

Source Water Protection

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Source Water Protection

- What is Source Water Protection?
- How can water systems implement protection activities?
- Resources available to water systems.

What is Source Water Protection?

The implementation of strategies within an identified Drinking Water Source Area to minimize the potential impact of contaminant sources on raw (untreated) water quality.

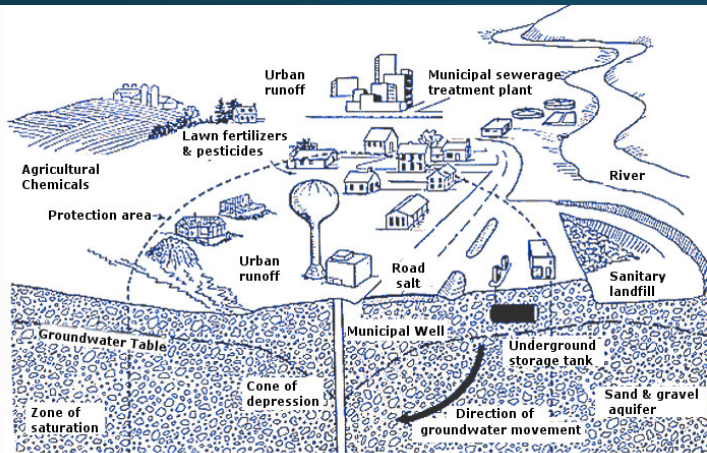


In other words:

Addressing potential contaminant sources at their point of origin to protect the drinking water supply.

What is Source Water Protection?

- A 5-step process:
 - Identify the raw water supply (delineate the drinking water source area).
 - Inventory potential contaminant sources within the drinking water source area.
 - Determine water system susceptibility to identified potential contaminant sources.
 - Identify best management practices that will reduce risk from potential contaminant sources.
 - Implement best management practices.



Source water comes from rain and snow that seeps into or flows over the ground before moving into water supply wells or intakes. Activities and facilities on the ground surface can contribute substances or contaminants that are carried by water flowing to the well.

What is Source Water Protection?

- In Oregon:
 - Source Water Protection is voluntary
 - Administered by cooperatively by DEQ and OHA where:
 - DEQ is responsible for protecting the waters of the state
 - OHA is responsible for protecting public health and adopting drinking water quality standards
 - DEQ works primarily with surface water systems
 - OHA works primarily with groundwater systems

What is Source Water Protection?

- Overall Goal for Source Water Protection in Oregon:
 - Through implementation of education, protection, and pollution prevention measures:
 - Provide high quality drinking water sources and
 - Minimize future public expenditures for drinking water treatment

What is Source Water Protection?

- To further our goal, DEQ and OHA:
 - Provide Source Water Assessments to water systems
 - Provide outreach to water systems
 - Direct contact
 - Online resources
 - Technical assistance
 - Prioritize water quality work within Drinking Water Source Areas
 - DEQ clean-up programs
 - Water quality data information sharing
 - Contaminants of Emerging Concern
 - Provide funding for drinking water source protection projects
 - Drinking Water Source Protection Grants

How PWSs can Implement Protection Activities

- Review Source Water Assessment:
 - Original Reports 1998 - 2005
 - Report updates 2016 - 2022
- Become familiar with the Drinking Water Source Area (DWSA) and the potential contaminant sources (PCSs) within the DWSA
- Note the risk level associated with each PCS and focus on the high- and moderate-risk PCSs
- Review best management practices (BMPs) recommended for high- and moderate-risk PCSs
- Implement BMPs that are best fit for the community
- Seek technical assistance from OHA Regional Hydrogeologist

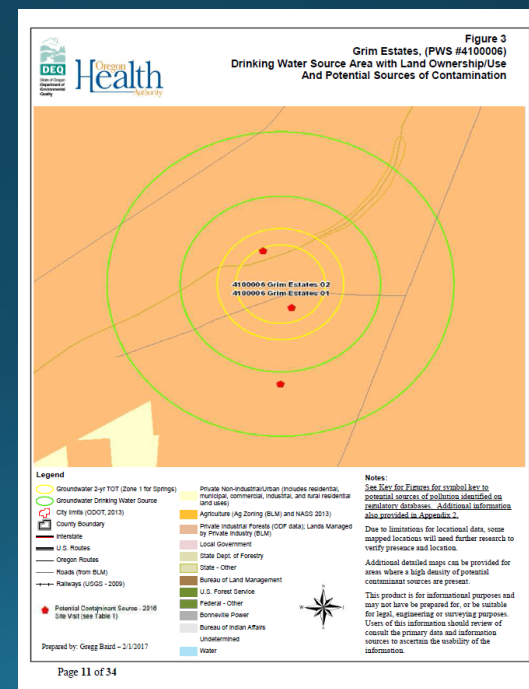
Source Water Protection

What Steps Should PWS Take?

