommended that this Plan be revised at a frequency of once every 3-5 years or if circumstances change resulting in the development of new water sources and source water protection areas, or if new risks are identified.

The Town of Hotchkiss is committed to a mutually beneficial partnership with the Colorado Department of Public Health and Environment in making future refinements to their source water assessment and to revise the Source Water Protection Plan accordingly based on any major refinements.

Table 7: Source Water Protection Best Management Practices

Issues	Best Management Practices	Implementers
Wildfires	1. Fuels Reduction Plan - The District Ranger will continue to implement the National Fire Plan to reduce fuels within the areas of National Forest lying within the source water protection area. The Forest Service will provide an opportunity for the public during their NEPA process. The Steering Committee will become actively involved in reviewing the plan and providing comment when needed on source water protection concerns. 2. Explore opportunities to work with private landowners for landscape scale fuel reduction and defensible space projects. 3. Fire Prevention – The District Ranger will continue to implement their fire prevention plan which includes public education programs: Fire Wise Program and Project Learning Tree. 4. Share a copy of the SWPP with Delta County Sheriff's Department as it pertains to fire bans and restrictions. Encourage collaboration with Sherriff's office in reviewing fire prevention measures 5. Develop fire response plans for the Source Water Protection Area with BLM 6. Request Full Suppression designation on Source Water Protection Area with a plan to manage amount of vegetation in the area	1. USFS, BLM, Steering Committee 2. Hotchkiss Fire Protection District, West Region Wildfire Council, Colorado State Forest Service 3. USFS 4. Delta County Sheriff's Department, Steering Committee 5. BLM, Hotchkiss Fire Protection District 6. BLM, Hotchkiss Fire Protection
Spills/Accidents on Roads	1. Meet with the Hotchkiss Fire District to discuss their emergency response plans for responding to hazardous and non-hazardous vehicular spills within the SWPA. Include this information in the emergency plans for the Town of Hotchkiss and ask Hotchkiss Fire District to do likewise 2. Provide information to the local fire departments: a. Importance of the Source Water Protection Plan b. Location of the intakes and Source Water Protection Area c. Overview of the Emergency Contingency Plan d. Personnel to be notified in the event of an emergency 3. Educate the public on how to call "911" to report any spills within the SWPA.	1. Steering Committee, Town of Hotchkiss, Hotchkiss Fire Protection District 2. Steering Committee 3. Steering Committee

	4. Place signage on public roads within the protection areas to educate the public about reporting spills on the roadway.	4. Steering Committee, Delta County, USFS
Oil and Gas Development	1. Stay informed of any potential oil and gas developments on federal lands within the protection area and become involved in the public process to encourage BMPs to protect water quality. 2. Encourage industry representative to share information about their operation, including chemicals utilized as part of their operations, within the source water protection area by inviting them to participate in the Town of Hotchkiss Source Water Protection Steering Committee meetings. 3. Encourage the local community to become actively involved in participating in local and regional oil and gas forums. 4. Encourage industry to educate all employees and subcontractors on the location of the source water protection areas, Emergency Response Plans, Storm Water Management plans, and Spill Response Plans. 5. The Town of Hotchkiss request county notification of application for permit to drill (APD). The Town and/or Steering Committee will provide comment. 6. The Steering Committee will encourage the industry to comply with and implement all actions in the approved Storm Water Management Plan to prevent or minimize storm water runoff impacts to the source waters. 7. The Steering Committee will encourage the industry to: a. Administer a Spill Prevention, Control, and Countermeasures Plan to prevent surface water and ground water contamination b. Immediately notify the water providers of any spills, and c. Use proper equipment & vehicle maintenance BMPs to prevent chemicals from contaminating ground water. 8. Develop an action plan with the Town of Hotchkiss, Hotchkiss Fire Protection District, Industry Representatives and local residents for spill response and/or other emergencies.	1. Steering Committee, BLM, USFS 2. Steering Committee, Industry Representatives 3. Steering Committee, BLM 4. Steering Committee, Industry Representatives 5. Delta County, Steering Committee 6. Steering Committee, Industry Representatives 7. Steering Committee, Industry Representatives 8. Town of Hotchkiss, Hotchkiss Fire Protection District, Industry Representatives

