

Model Ordinance: Protecting Surface Water Sources of Drinking Water

Background

Protection of Oregon's drinking water resources is critical to supply a growing population and to support the state's continued economic health. Safe drinking water is fundamental to the viability of any community, and the cost of treating contaminated water is extremely high. Source water protection beyond what is required by the federal Clean Water Act is primarily a voluntary program which relies on local governments to take steps to care for their drinking water resource. Protecting drinking water involves reducing the risk of contamination of the groundwater, rivers, streams and lakes that serve as sources of drinking water for local communities.

This document provides model ordinance language that jurisdictions can use to protect drinking water obtained from surface water sources. Developing a drinking water protection ordinance is one of many tools communities can voluntarily use to safeguard community health and reduce the risk of contamination of water supplies. Communities are encouraged to examine all potential management options (such as education, outreach, incentives, technical assistance and land acquisition) and tailor a protection strategy to meet their specific needs.

Why use an ordinance or overlay zone?

A jurisdiction might determine that an ordinance is necessary to protect public health if 1) current regulations do not protect the drinking water supply to the level the community desires, 2) other potential management options are not as effective for the potential risks being addressed, or 3) to limit higher-risk activities in developed areas with a strong hydrologic connection to the drinking water source.

A local ordinance has the potential for reducing risk to drinking water from both new and existing sources of contaminants. However, the mechanisms for review, inspection and enforcement associated with new development are different from those for existing development. A local drinking water protection ordinance typically defines the management area using a map and applies an overlay zone in which high-risk activities are restricted to protect the resource. The Oregon Health Authority and

Oregon Department of Environmental Quality have prepared source water assessment reports (available at <http://www.deq.state.or.us/wq/dwp/dwp.htm>) for all public water supplies serving at least 25 individuals or 15 service connections for at least 60 days each year. These reports are a valuable reference for establishing appropriate boundaries for a drinking water protection ordinance. These assessments include maps of the drinking water watersheds and highly sensitive areas within those watersheds, plus an inventory of potential sources of contamination.

The model ordinance provides standards for various development and other activities with the intent of leveraging the natural protective functions of the watershed and moderating higher-risk human activity. Risk of drinking water contamination will be reduced by:

- Preserving bank stability function and the filtering function provided by a healthy vegetated streamside area
- Prohibition of known high-risk land uses (such as landfills or certain industrial facilities)
- Setting standards for the use, handling and storage of toxic substances
- Requiring erosion control and stormwater management practices to prevent the flow of sediment and contaminated runoff from affecting the drinking water source.

Using the model ordinance

The model ordinance language in the following pages serves as a guide for jurisdictions to develop a drinking water protection ordinance and overlay zone. Jurisdictions may alter the language as needed. Within this ordinance language, material to be customized by local jurisdictions is included in [brackets]. Brackets also show where a decision needs to be made. When the word [jurisdiction] is in brackets, the name of the city or county or the word "city" or "county" should be inserted.

For an electronic version of the model ordinance to modify for your community, please contact Julie Harvey, Portland, at 503-229-5664, call toll-free in Oregon at 1-800-452-4011, ext. 5664, or e-mail harvey.julie@deq.state.or.us.



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Drinking Water Protection Overlay District Model Code (for surface water sources)

Section 1.0 - General

The regulations that apply to this Drinking Water Protection (DWP) Overlay District are in addition to those of the underlying zoning districts and other [jurisdiction] regulations. Where the regulations and permitted uses of an underlying district conflict with those of an overlay district, the more restrictive standards shall apply.

Section 2.0 - Purpose

The [jurisdiction] recognizes: (a) that residents of [jurisdiction] rely on [name surface water drinking water source] for a safe drinking water supply, and (b) that certain land uses or activities in [jurisdiction] can contaminate surface water. The purpose of the Drinking Water Protection (DWP) Overlay District is to protect public health and safety by minimizing contamination risks to surface waters that supply [jurisdiction] with drinking water. This ordinance establishes standards for the use and storage of hazardous materials and other contaminant sources that pose a risk to drinking water and management of riparian areas and stormwater within the DWP Overlay District.