Step 1

Groundwater SWA Update Figure 3.

- Know where the Drinking Water Source Area is located.
 - Within city limits
 - Extends into the county
 - Rural/private land
- Identify who has jurisdiction/regulatory control?
 - City
 - County
 - Dept of Agriculture
 - US Forest Service / Oregon Forestry Dept

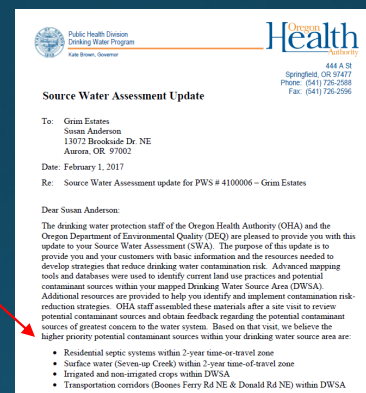


Source Water Protection *What Steps Should PWS Take?*



Step 2

- Use Source Water Assessment to identify high and moderate risk PCSs.

SWA Update Cover Letter & PCS Inventory Table



- Review and update PCS list, if needed.

 Oregon Department of Environmental Quality	 Oregon Health Division	Table 1: Inventory of Potential Sources of Pollution as identified in readily accessible state and federal databases and GIS layers Source Water Assessment Addendum <i>see Appendix 2 for Key to Tables for Notes and Descriptions of Acronyms</i>				PWS Name: PWS Number: 4100006		Grim Estates
<p>This information supplements the Original Source Water Assessment Inventory dated between 1998 and 2005 and should be used in conjunction with the original inventory to provide a more detailed analysis of potential sources of pollution. Note that due to limitations for locational data in state databases, some locations will need further research to verify presence and location.</p>								
Primary Land Ownership/Use(s) Private Non-industrial (rural residential) land uses Agricultural land use							Data Source Land use map - Figure 3	
Other potential sources of pollution identified based on aerial photographs, topographic maps or local knowledge.								
Name		Address/location		City	County	Data Source		
Seven-up creek within 2-year time-of-travel zone		150 ft. north of well		Aurora	Marion	Field visit		
Residential septic systems within 2-year time-of-travel zone		Surrounding well		Aurora	Marion	Field visit		
Irrigated and non-irrigated crops within DWSA		Surrounding well		Aurora	Marion	Field visit		
Regulatory Database Results - State and Federal								
Database Identifier (DB_ID)	Site Identifier (Site_ID)	Status	Common Name	Address	City	County	Retrieval Date (RET_DATE)	Data Source
Road - Marion County Public Works	6645698	Unknown	Marion County Public Works	Not Applicable	Unknown	Marion	2012	

Source Water Protection

What Steps Should PWS Take?

Step 3

- Identify potential best management strategies for identified high- and/or moderate-risk potential contaminant sources.

