

Washington State Department of Health | Division of Environmental Public Health | Office of Drinking Water

Planning and Source Water Protection

Heather Cannon
Regional Planner
Eastern Regional Office



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Our Mission

To protect the health of the people of Washington State by ensuring safe and reliable drinking water.

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Water System Planning

A planning document is a systematic program for attaining and maintaining safe and reliable drinking water.

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Two Planning Documents

- ◆ *Water System Plan (WSP)* for systems that are growing or have specific issues that need to be addressed in depth
- ◆ *Small Water System Management Program (SWSMP)*

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Water System Plan

- Growth projections
- Demand forecasting
- System analysis
- Water use efficiency
- Capital improvement program
- Financial program
- And more . . .

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A Water System Plan

- ◆ Provides a path to meet future needs
- ◆ Identifies major external factors like limited water or high growth
- ◆ Help focus in on “red flags” and potential solutions

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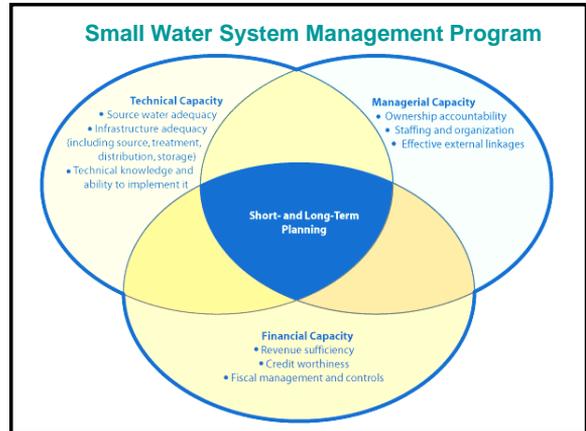
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Water System Plan Guidance

- ◆ For a WSP, WAC 246-290-100 is the framework for water system planning
- ◆ The system and ODW meet to discuss system needs *and*
 - Work to establish the level of detail
 - Scope and detail related to system size and complexity

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Small Water System Management Program

- ◆ The SWSMP Guidance is an online planning document -
 - Evaluate and improve technical, managerial, and financial capacity and continue the process
 - Improve clarity for owners, operators, and customers in the viability of their water system
 - Evaluate facility and operational needs and link them to the budget

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Planning Goal

To create a document that the system uses to make decisions that will lead to a sustainable future.

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Planning leads to...

A system that:

- Has the political will and ability to lead
- Educates and communicates effectively with customers
- Has rates to recover full operational costs
- Has technical, financial, and managerial capacity

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Planning develops system capacity

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Capacity

- ◆ To achieve and maintain compliance with relevant local, state and federal plans and regulations
- ◆ To have the knowledge, tools, and resources to ensure you can provide safe and reliable drinking water now and into the future

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Capacity

- ◆ To address system challenges
 - Increasing demands
 - Economic down turn and development slow down
 - Budget issues and unpredictable funding
 - New rules and new health risks
 - Service requests and temporary water systems
 - System risk and emergency response
 - Consumers' perception about the "value of water"
 - Staff changes

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Three Types of Capacity

- ◆ Technical
- ◆ Financial
- ◆ Managerial

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Capacity

- ◆ Technical
 - Source water adequacy
 - System operations
 - Infrastructure adequacy

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Capacity

- ◆ Financial
 - Revenue sufficiency
 - Fiscal management
 - Credit worthiness

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Capacity

- ◆ Managerial
 - Ownership accountability
 - Planning and performance measurement
 - Staff knowledge and training
 - Effective external linkages

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Managerial Capacity

- ◆ Includes source water protection – protection of your drinking water source through managerial decision making, planning, and action.