Coal Mining Development	1. Stay informed of any potential coal mining development within the protection area and become involved in the public process to encourage BMPs to protect water quality. 2. Encourage industry representative to share information about their operation, including chemicals utilized as part of their operations, within the source water protection area by inviting them to participate in the Town of Hotchkiss Source Water Protection Steering Committee meetings. 3. Encourage industry to educate all employees and subcontractors on the location of the source water protection areas, Emergency Response Plans, Storm Water Management plans, and Spill Response Plans.	1. Steering Committee, Town of Hotchkiss 2. Steering Committee, Industry Representatives 3. Steering Committee, Industry Representatives
Terrorism	1. Continue to inspect watershed and intakes for signs of terrorism. 2. Display signage at roadways leading to the watershed and develop outreach material that explains the importance of source water protection.	1. System Operators 2. Town of Hotchkiss, USFS
Recreational Activities	1. Work with USFS to encourage and educate about setbacks for campsites from surface water. 2. Work with USFS to educate campers about proper waste containment and disposal. 3. Minimize the effects of recreational activities within the watershed from both motorized and non-motorized activities. Continue to provide multiple uses while restricting motorized vehicles to designated roads and trails under the Grand Mesa Travel Plan. Prevent recreational vehicle damage to stream banks and upland areas within the protection areas. Restore or close areas degraded by vehicular usage. 4. For those permitted activities utilizing horses or other animals, the permittees will be advised about the source water protection plan and that practices such as avoiding having animals in or near reservoir basins, ditches, and streams should be followed. 5. Work with USFS to encourage and educate boaters about the importance of source water protection on the reservoirs within their Source Water Protection Area. 6. Explore working with the USFS to develop boating prohibitions on reservoirs within the Source Water Protection Area.	1. Town of Hotchkiss, USFS 2. Town of Hotchkiss, USFS 3. USFS 4. USFS 5. Steering Committee, USFS 6. Steering Committee, USFS

Reservoir Operations & Maintenance	1. Provide information to the reservoir owners and managers about the source water protection plan and how they can help with protecting the drinking water sources. 2. Implement storm water best management practices to decrease sedimentation to the reservoir and downstream waterways. 3. Comply with all forest service regulations and permits. 4. Comply with State Engineers Office regulations to ensure structural integrity of dams. 5. Ensure proper application of pesticides and herbicides	1. Steering Committee, USFS 2. Reservoir Owners 3. Reservoir Owners 4. Reservoir Owners 5. Reservoir Owners
Fuel Storage Tanks	1. Gather information on the status of ASTs within the SWPA using the Colorado Storage Tank Information (COSTIS) website at http://costis.cdle.state.co.us. 2. Encourage fuel vendors to field-check AST to assess the condition of the tanks, location to the source water, and secondary containment surrounding the tanks. 3. Educate the tank owners on the need to assess their storage system and develop a system that guards against leaks and spills that may potentially contaminate the water supply.	1. Steering Committee 2. Steering Committee 3. Steering Committee
Timber Harvesting	1. Implement Water Conservation Practices, BMPs, guidelines, and proper design criteria to prevent or reduce sediment delivery to water bodies within the watershed. 2. Work with timber harvesting companies to educate them about fuel spills, lubricants, care when driving trucks that contain fuels, etc.	1. USFS 2. USFS, Steering Committee, Timber Harvesting Companies
Vandalism	1. Continue to inspect watershed and intakes for signs of vandalism. 2. Display signage at roadways leading to the watershed and develop outreach material that explains the importance of source water protection.	1. Water System Operators 2. Town of Hotchkiss, USFS, Delta County
Miscellaneous Residential Practices	1. Conduct public education and outreach programs for SWPA residents to encourage practices that will protect their drinking water source. Topics may include: source	1. Steering Committee, Water Utility, Town of