SWA Update Management Strategies Table

 Management Strategies for High Priority Potential Sources of Pollutants Identified in Grim Estates Drinking Water Source Area <small>Contact Drinking Water Protection Staff with questions or for assistance with any potential sources of contamination not identified in this document.</small>				
Source of Info or Regulatory Database Identifier (DB_ID)	Category	Potential Pollutant Type	Potential Impact	Recommended Management Measures and Fact Sheets/Resources
Aerial or Local Knowledge Crops	05 AG – Crops Risk = M	Crops - Irrigated (inc. orchards, vineyards, nurseries, greenhouses) and Non-irrigated (inc. Christmas trees, grains, grass seed, pasture)	Over-application or improper handling of pesticides/fertilizers may impact drinking water. Excessive irrigation may transport contaminants or sediments to groundwater/surface water through runoff or infiltration. Drip-irrigated and non-irrigated crops are considered to be lower risk.	<p>☐ Encourage farm operator to work with their local SWCD, Oregon State University County Extension Agent, or Natural Resources Conservation Service to develop a Farm Plan, if they have not done so already (web-sites below). Ensure the Farm Plan addresses: crop production practices, pesticide/fertilizer/petroleum product handling and storage, vehicle/equipment maintenance and repair, livestock waste storage and treatment, hazardous waste management, wastewater disposal/fill, and wells.</p> <p>Agency Web-sites: Soil and Water Conservation Districts: http://swcd.org/conservation-districts/directory OSU Extension: http://extension.oregonstate.edu/field-usa Natural Resources Conservation Service, Oregon: http://www.nrcs.usda.gov/wps/portal/nrcs/site/or/home/ Oregon Department of Agriculture: http://www.oregon.gov/ODA/Pages/default.aspx ☐ Also send relevant fact sheets and information below.</p> <p>Fact Sheets/Resources *Managing Agricultural Fertilizer Application: http://www.oregonstate.edu/web/dep/docs/EPA/EPA505PracticesBulletin_AgFertilizer.pdf *Managing Large-Scale Application of Pesticides: http://www.deq.state.or.us/web/dep/docs/EPA/EPA505PracticesBulletin_PesticidesLargeScale.pdf *Irrigation System Maintenance, GW Quality, and Improved Production: http://catalog.extension.oregonstate.edu/em8964 ☐ If this land covers a large percentage of your Drinking Water Source Area, notify your local Soil and</p>

Source Water Protection

What Steps Should PWS Take?

Step 4

- Evaluate potential BMPs based on:
 - Benefit achieved (risk reduction, economic factors)
 - Challenges (time, staff, cost)
 - Community buy in
 - Long-term plans
- Start with BMPs that are easy to implement

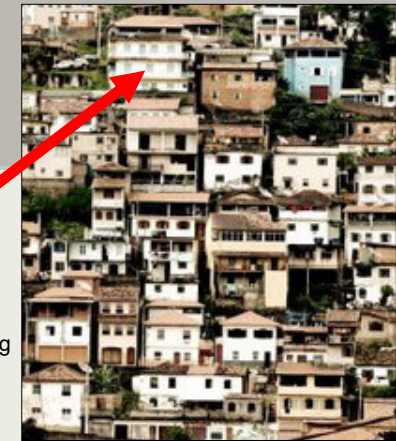
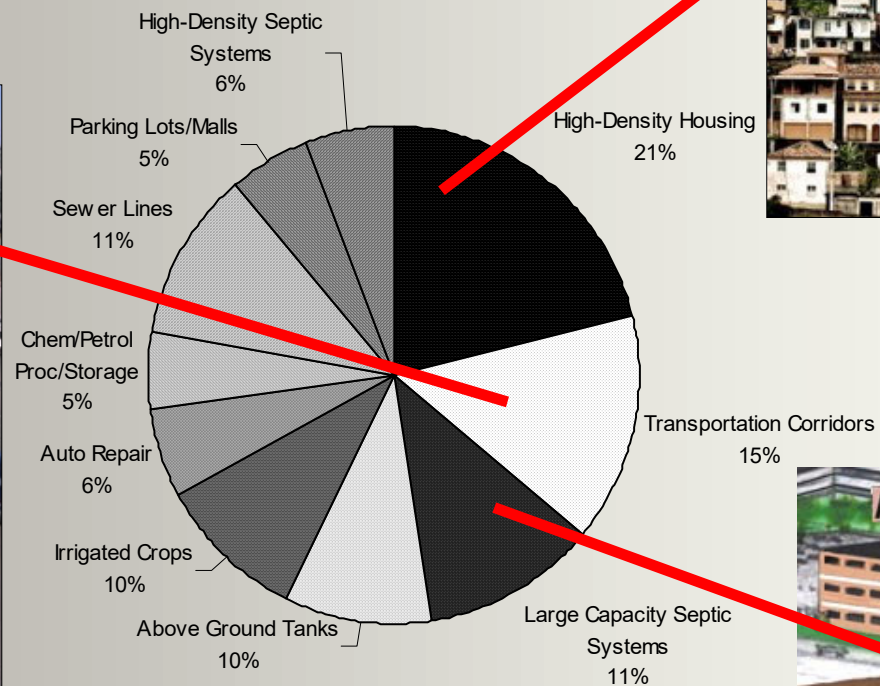
Implementation Matrix