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Source Water Protection

- ◆ Control of the use of the land in the sanitary control area by obtaining appropriate covenants
- ◆ Notification to potential contaminate owners

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Source Water Protection

- ◆ Contingency planning for contamination events
- ◆ Coordination with land use decision makers and emergency responders

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Start with the Online Water System Capacity Assessment

- ◆ 18 questions to help water systems determine the managerial and financial health of their water system
- ◆ <http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/WaterSystemAssistance/CapacityDevelopment/CapacityAssessment.aspx>

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When to Plan

- ◆ Start now, its not too late
- ◆ Keep your planning document current to “keep it real”
- ◆ Review your document every year
- ◆ For WSP - schedule a pre-plan at least every 5 years
- ◆ WSP - update 6 years

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Pre-plan Meeting

- ◆ Review system needs and priorities
- ◆ Determine regulatory requirements and planning document type
- ◆ Education about new regulations
- ◆ Discuss the DOH review process

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Planning Assistance is Available

- ODW planning staff
- Evergreen Rural Water of Washington
- Rural Community Assistance Corporation

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DOH Drinking Water Planner Assignments

10/2013

SWRO

- 1 Corina Hayes (360) 236-3031
- 2 Mark Masuda (no counties assigned)

NWRO

- 3 Richard Rodriguez (253) 395-6771
- 4 Jennifer Kropack (253) 395-6769

ERO

- 5 Christine Collins (509) 229-2122
- 6 Brian Seyer (509) 229-2127
- 7 Heather Cannon (509) 229-2121

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ODW Regional Planners

SWRO

- Corina Hayes 360-236-3031

NWRO

- Jennifer Kropack 253-395-6769
- Richard Rodriguez 253-395-6771

ERO

- Heather Cannon 509-329-2121

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Questions?

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Drinking Water Source Protection Basics

Kitty Weisman
Source Water Protection Program Manager
Office of Drinking Water



HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER

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Mission

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What is Source Water Protection?

- ◆ Planning process that emphasizes protection of:
 - Wellhead
 - Surface water
 - Aquifer
 - Watershed
- ◆ Prevent loss of drinking water quality and quantity
- ◆ Focus on prevention because of cost and difficulty to replace source
- ◆ Includes emergency plan

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Regulations

- ◆ SDWA 1986 – Wellhead Protection Program
- ◆ SDWA 1996 amendments – Source Water Assessment Program (SWAP)
- ◆ State drinking water regulations require:
 - Mandatory wellhead and source water protection
 - Sanitary control
 - Watershed control

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WAC 246-290-135

- ◆ Requires sanitary control area protection
- ◆ Requires wellhead protection:
 - Susceptibility assessment
 - Delineation of wellhead protection area(s)
 - Potential contaminant inventory (every 2 years)
 - Notification to landowners and agencies
 - Emergency Response & Contingency Plan
- ◆ Requires watershed control program for surface water sources

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Benefits of Source Water Protection

Source protection is first line of defense in “multiple-barrier” protection approach

- Public health protection
- Prevent emergencies
- Economic benefits
- Environmental benefits
- Public confidence

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AWWA Source Protection Standard G300-07

Components of a Successful Source Water Protection Program

From AWWA Standard G300

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Source Water Protection Steps

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Forming Your Source Water Protection Team

People who are interested, dedicated, or with special skills

- ◆ Water systems within area
- ◆ Business representatives
- ◆ Federal, state, and local agencies
- ◆ Students
- ◆ Citizens
- ◆ Special interest groups

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ID Source Water Area

- ◆ Watershed delineation
 - U.S. Geological Survey – data
 - Dept. of Ecology – watershed planning groups
- ◆ Involve nearby water systems
 - Sentry database
 - Source Water Assessment Program

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Citizens Water Association Wellhead Protection Area 2005

Draft

Delineation includes time of travel zones:

- ◆ 6 months
- ◆ 1 year
- ◆ 5 years
- ◆ 10 years

Can use calculated fixed radius (easy) method or groundwater modelling

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Conduct Inventory of Potential Contamination Sources

- ◆ Field surveys
- ◆ Land use maps
- ◆ Source Water Database
 - Ask us for data for your area
 - If your plan is new, give us your data
 - Benefits include better emergency response and decision-making
- ◆ Other agencies

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Potential Sources of Contamination

- Industrial and commercial activities
- Animal feeding operations
- Agriculture
- Septic systems and cesspools
- Underground storage tanks
- Landfills and surface impoundments
- Nonpoint source pollution



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Plan Must Include Actions

Action is Critical for Protection!