Section 3.0 - Definitions

DEVELOPMENT. The carrying out of any construction, reconstruction, alteration of surface or structure or change of land use or intensity of use that requires a permit.

HAZARDOUS MATERIALS. Substances defined as such in any of the following:

- (a) Hazardous waste as defined in ORS 466.005(7).
- (b) Toxic substances as defined in ORS 465.003(9)
- (c) Any substance defined as a hazardous substance pursuant to Comprehensive section 101(14) of the federal Comprehensive Environmental Response, Compensation and Liability Act, P.L. 96-510, as amended, and P.L. 99-499.
- (d) Oil as defined in ORS 465.200(19); and
- (e) Any substance designated by the Environmental Quality Commission under ORS 465.400.

INERT. Containing only constituents that are biologically and chemically inactive and that, when exposed to biodegradation and/or leaching, will not adversely impact the waters of the state or public health.

PRIMARY CONTAINMENT. A tank, pit, container, pipe or vessel of first containment of liquid or chemical.

RELEASE. Any unplanned or improper discharge, leak, or spill of a potential contaminant including a hazardous material.

SECONDARY CONTAINMENT. A second tank, catchment pit, pipe, or vessel that limits and contains liquid or chemical leaking or leaching from a primary containment area; monitoring and recovery are required.

Section 4.0 - Drinking Water Protection (DWP) Overlay District and Critical Areas

The Drinking Water Protection Overlay District is *identified in the* [Name document, possibly OHA and DEQ's *Source Water Assessment*] and shown on [Name Map]. Drinking Water Protection Critical Areas within the district are generally defined as those areas within [200] feet of [Name source water] and its tributaries, and [areas of high soil erosion potential, high permeability, and high runoff soils identified in the Source Water Assessment].

[NOTE: The boundaries of the DWP Overlay District should be adequate to ensure that pollutants of concern are removed from runoff before entering the drinking water source. This model code presents a tiered approach to the overlay with more stringent requirements within critical areas. DWP Critical area widths vary from twenty feet to up to 200 feet in ordinances throughout the United States. Since this ordinance is for streams, rivers and reservoirs that supply public drinking water, the larger width of 200 feet would be most appropriate. Local officials may consider using a watershed approach for areas within their jurisdiction to ensure that all surface water/groundwater/recharge areas for the water supply are protected.]