BMPs Ease of Implement ation	BMPs for High Risk PCSs	BMPs for Mod Risk PCSs	BMPs for Low Risk PCSs
Easy to do	High Risk PCS BMP Easy to do		
Mod difficult to do			
Difficult to do			Low Risk PCS BMP Hard to do

Oregon's SWA Inventory Results

Groundwater Systems

Highest Potential Risks in 2-yr TOT



Examples of Drinking Water Protection Strategies

- Public awareness/education – distribution of fact sheets/flyers on:
 - Healthy lawn care, septic systems, horse management, above ground storage tanks
- Pesticide/Household hazardous waste education/collection
- Community/watershed spill response plans
- Protective ordinances/use restrictions regarding:
 - Vehicle maintenance, chemical/fertilizer use prohibition
- Easements/land purchases in sensitive areas – agriculture/forestry
- Septic system outreach/maintenance program
- Abandonment of improperly constructed wells
- Working with State Agencies to incorporate BMPs into operating permits for CAFOs and mining operations

Resources Available to Water Systems

- Source Water Assessment Report
- Technical Assistance from OHA & DEQ Drinking Water Source Protection Staff
- DEQ Drinking Water Protection Website:
 - <https://www.oregon.gov/deq/wq/programs/Pages/dwp.aspx>
 - Links to an online drinking water protection interactive viewer, fact sheets, resource guides for groundwater and surface water, etc...
- OHA-DWS Source Water Protection Website:
 - <https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/SOURCEWATER/Pages/swp.aspx>
 - Links to “Protecting Drinking Water” brochure, Drinking Water Source Protection Fund, wellhead protection guidance manual, fact sheets and manuals regarding groundwater, groundwater chemistry, and well construction, etc...
- Drinking Water Source Protection Grant fund:
 - \$200,000 in projects funded each year
 - Up to \$50,000 per project
 - LOIs can be submitted mid-January to mid-March each year, Emergency Projects can be submitted anytime.

Drinking Water Source Protection Fund: Example Projects

City of Scappoose

Update modeled
Drinking Water Source
Areas

Bear Creek Mobile Home Park

Complete a Drinking
Water Source
Protection Plan

Jackson Creek Water Association

Properly abandon a
private well that was
inadequately
constructed

City of Lakeview

Underground storage
tank survey of DWSA
and nearby area to
locate and evaluate
suspected leaking tanks

City of Columbia City

Remove stormwater
injection wells, re-route
stormwater away from
city drinking water
wells.

City of Coburg

Install monitoring wells
upgradient of city
drinking water wells,
sample for potential
contaminants

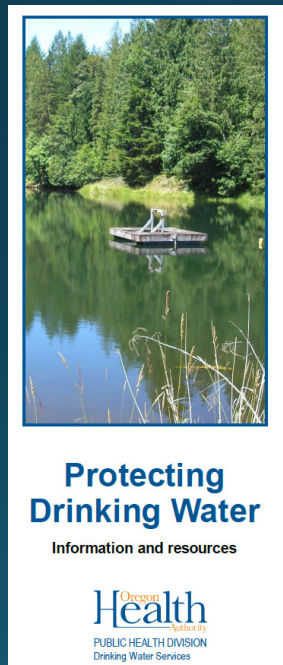
Walterville Elementary

Heating oil tank and
underground piping
removal

Silver Falls School District

Underground storage
tank removals

How can you assist?



- Ask
 - Has the operator reviewed their Source Water Assessment?
 - Have they thought about local land use practices and how they might impact drinking water quality?
- Listen
 - Has the operator expressed concern about a local land use practice and how it might impact drinking water quality?
 - Has the operator expressed an interest in drinking water source protection?
 - Has the operator mentioned things they've done to protect the drinking water source?
- Share
 - Protecting Drinking Water brochure
 - Regional Hydrogeologist contact information
 - Links to DEQ & OHA source protection web pages
- Report
 - Contact Regional Hydrogeologist with any information pertaining to:
 - Operator concerns regarding local land use practices and their potential impact on drinking water quality
 - Water system interest in drinking water source protection
 - Things the water system has done to protect their water source

Questions?