- Sanitary control and watershed control
 - Land acquisition or easements
 - Restrictive covenants
- Public education
- Best management practices (BMPs)
- Regulations and ordinances
- Monitoring
- Water conservation
- Emergency preparedness and response plan

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Implement Plan

- Develop a schedule
- Assign responsible party for each action
- Carry out actions according to schedule
- Track progress
- Measure results
- Update plan every 5-7 years

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Sanitary Area and Watershed Control

- Refer to *Sanitary Control Area Protection* fact sheet for guidance (DOH 331-453)
- Expand this guidance to your highly-susceptible areas, as needed
- Use land acquisition, easements, and covenants, if possible
- Permits and ordinances, as needed

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Land Acquisition

Must have willing land owner(s)

- ◆ Local Land Trusts
- ◆ Trust for Public Land
- ◆ The Nature Conservancy
- ◆ Washington State Recreation and Conservation Office

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Tools for Land Acquisition and Protection

- ◆ Donations
- ◆ Sale
 - Market value
 - Bargain sale
- ◆ Conservation easements
- ◆ Other restrictions on land use



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Transfer of Development Rights

- ◆ Separating land rights into zones:
 - Some areas held for activities (farming and development)
 - Other areas more protected
- ◆ Rights can be:
 - Sold
 - Given away
 - Limited (intentionally or by regulation)
 - Transferred

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Public Education

- ◆ Informational meetings
- ◆ Advertisements, flyers, and posters
- ◆ Questionnaires
- ◆ Demonstration projects
- ◆ Community and school events
- ◆ Consumer Confidence Reports

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Best Management Practices

- ◆ Agricultural:
 - Grazing zones
 - Stream buffers
 - Integrated pest management (IPM)
- ◆ Industrial:
 - Analyze processes to identify opportunities for reducing chemicals and wastes
 - Improved waste storage and collection
 - Spill containment

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Land Use Controls

- ◆ Can control or prohibit activities where your source is most susceptible:
 - Sanitary Control Area
 - Six-month time of travel zone
 - Entire source water protection area
- ◆ Can use controls to prevent contamination from:
 - Residential development
 - Certain industries
 - Landfills
 - Other activities as needed

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Land Use Controls (cont.)

- ◆ Siting hazardous businesses away from source (Tumwater case study)
- ◆ Subdivision development requirements:
 - Green spaces (parks and forests)
 - Stormwater management
- ◆ Zoning

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Water Conservation

- ◆ Conserving water:
 - Ensures adequate future supply
 - May reduce flow rate of potential contaminants
- ◆ Develop water conservation plan with actions
- ◆ Use conservation rate structure
- ◆ Monitor static water levels
- ◆ Monitor source and service meters regularly

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Monitoring



- ◆ Assess source water quality
- ◆ Detect potential problems early
- ◆ Share information!
- ◆ Evaluate program effectiveness

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Regulations and Permits

- ◆ Critical areas ordinances (CAO):
 - Critical aquifer recharge areas (CARAs)
 - Steep slopes
 - Wetlands
- ◆ Use of permitting process to restrict or condition certain activities

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Emergency Plan

- ◆ Anything that threatens your source is a potential emergency
- ◆ Source water protection includes an emergency plan that:
 - Emphasizes prevention
 - Identifies main threats
 - Details response procedures
 - Determines replacement options (contingencies)
 - Great tools are available on our website www.doh.wa.gov/ehp/dw

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Help is Available

- ◆ Your Office of Drinking Water Regional Planner: 1-800-521-0323
- ◆ Evergreen Rural Water of Washington: 1-800-272-5981
 - Charlie Brown, Source Water Circuit Rider
 - Dave Tysz, Source Water Circuit Rider
- ◆ Rural Community Assistance Corporation
Jim Wilson: jwilson@rcac.org or 509-927-6748

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For More Information

- ◆ **Kitty Weisman**
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Questions?



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