

2. Water Quality Regulation

2.1 Introduction

Water quality in Oregon is regulated through a number of federal and state laws and policies. These laws and policies are meant to protect water quality both for humans and for plant and wildlife. On the federal level, the Environmental Protection Agency is responsible for overseeing the enforcement of the federal Clean Water Act and the Safe Drinking Water Act, two of the most important clean water laws in the country. Other federal agencies also have impacts on how water quality is regulated in Oregon including the National Marine Fisheries Service (NMFS), and U.S. Fish and Wildlife Service (USF&WS). At the state level, the Department of Environmental Quality (DEQ) implements and enforces provisions of the federal Clean Water Act, the Safe Drinking Water Act and state water quality laws and policies. The Oregon Department of Fish and Wildlife (ODF&W) is involved in protecting aquatic habitat and enforcing state laws and policies relating to fish and wildlife.

The implementation of state and federal programs results in continually evolving challenges at the local level, as agencies complete new analyses and gain a further understanding of the factors which lead to impaired water quality. A local government will need to keep current with regulations, and should develop water quality management plans that anticipate more stringent oversight.

The water quality programs and regulations reviewed below are the ones that most directly impact local government decisions, particularly regarding land use planning and development review. To avoid repetitive efforts, all of these programs and regulations must be considered when updating comprehensive plan and development code language. Many laws provide flexibility for compliance. Therefore, it is important to consult directly with the appropriate regulatory agencies (see listed contacts) when preparing new development the specific requirements for your jurisdiction.

Some programs that might be familiar to local jurisdictions, such as the Oregon Plan for Salmon and Watersheds, the Oregon Coastal Nonpoint Control Program and Army Corps of Engineers and Department of State Lands wetland fill and removal laws, are not included in this review. These programs are implemented at the state and federal level, and do not directly impact the local development permit process at the writing of this guidebook.

2.2 The Clean Water Act and Oregon's 303(d) List

The federal Clean Water Act requires states to undertake specific activities to protect the quality of their rivers, streams, lakes and estuaries. In Oregon, the Department of Environmental Quality (DEQ) has the responsibility for developing standards that protect beneficial uses such as drinking water, cold water fisheries, aesthetics, recreation, agriculture and other uses. The state must monitor water quality and review available data and information to determine if the standards are being met. DEQ's standards include parameters such as bacteria, pH, turbidity, dissolved oxygen, temperature, total dissolved

gas, certain toxic and carcinogenic compounds, habitat and flow modification, and aquatic weeds or algae that affect aquatic life.

Section 303(d) of the Clean Water Act requires each state to develop a list of water bodies that do not meet standards, and to submit an updated list to the Environmental Protection Agency (EPA) every two years. The list provides a way for Oregonians to identify problems and to develop and implement watershed recovery plans that achieve federal and state water quality standards and protect beneficial uses. There are over 1,100 streams and rivers on the state's 1998 303(d) list. Most cities, and all counties, lie within the watershed of a 303(d) listed stream, and development activity and stormwater discharge in these watersheds can directly influence the water quality of a listed stream.

When a water body is placed on the list the Clean Water Act requires the state to develop a plan to reduce the offending pollutants. The DEQ works with the local jurisdiction and other agencies and organizations, such as agriculture and forest products managers, to develop a management plan that covers a wide range of impacts from rural farm and forest activities to urban activities. A primary component of the management plan is the calculation of the total maximum daily loads (TMDLs) for each of the pollutants in the water body. TMDLs describe the amount of each pollutant a waterway can carry and still comply with water quality standards. The DEQ and the local partners then work together to determine how to reduce pollutants to meet the TMDL limits. DEQ will work with local jurisdictions so that the necessary steps, including changes to development code language, are taken to protect and enhance water quality.

Not all water bodies will have TMDLs developed at once, but the DEQ is committed to developing TMDLs for every stream on the 1998 303(d) list by the year 2007. While the list is normally updated by the DEQ every two years, the EPA has excused Oregon from compiling a 2000 update to the list. To determine the status of TMDL development or which water bodies are on the list, contact your regional DEQ office or the DEQ web page.

A complete listing of water bodies included on Oregon's 303(d) list can be found at:

<http://waterquality.deq.state.or.us>

Or call your regional DEQ office or DEQ headquarters

Headquarters: (503) 229-5696

Northwest Region: (503) 229-5263

Western Region: (541) 686-7838

Eastern Region: (541) 388-6146

2.3 National Pollutant Discharge Elimination System (NPDES)

The National Pollutant Discharge Elimination System (NPDES) program was authorized by the Clean Water Act (CWA) of 1972, and is the fundamental regulatory mechanism of the CWA. The NPDES program requires anyone discharging a pollutant from a point source into the waters of the nation to obtain an NPDES permit. In 1987, amendments to the CWA also required the EPA to address discharges from a municipality's separate storm sewer systems (MS4), which originate as urban stormwater runoff; this has been upheld by the court system.