Section 5.0 – Applicability

- A. The procedures and requirements of the DWP Overlay District:
1. Apply in addition to the standards of the property's underlying zone;
 2. Supersede the property's underlying zone where the underlying zone does not provide the level of resource protection afforded by the DWP Overlay Zone.
- B. In determining the location of a property within the DWP Overlay District, the following criteria shall apply:
1. That portion of a tax lot that lies within a DWP Overlay District shall be governed by the restriction applicable to that Zone; and
 2. Tax lots with a portion of the tax lot in the DWP Critical Area shall be governed by the standards of the more restrictive DWP Critical Area. The [City/County Planning Director] may waive the requirement that the more restrictive standards apply when all of the following apply:
 - a) Storage, use, handling, treatment, production, and/or transportation of hazardous materials will not take place within the portion of the tax lot having the more restrictive DWP Overlay District standards;
 - b) Storage, use, handling, treatment, production, and/or transportation of hazardous materials will not take place within 50 feet of the portion of the tax lot having more restrictive DWP Overlay District standards; and
 - c) The tax lot is 20,000 square feet or larger.
- C. Activities Subject to Review. Activities subject to the review shall include all development and permitted use or storage of hazardous materials on properties within the DWP Overlay District that are not specifically exempted from review as outlined in Section 5(D) including:
1. New development and all activities requiring development approval;
 2. Applications for a change of occupancy or tenancy that result in a change of use to a use that will store or use 20 or more gallons of non-exempt hazardous materials;
 3. Expansion of a non-conforming use, to the extent allowed by the underlying zone, is permitted only under the terms of a special exception and must conform to Section 6(B). Non-conforming uses are existing uses within the DWP Critical Area that are otherwise prohibited by Section 6(A).
- D. Exemptions. This ordinance does not exempt any material or use from requirements under the Uniform Fire Code. Except as otherwise provided by this ordinance, the following activities and/or materials are exempt from this regulation:
1. Use, storage, and handling of specific hazardous materials that do not present a risk to the surface water drinking water source, as determined and listed by the [City/County Planning Director] in consultation with [public water supplier]. These materials may still need to be included on the Hazardous Material Inventory Statement as required by Fire Code. A Hazardous Material Exemption Request may be submitted to the [City/County Planning Director] for hazardous materials that can be demonstrated to pose no threat to the public surface water source. These materials may be exempt from this regulation and added to the list of materials that do not pose a threat to the drinking water source. The demonstration of no threat is the responsibility of the applicant seeking the exemption and will be subject to review by [jurisdiction]; [*Note: jurisdiction can make this determination in consultation with a technical expert such as a consultant or OHA*]
 2. Hazardous materials offered for sale in their original containers of five (5) gallons or less; A Hazardous Material Exemption Request for original containers of greater than 5-gallons in size may be submitted to the [City/County Planning Director]. These materials may be exempt from this regulation if an applicant can demonstrate that a larger size container does not pose a threat to the drinking water source. The demonstration of no threat is the responsibility of the applicant seeking the exemption and will be subject to review by technical experts;
 3. Hazardous materials in fuel tanks and fluid reservoirs attached to a private or commercial motor vehicle and used directly in the motoring operation of that vehicle;
 4. Hazardous materials in fuel tanks and fluid reservoirs attached to machinery, including but not limited to fuel, engine oil and coolant;
 5. Fuel oil used in existing heating systems;
 6. Emergency use, storage and handling of hazardous materials by governmental organizations or non-governmental disaster relief organizations in the public interest;

7. Hazardous materials used and stored specifically for water treatment processes of the public water system and private systems for the same purpose when approved by the [City/County Planning Director];
 8. Hazardous materials contained in properly operating sealed units (transformers, refrigeration units, etc.) that are not opened as part of routine use;
 9. Natural gas distribution lines;
 10. Any commonly used office supply, such as toner or cleaning supplies, where supplies are purchased off-site for use onsite;
 11. Hazardous materials not already listed in this section used in association with Farm Practices as defined in ORS 30.930 in an Exclusive Farm Use Zone and Confined Animal Feeding Operations (CAFOs) as defined OAR 603-074-0010;
 12. Pesticide use and storage specifically addressed by state preemption of local pesticide regulation under OAR 634.055 through 634.065;
 13. Hazardous material use in association with Forest activities conducted under the Forest Practices Act; and
 14. Aggregate quantities equal to or less than 20 gallons of non-exempt hazardous materials
- E. Agency Review. Decisions made by the [Jurisdiction] under this ordinance do not supersede the authority of the state or federal agencies which may regulate or have an interest in the activity in question. It is the responsibility of the landowner to ensure that any other necessary state or federal permits or clearances are obtained.