	water protection, household hazardous waste storage and disposal, fertilizer usage, pet waste cleanup, water conservation, car washing, and secondary containment for above ground fuel storage tanks.	Hotchkiss
	2. Opportunities for public education include: newspaper articles, poster displays at local utility offices and public buildings, water bill inserts, flyers, creek festivals, public forums, workshops and community events, county fair, sheep dog trials.	2. Steering Committee
	3. Participate in Delta Conservation District's annual workshops and provide materials about the Source Water Protection Plan and BMPs to prevent contamination of the source waters	3. Steering Committee
	4. Provide Information concerning the SWPP in the annual Consumer Confidence Report (CCR). Insert an additional letter or paragraph in the CCR about the completed SWPP and information on how they can help prevent pollutants from entering the source waters.	4. Town of Hotchkiss
	5. Post a copy of the SWPP on the Town's website	5. Town of Hotchkiss
Cattle/Wildlife Grazing	1. Minimize the effects of livestock grazing on water sources within the Town of Hotchkiss source water protection areas, as outlined in the grazing permits and allotment management plans issued by the Forest Service and BLM.	1. USFS, Leroux Creek Cattle Pool
	2. Share a copy of the SWPP with Leroux Creek Cattle Pool.	2. Town of Hotchkiss
Septic Systems	1. Develop a public education program for property owners within the SWPA to provide basic information on the Source Water Protection Plan. Public education will include: the proper use and maintenance of their septic systems and how the source of their drinking water can be affected by an inadequately functioning septic system.	1. Delta County Health Department, Steering Committee
	2. Work with Delta County Health Department to develop a mailing list of residents within the SWPA who have septic systems and send them educational materials.	2. Steering Committee, Delta County Health Department
	3. Encourage Delta County Health Department to work closely with Delta County Planning and Community Development Department on subdivision review for septic system uses	3. Delta County Health Department
	4. The County Health Department will be encouraged to use this opportunity to educate	

	the property owner on the link between good septic practices and protecting source water.	4. Delta County Health Department
Road Maintenance	1. Keep informed on the road maintenance practices and schedules within the Source Water Protection Area (SWPA) including: grading, de-icing, dust abatement and Best Management Practices used. 2. Provide Delta County Road and Bridge District 3 and USFS with a copy of the Source Water Protection Plan and map of the protection area. Encourage them to use road Best Management Practices to prevent road materials from entering the source waters.	1. Steering Committee 2. Steering Committee, USFS, Delta County Road & Bridge District 3
Abandoned Wells	1. Work with the USFS to stay informed on the status of abandoned wells that exist within the SWPA. 2. Secure and cap wells that are temporarily not being used and permanently cap wells that are abandoned.	1. Steering Committee, USFS 2. USFS
Federal Land Management Plans	1. The Forest Service plans to begin the revision process for its Land and Resource Management Plan (Forest Plan) for the area sometime in the future. The Forest Service will educate and involve the public in the opportunities for public input at public meetings. The Steering Committee should become actively involved in reviewing the plan and providing comment when needed on source water protection concerns. 2. The Steering Committee should actively participate in the public participation process for revision of the GMUG's 1993 Oil and Gas Leasing EIS. 3. The BLM's Uncompahgre Basin Field Office is currently revising its Resource Management Plan, and members of the Steering Committee should participate in the public comment process for that effort. 4. The Steering Committee will participate in any revisions made to Delta County's Specific Development Regulations pertaining to the source water area.	1. USFS, Steering Committee 2. Steering Committee 3. Steering Committee 4. Town of Hotchkiss
Water Utility – Supply and Operations	1. Perform regular inspection of the surface water intakes, wells and springs. 2. Protect areas around intakes with fencing and signage. For those facilities located on federal lands, obtain permission of the appropriate land management agency prior to fencing or erecting signs.	1. System Operators 2. System Managers

	3. Ensure that the water treatment plant is properly managed, operated and maintained to prevent contamination of the drinking water.	3. System Managers
	4. Store chemicals properly at the treatment plant.	4. System Managers
	5. Ensure that all employees are familiar with the Source Water Protection Plan, emergency and contingency plan, and hazardous spill response.	5. System Manager
	6. Placement of Federal Offense Warning signs at the treatment plant.	6. System Managers

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APPENDICES[4]

A. Contingency Plan

B. Source Water Assessment Report

C. Source Water Assessment Report Appendices

D. MOU Between CDPHE and U.S. Forest Service Rocky Mountain Region

E. Table A-1 Discrete Contaminant Types

F. Table A-2 Discrete Contaminant Types (SIC Related)

G. Table B-1 Dispersed Contaminant Types

H. Table C-1 Contaminants Associated with Common PSOC's

I. Hotchkiss Wildfire Risk Summary Report

[4] All appendices are located on the CD version of this SWPP.