Accordingly, the EPA has initiated the MS4 permitting program because national stormwater monitoring data have demonstrated that urban stormwater is a leading cause of water quality degradation in the United States. EPA's urban stormwater program implementation is designed to be phased over several years. In 1990, the Phase I rules, required by the 1987 CWA amendments, were issued by EPA and addressed stormwater discharges from medium and large MS4s (cities with a population of 100,000 and over). The Phase I rules also regulate stormwater discharges associated with certain commercial and industrial activity, and construction activity resulting in the disturbance of five acres or more of land. The permits required by the Phase I rules focus on the implementation of *best management practices* (BMPs) to improve the water quality of stormwater discharges.

On October 29, 1999, the Phase II final rule was signed by the EPA administrator. The Phase II rules require that by March, 2003, the DEQ shall regulate, at a minimum, small MS4s (those MS4s not covered by Phase I rules) serving municipalities within an urbanized area as defined by the Census Bureau. Currently this includes areas comprised of one or more central places, and the adjacent densely settled surrounding area (urban fringe) that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile, as determined by 1990 census data. The list of Phase II jurisdictions will be updated when the 2000 census data is compiled.

In addition, the state is required to determine a set of criteria and evaluate all jurisdictions with populations between 50,000 and 10,000 and a density of 1,000 people per square mile or greater for inclusion in the Phase II program. The criteria for including these smaller jurisdictions may be based on whether or not water quality standards are being met in the basin. The DEQ may also be required to evaluate jurisdictions with under 10,000 population as a result of a citizen petition. The evaluation would be based on the same criteria as those set for evaluation of jurisdictions between 50,000 and 10,000 and could result in regulation. The Phase II rules also lower the statewide threshold for erosion control of construction sites from five acres to one acre.

The Phase II rules require the operators of regulated small MS4s in an urbanized area to implement "minimum control measures." The minimum control measures include:

- public education and outreach on stormwater impacts;
- public involvement and participation;
- detection and elimination of illicit discharge;
- construction site stormwater runoff control;

- post-construction stormwater management in new development and redevelopment; and
- pollution prevention and good housekeeping for municipal operations.

In terms of land use and development requirements, the Phase II rules specifically call for ordinances to detect and eliminate illicit discharges, manage construction site runoff on sites of one acre and greater, and regulate post-construction stormwater runoff from new development and redevelopment. The rules provide guidance on structural and non-structural BMPs, many of which can be found in this Guidebook, that can be used to regulate post-construction runoff (see the BMP Table in Chapter 4). In addition, the Phase II rules call out the need for site plan review which considers potential water quality impacts.

For more information on the NPDES Phase II Rules see the EPA web site:

<http://www.epa.gov/owm/sw/phase2/>

or contact your regional DEQ office or DEQ headquarters

Headquarters: (503) 229-5696

Northwest Region: (503) 229-5263

Western Region: (541) 686-7838

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2.4 Safe Drinking Water Act of 1986 (SDWA)

The 1986 federal Safe Drinking Water Act (SDWA) addresses nonpoint (and point) sources of pollution through a provision requiring states and local water agencies to establish wellhead protection zones to safeguard groundwater drinking water systems. In 1996, amendments to the SDWA extended the act to cover surface water sources of drinking water as well as groundwater sources. The 1996 amendments require the Oregon Health Division (OHD) and the DEQ to conduct “source water assessments” for every public water system in Oregon regulated under the SDWA. A source water assessment is one step in completing a Drinking Water Protection Plan.

In Oregon, the SDWA is administered by the OHD and the DEQ. The OHD regulates the quality of the approximately 3,450 public water systems in Oregon and can require local jurisdictions to find new drinking water sources when contamination standards are exceeded. Because finding a new source of drinking water or treating contaminated water is expensive, it is better to protect existing drinking water sources. The DEQ is the lead agency in assisting local jurisdictions to protect their drinking water sources through the creation of a voluntary Drinking Water Protection Plan.

The process for developing a complete Drinking Water Protection Plan is as follows:

ASSESSMENT PHASE (funded by the SDWA and performed by the DEQ and the OHD)

1. Delineate the area that serves as the source of the public water supply (“drinking water protection area” for groundwater wells or surface water intakes)
2. Inventory the potential risks or sources of contamination

3. Determine the areas most susceptible to contamination
PROTECTION PHASE (voluntarily performed by local communities)
4. Assemble a local Drinking Water Protection Team
5. Develop a plan to protect the supply (reduce the risks of contamination)
6. Develop a contingency plan to address the potential loss of the system
7. Certify (optional) and implement the “Drinking Water Protection Plan”

The first three steps in this process have been funded through the SDWA for approximately 2700 public water systems in Oregon. The assessments must be completed on all of the public water systems by January 2003.