6.0 – General Requirements

- A. Prohibited Uses. The following uses shall be prohibited within the DWP Critical Areas:
1. Storage, use, or production of hazardous materials, except as provided in Section 5(D);
 2. Fueling facilities and automobile service stations, except as provided in Section 5(D);
 3. Disposal of hazardous materials or solid wastes, except for inert substances such as rock, dirt and concrete as allowed by [reference local provisions and DEQ rule].
 4. Treatment of hazardous material, except remediation programs authorized by a government agency to treat hazardous material present at a site prior to the adoption of this ordinance;
 5. Disposal of septage or septic sludge;
 6. Automobile wrecking yards or activities, commercial or otherwise, that result in the accumulation of [4] or more non-operating vehicles; and
 7. Outside storage of [8] or more nonfunctioning appliances;
- [Note: Consider other uses that might impact your surface water drinking water supply and list them here. Provide clear and objective definitions or otherwise provide standards for activities that are allowable if best management practices (BMPs) are used. Refer to your Source Water Assessment for information on types and location of potential sources of contamination. Consider whether to prohibit uses from the entire DWP Overlay District or just the DWP Critical Areas based on local conditions and risk.]*
- B. Performance Standards. Commercial activities occurring wholly or partly in the DWP Overlay District that involve the storage or use of more than 20 gallons of non-exempt hazardous materials including businesses located in the DWP Critical area that have received special exemption for non-conforming use as provided for in Section 5(C) shall be allowed upon compliance with the following conditions:
1. Storage, handling, treatment, use, production or otherwise keeping on premises hazardous materials shall be in compliance with containment and safety standards set by the most recent Fire Code adopted by [jurisdiction];
 2. All hazardous materials that pose a risk to surface water shall be stored in areas with approved secondary containment in place (Uniform Fire Code Articles 2 and 8003.1.3.3);
 3. Requirements found in Uniform Fire Code Appendix II-E 3.2.6 for a monitoring program and in Article 8003.1.3.3 for monitoring methods to detect hazardous materials in the secondary containment system shall be met for all amounts of non-exempt hazardous materials-that pose a risk to surface water;
 4. Requirements found in Uniform Fire Code Appendix II-E Section 3.2.7 for monthly in-house inspection and maintenance of containment and emergency equipment for all amounts of non-exempt hazardous materials that pose a risk to surface water shall be met; and
 5. A Safe Drinking Water Plan (SDWP) shall be prepared by the applicant in accordance with Section 7.0 and a copy submitted to [Name of Authority (local government authority or water

utility)]. This plan must be updated annually and kept on the premises. SDWP approval in accordance with Section 7(C) shall be obtained before any change of use, construction, storage or development begins.

[*Note: The jurisdiction shall verify that the above referenced appendices of the Uniform Fire Code have been adopted by the jurisdiction.*]

Section 7.0 - Safe Drinking Water Plans

A. Safe Drinking Water Plan Submittal Requirements:

1. For new development and all activities requiring development approval, a Safe Drinking Water Plan shall accompany any new application involving the storage or use of non-exempt hazardous materials.
2. Existing businesses that are required to have a SDWP by Section 6(B) of this ordinance shall submit a copy of the SDWP within [12 months] of the effective date of this ordinance.
3. New or expanding businesses that that are required to have a SDWP by Section 6(B) of this ordinance and will occupy existing structures or for other reasons will not require review by the planning or building department shall prepare or update their SDWP and submit it to [Name authority] prior to beginning or expanding operations. For the purpose of this ordinance, expansion is defined as a greater than [10%] increase in the use, storage or production of hazardous materials, since the previous SDWP was submitted. [*Note: Without periodic inspection or reporting requirements jurisdictions need to rely on business owners to initiate reporting for this provision. Outreach and education may be needed to inform business of their responsibility.*]

B. The Safe Drinking Water Plan shall contain the following information:

1. Hazardous Material Inventory Statement and, upon request from the [City/County Planning Director], a Material Safety Data Sheet for any hazardous materials to be used, stored or produced on site that are not exempt by Section 5(D) of this ordinance. Hazardous material weights shall be converted to volume measurement for purposes of determining amounts-10 pounds shall be considered equal to 1 gallon in conformance with Uniform Fire Code 80001.15.1;
2. A detailed description of the activities conducted at the facility that involve the storage, handling, treatment, use or production of non-exempt hazardous materials;
3. A description of the primary and secondary containment devices proposed and an explanation of whether such containment devices will drain to sanitary or storm sewer;
4. A proposed Hazardous Material Management Plan for the facility that describes procedures to be followed to prevent, control, collect and dispose of any accidental release of hazardous material including a list of available equipment;
5. Spill reporting procedures, including a list of affected agencies to be contacted in the event of a spill
6. A description of procedures for inspection and maintenance of containment devices and emergency equipment; and
7. A description of procedures for disposition of unused hazardous materials or hazardous material waste products including the type of transport and proposed route.

C. Safe Drinking Water Plan Review and Approval

The Safe Drinking Water Plan shall be reviewed under Type II procedures [reference appropriate section of jurisdictions code or see Oregon Department of Land Conservation and Development's *Model Development Code & User's Guide for Small Cities, 2nd Edition, 2005 for examples*].

[*Note: Type II decisions are typically made by the City/County Planning Director or someone he or she officially designates with consultation from appropriate officials such as building, fire, or public water system entity. The jurisdiction may choose to coordinate with the local water utility and direct plan submittals under Section 6(B) and SDWPs to the water utility for review.*]

Section 8.0 - On-Site System Inspection and Maintenance

Reserved [For drinking water sources that are at risk for elevated nutrient or bacteria levels the implementation of a periodic inspection and maintenance requirement for owners of individual onsite septic system should be considered to ensure proper functioning of the system. In 2010, an external advisory committee convened by DEQ suggested changes to the state rules governing onsite systems including recommendations for time-of-property-transfer inspections, periodic maintenance and reporting requirements, and increased enforcement for violations. DEQ is implementing portions of these

recommendations as resources allow. Contact DEQ's onsite program for updated rule-making information and DEQ's drinking water protection program for technical assistance if the local jurisdiction is interested in adopting language that is more restrictive than the state rules].

Section 9.0 - New Development in DWP Critical Areas

- A. Onsite septic systems and drain fields shall not be located within the DWP Critical Area. *[Consider including this provision for drinking water sources that are at risk for elevated nutrient or bacteria levels. Be aware that the DEQ agents in the onsite program generally evaluate and approve the proposed location of onsite septic systems in accordance with a statewide rulebook well before the permit application to actually construct the system would be received by your jurisdiction. The statewide rulebook and DEQ rules (OAR Chapter 340, Division 071) typically require a minimum separation distance of 50 to 100 feet between septic system components and surface waters. If the DWP Critical Area is more restrictive than this setback, on-going coordination with DEQ and/or the DEQ agent for the local onsite program will be required to ensure that the more restrictive siting requirements are met. In addition, restricting onsite septic system construction may render lots within your jurisdiction unbuildable; well-defined criteria for exceptions from this requirement due to hardship (see Section C below) are highly recommended.]*
- B. New development and redevelopment in DWP Critical Areas shall exclude all vegetation removal and the placement of structures and impervious surfaces within the DWP Critical Area except for the following uses, provided alteration and disturbance is kept to a minimum and native vegetation is used to replant disturbed areas after construction:
1. Development that is appurtenant to the production, supply, distribution or storage of water by a public water supplier;
 2. Public roads, main-line utilities and trails;
 3. Private roads and driveways necessary to access buildable portions of a parcel;
 4. Stormwater management structures sited within the context of a [city/county] approved stormwater management program;
 5. Construction, clearing or other activities on [city/county] owned property if the encroachment is authorized in writing by [jurisdiction];
 6. Construction, clearing, or other activities on [public water utility] owned land if the encroachment is authorized in writing by the [Public Water Utility board]. [Note: use if water district or other non-municipal entity operates the water supply]; and
 7. Trash containers and dumpsters that are under a roof or are located so that leachate from the receptacle cannot escape unfiltered and untreated.
- C. For any existing lot or parcel demonstrated to have been rendered not buildable by application of these requirements, the property owner may apply for a hardship variance to waive land development restrictions and prohibitions found in subsections A and B. A decision regarding hardship variances will follow the procedures and standards outlined in Section 12 of this ordinance. *[Note: A jurisdiction may want to consider addressing hardship situations through exception criteria rather than a variance, especially in jurisdictions where the cost for processing a variance is high. Exception criteria would need to be clear and objective, such as defining a minimum building envelope or exception by date the lot was created.]*