The public water system will receive a copy of a “Source Water Assessment Plan” (SWAP) report that contains pertinent hydrogeological and/or hydrological information, and details the assumptions and methods pertaining to their individual assessment. The drinking water SWAP will provide communities with an important planning tool. The assessment provides a basis for making more informed decisions regarding the geographic area (i.e., watershed) serving as the source of the community’s drinking water. Water quality improvement programs and projects can be focused within the drinking water source areas.

The DEQ is committed to linking drinking water protection efforts to other habitat and water quality improvement efforts for threatened and endangered fish in Oregon, as well as the ongoing work to address water bodies on the 303(d) list. One of the primary means of providing technical assistance is to give the community the information and coordination necessary to create these links. The DEQ and other agencies will also be involved in providing technical assistance to communities that choose to act on the assessments and voluntarily develop a Drinking Water Protection Plan (DWPP).

For more information on creating a voluntary Drinking Water Protection Plan contact DEQ’s Drinking Water Protection Coordinator at (503) 229-5279 or <http://waterquality.deq.state.or.us/wq/swap/swapcover.htm>

2.5 Underground Injection Control Program

DEQ administers the Underground Injection Control (UIC) Program in Oregon, as mandated by the federal Safe Drinking Water Act. The UIC Program manages injection of fluids into the ground in order to protect groundwater for beneficial uses such as drinking water. An owner or operator must be authorized to use an injection system either by registering the system and meeting general regulatory requirements or by obtaining a permit.

Underground injection systems distribute or inject fluids such as waste water or storm water below the ground’s surface. Some stormwater infiltration devices may fall under the jurisdiction of the UIC program. Some types of injection systems, such as those injecting hazardous waste are prohibited. Others that are relatively low risk, such as those receiving uncontaminated stormwater, must be registered and meet a performance standard of not adversely impacting groundwater quality.

DEQ expects to adopt new rules on underground injection systems by January 2001. Local jurisdictions should be aware of the UIC regulations when adopting design standards for stormwater infiltration systems. Stormwater dispersed on the ground's surface would not fall under the UIC provisions. Stormwater dispersed underground such as into a french drain or dry-well is considered a underground injection system and must be registered with the UIC program and meet certain siting requirements.

For more information on the Underground Injection Control Program contact
DEQ's UIC Program Coordinator at (503) 229-5954 or
<http://waterquality.deq.state.or.us/wq/groundwa/uichome.htm>

2.6 Endangered Species Act (ESA)

The decline of salmon within the Pacific Northwest has caused the National Marine Fisheries Service (NMFS) to list 26 salmon and steelhead evolutionary significant units (ESUs) in Oregon, Washington, California and Idaho as *threatened* or *endangered* under the ESA. Some jurisdictions also may be affected by ESA listings for resident fish, which remain in freshwater lakes or streams for their entire lives such as bull trout and cutthroat trout. The US Fish and Wildlife Service (USFWS) has authority to manage the recovery of these species.

The ESA prohibits "take" of a member of any species listed as *endangered*, and allows the USFWS or NMFS to impose the same prohibitions for any species listed as *threatened*. The term "take" is defined in the ESA as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." *Take* has been defined to include the intentional or negligent act of habitat modification that significantly impairs essential behavioral patterns such as breeding, spawning, rearing, migrating, feeding, or sheltering, and which results in death or injury of a protected species.

Loss or degradation of habitat resulting from land development can be considered a *take*, and the jurisdiction that permitted or allowed the offending development can be held liable for that *take*. The ESA provides for third-party lawsuits, so private citizens alleging that *take* has occurred because of land development can sue the permitting jurisdiction.

There is a lot of uncertainty about the exact effect of the salmon and steelhead listings on land development activities. Loss or degradation of habitat caused by development can be considered a *take*, and the jurisdiction that permitted or allowed the offending development can be held liable for that *take*. Section 4(d) of the ESA requires that NMFS list the activities that could result in a *take*. NMFS has also described certain precautions that, if followed, would preclude prosecution for *take* even if a listed species were harmed inadvertently. Such a provision is called a *limit on the take prohibition*. The intent is to provide local governments and other entities greater certainty regarding their liability for *take*.