Section 10.0 - Construction and Post Construction Stormwater Review Requirements for New and Redevelopment in the DWP Overlay District

Reserved. [It is recommended that local jurisdictions adopt erosion and sediment control requirements and post construction stormwater management requirements to protect stormwater infrastructure, water quality and aquatic habitat. Such requirements will also serve to protect drinking water. Model code for these requirements can be found in the Water Quality Model Code and Guidebook (available at <http://www.oregon.gov/LCD/waterqualitygb.shtml>). If a jurisdiction wants to link stormwater management directly with drinking water protection, Section 10 provides place holder for this option. Treatment standards for stormwater that serve to protect drinking water should address toxics such as synthetic organic compounds (i.e. pesticides, solvents and household and industrial chemicals); petroleum hydrocarbons (i.e. oil and grease, "BTEX" compounds: benzene, toluene, ethyl benzene, and xylene; and polynuclear aromatic hydrocarbons (PAHs)); and metals.]

Section 11.0 – Conditions of Approval

The [City/County Planning Director] may attach conditions of approval that will minimize negative impacts of regulated activities on drinking water and ensure that the facility or the proposed development can fully meet the standards specified in Section 10. These conditions may include stormwater monitoring, special stormwater treatment facilities, signage, or other conditions to address risks associated with the proposed development.

Section 12.0 – Appeals

The only portions of this ordinance that are subject to appeal are Section 7(C) Approval of Safe Drinking Water Plan, Section 5(D)(1) Hazardous Materials Exemptions Request, Section 11 Conditions of Approval, and *[consider adding other sections if modified from model code.]* The appeal of a decision of the [City/County Planning Director] may be appealed to the [Planning Commission] under [Type III or amend procedure type as appropriate] as specified in [reference appropriate section of code].

Section 13.0 - City/County Liability

Warning and Disclaimer of Liability. The degree of drinking water protection in the DWP Overlay District required by this Article is based on scientific and engineering considerations that inherently carry associated uncertainties. Any conclusions based on the exact boundaries of the DWP Overlay Zone and DWP Critical Areas shall, therefore, be considered estimates. Under no conditions should this Article be construed to guarantee the purity of the surface water or guarantee the prevention of contamination. Therefore, this Article shall not create liability on the part of the [jurisdiction], or any [jurisdiction] personnel, for any contamination that may result from reliance on this Article or any administrative decision made under this Article.

Section 14.0 - Enforcement

[Reference to appropriate section of the Development Code.]

Section 15.0 - Saving Clause

Should any section or provision of this ordinance be declared invalid, such decision shall not affect the validity of the ordinance as a whole or any other part thereof.

For more information

Contact Julie Harvey, DEQ Drinking Water Protection Program, Portland, 503-229-5664, toll-free in Oregon at 1-800-452-4011, ext. 5664, or e-mail harvey.julie@deq.state.or.us

To obtain a local or regional map or copy of an individual source water assessment report, or to arrange a presentation on drinking water protection, contact **Julie Harvey**, Drinking Water Protection Specialist, DEQ, Portland, **503-229-5664**. For information on land use planning for drinking water protection, contact **Amanda Punton**, Oregon Department of Land Conservation and Development, **971-673-0961**.

Oregon OHA – Drinking Water Program

<http://www.healthoregon.org/dwp>

Oregon DEQ

<http://www.deq.state.or.us/wq/dwp/dwp.htm>

Oregon Department of Land Conservation and Development

Water Quality Model Code and Guidebook

<http://www.oregon.gov/LCD/waterqualitygb.shtml>

U.S. Environmental Protection Agency

EPA's Office of Ground Water and Drinking Water <http://www.epa.gov/safewater/>

Alternative formats

Alternative formats (Braille, large type) of this document can be made available. Contact DEQ's Office of Communications and Outreach, Portland, at 503-229-5696, or call toll-free in Oregon at 1-800-452-4011, ext. 5696. Hearing-impaired persons may call 711.