NMFS published their rule in response to Section 4(d) in July of 2000 (see 65 FR 42421, July 10, 2000). The NMFS 4(d) rule lists 12 criteria that will be used to determine whether a local program incorporates sufficient precautionary measures to adequately conserve

fish. The rule provides for local jurisdictions to submit development ordinances for review by NMFS under one, several or all of the criteria. The criteria for the Municipal, Residential, Commercial and Industrial Development and Redevelopment (MRCI) *limit* are listed below:

- Avoid inappropriate areas such as unstable slopes, wetlands and areas of high habitat value
- Prevent stormwater discharge impacts on water quality
- Protect riparian areas
- Avoid stream crossings – whether by roads, utilities, or other linear development
- Protect historic stream meander patterns
- Protect wetlands, wetland buffers, and wetland function
- Preserve ability of permanent and intermittent streams to pass peak flows (hydrologic capacity)
- Stress landscaping with native vegetation
- Prevent erosion and sediment run-off during and after construction
- Ensure water supply demand can be met without affecting salmon need
- Provide mechanisms for monitoring, enforcing, funding and implementing
- Comply with all other state and federal environmental laws and permits

The Water Quality and Model Code includes code language to address most of these criteria, the exception being the criteria addressing water supply, which is a public facilities issue. A guidebook for responding to ESA issues has also been developed by group of organizations including the League of Oregon Cities, Association of Oregon Counties and the Oregon Association of Clean Water Agencies (ACWA). It is available on the ACWA web site: <http://www.oracwa.org/>.

This discussion is only a brief overview of the NMFS rule. The NMFS publication, *A Citizen's Guide to the 4(d) Rule for Threatened Salmon and Steelhead on the West Coast*, available on the NMFS web site, includes the full text of the criteria and is the best guide meeting these criteria.

For more information on the Endangered Species Act see the NMFS website:
www.nwr.noaa.gov
and the USF&W website
<http://endangered.fws.gov/>

2.7 Oregon Land Use Planning

Oregon cities and counties have authority to regulate land use activities through local comprehensive plans and related development regulations. This authority begins with a broad charge given to them by the Oregon constitution and the Oregon legislature to protect the public's health, safety, and general welfare.

Every city and county is required to have a comprehensive plan and accompanying development ordinance to be in compliance with state land use planning goals. While the comprehensive plan must serve to implement the statewide planning goals mandated by

state law, cities and counties have a wide degree of local control over how resource protection is addressed in their community.

The Oregon land use planning system provides a unique opportunity for local jurisdictions to address water quality protection and enhancement. Many of the goals have a direct connection to water quality, particularly Goals 5 and 6. In the case of Goal 5 there is a specific rule that requires local jurisdictions to protect riparian areas and wetlands from development. Goal 6 is less specific about how local jurisdictions should protect and enhance water quality, but provides a sound framework for new ordinances that address a wide variety of water quality objectives, based on state or federal regulations.

Chapter 3 specifically describes how many of the land use planning goals can be used to protect and enhance water quality. Chapter 3 provides specific comprehensive language that, in concert with the model ordinances found in this Guidebook, will allow local jurisdictions to adequately address the water quality programs and regulations through their development process.

For more information on Oregon land use planning see the Department of Land Conservation and Development website:

<http://www.lcd.state.or.us/>

2.8 Federal Emergency Management Agency and the National Flood Insurance Program

In many communities, the Federal Emergency Management Agency (FEMA) exercises regulatory control over development occurring in flood areas. While FEMA regulations are not specifically geared toward the issue of water quality, because regulatory measures may indirectly support broader efforts to protect water quality, they are mentioned here.

The National Flood Insurance Program (NFIP) is a federal program that allows property owners to purchase flood insurance protection. Participation in the NFIP is based on an agreement between local communities and the federal government. In exchange for the availability of flood insurance within the community, communities must implement measures to reduce future flood risks. Owners and occupants of insurable properties may purchase NFIP flood insurance through licensed property insurance agents or brokers.

Most of the nation's communities with serious flooding potential have joined the NFIP, though FEMA still encourages communities to consider more restrictive flood protection standards. More stringent requirements adopted at the state or local level would take precedence over requirements outlined in the NFIP.

As part of the NFIP, local FEMA administrators work with members from each participating community to establish a local Flood Insurance Rate Map. The map is intended to show areas within the 100-year flood boundary, also known as Special Flood Hazard Areas (SFHAs), which are subject to minimum floodplain management standards.

A 100-year flood is a flood level with a 1 percent or greater chance of being equaled or exceeded in any given year.

Minimum floodplain management standards in SFHAs have two purposes: 1) to prevent new development from increasing the flood threat, and 2) to protect buildings from future flood events. To ensure that appropriate construction materials and methods have been used, local permitting offices are required to obtain detailed documentation on construction techniques for all new development and substantial redevelopment.

FEMA may also designate a *floodway* in urban areas to avoid significantly increasing upstream flood elevations. A *floodway* is defined as the river channel and floodplain that must remain unobstructed in order to discharge the base flood without increasing flood levels by more than one foot. Under NFIP, communities must prohibit any development in the designated floodway that could cause an additional rise in the base flood elevation.

For more information, contact the FEMA, NFIP website:

<http://www.fema.gov/nfip/laws.htm>