

CHAPTER 1 - INTRODUCTION



Chapter Organization

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1.1 APPLICABILITY

Within jurisdictions adopting this Manual, any entity applying for the approval of a land development application, including residential, commercial and industrial development, or any local jurisdiction proposing a municipal road and/or drainage project, may be required to prepare a drainage submittal package that is in conformance with the standards and criteria found within the Central Oregon Stormwater Manual (hereafter referred to as this Manual). A drainage submittal package shall consist of road and drainage construction plans, a drainage report and any additional applicable supporting documents as per the requirements found in Chapter 3. For land development projects, the plans and calculations must be submitted to the local jurisdiction for review and acceptance, and the responsibility for adhering to these standards lies with the project proponent.

This Manual identifies eight basic requirements for drainage design and includes additional guidance for performing hydrology calculations (Chapter 5) and applying site design and low impact development principles (Chapter 11). The basic requirements are detailed in Chapter 2, along with flow charts to assist project proponents in determining which requirements apply to a given project.

The requirements of this Manual provide guidance on how to design stormwater management systems that meet the Oregon Department of Environmental Quality (DEQ)'s rule authorization on requirements for underground injection of stormwater and reduce, to the maximum extent practicable (MEP), pollutants discharged to surface waters.

1.2 OREGON DRAINAGE LAW

Oregon drainage law, which originates from common law or court-made law, has developed without legislative action, and is embodied in the decisions of the courts. Therefore, there are no Oregon Revised Statutes pertaining to Oregon drainage law.

Oregon has adopted the civil law doctrine of drainage. Under this doctrine, adjoining landowners are entitled to have the normal course of natural drainage maintained. The lower owner must accept water which naturally comes from above, but is entitled not to have the normal drainage changed or substantially increased. The lower landowner may not obstruct the run-off from the upper land if the upper landowner is properly discharging the water.

For a landowner to drain water onto lands of another in the State of Oregon, two conditions must be satisfied initially: 1) the lands must contain a natural drainage course; and 2) the landowner must have acquired the right of drainage supported by consideration. In addition, because Oregon has adopted the civil law doctrine of drainage, three basic elements must be followed:

1. A landowner may not divert water onto adjoining land that would not otherwise have flowed there. "Divert water" includes but is not necessarily limited to:
 - a. water diverted from one drainage area to another; and
 - b. water collected and discharged that normally would infiltrate into the ground, pond, and/or evaporate.

2. The upper landowner may not change the place where the water flows onto the lower owner's land (Most of the diversions not in compliance with this element result from grading and paving work and/or improvements to water collection systems).
3. The upper landowner may not accumulate large quantities of water, then release it, greatly accelerating the flow onto the lower owner's land. This does not mean that the upper landowner can not accelerate the flow of water at all; experience has found drainage to be improper only when acceleration and concentration of the water were substantially increased.

Subsurface waters which percolate to the surface can be intercepted and diverted for the protection of highways without regard for the loss of these waters to adjacent landowners. In those cases where wells and springs are involved, the right of way agent should contact the affected owner(s) to prevent any misunderstanding over damage that could be claimed. Where certain drainage patterns have been established over long periods of time (i.e. in excess of at least 10 years) which are not the original natural drainage, there may be legal rights acquired which allow the continuance of the altered drainage pattern. Drainage designs should satisfy Oregon drainage law to avoid claims or litigation resulting from improper drainage design. Project proponents may need to consult legal council when unique drainage situations require additional guidance.

Oregon drainage law does not specifically address altering subsurface flows. However, landowners and developers should avoid handling stormwater in a way that alters subsurface flows.

1.3 DEPARTMENT OF ENVIRONMENTAL QUALITY

In Oregon, stormwater regulations are governed by several agencies, including the Department of Environmental Quality (DEQ), the Department of State Lands (DSL), and the Oregon Department of Fish and Wildlife (ODFW). DEQ has standards relating to both surface water management through the National Pollutant Discharge Elimination System (NPDES) permit program and protection of subsurface waters through the Underground Injection Control (UIC) Rule. This Manual is intended to support compliance with DEQ standards and Oregon Administrative Rules for stormwater management in order to address the concerns of communities in Central Oregon.

1.3.1 NPDES PERMITTED COMMUNITIES

The federal Clean Water Act is the primary federal law protecting water quality and includes the National Pollutant Discharge Elimination System (NPDES) permit program. Point source discharges to waters of the U.S., including stormwater and wastewater discharges, are regulated through NPDES permits issued by the Environmental Protection Agency or by delegated states. In Oregon, NPDES permits are issued and implemented by the Department of Environmental Quality (DEQ). Oregon Administrative Rules (OAR) Chapter 340, Division 041 is the primary Oregon State law protecting surface water quality, and additional divisions of Chapter 340 adopt other water quality program rules.

DEQ combines the federal NPDES regulations with pertinent state regulations and issues combined permits that regulate discharges to waters of the U.S. and waters of the state. These permits are designed to satisfy NPDES permit requirements under the federal Clean Water Act and State law under OAR 340. In Oregon, both groundwater and surface water may be considered waters of the state.

In December of 1999, the Environmental Protection Agency (EPA) adopted National Pollutant Discharge Elimination System (NPDES) Phase II stormwater regulations. Those rules identified municipalities that are subject to NPDES municipal stormwater permitting requirements. Federal regulations required that Phase II permits be issued by December 2002 and that designated Phase II communities submit an application for permit coverage by March 2003. As of March 2007, the City of Bend is the only community in Central Oregon subject to a NPDES Phase II Permit.

1.3.2 UNDERGROUND INJECTION CONTROL RULE

The Underground Injection Control (UIC) program was enacted in 1974, under the Safe Drinking Water Act (SDWA), and is administered under 40 Code of Federal Regulations (CFR) part 144 through 146. In 1984 the Oregon Department of Environmental Quality (DEQ) was delegated primacy by the EPA and re-authorized in 1991. DEQ regulates this program under Oregon's Groundwater Protection Act and Oregon's groundwater protection rules (OAR 340, Division 40 and 44). The intent of the program is to protect groundwater resources, primarily used for drinking water, from contamination and to protect public health. UICs must also comply with Oregon's anti-degradation statute, ORS 468B.020, and codified in Oregon's groundwater protection rule (OAR 340-040-0020(3)). In some instances, groundwater beneficial use may require a level of protection greater than that required for drinking water or human health.

Underground injection is the placement of any fluid into the subsurface. There are numerous classes and types of injection systems. All classes and types are required to be registered with DEQ and approved either through rule-authorization (in lieu of a permit), under a state permit, or closed. Underground injection systems include, but are not limited to, an assemblage of perforated pipes, drain tiles, drill holes, drywells, infiltration galleries, soakage trenches, or other mechanism intended to distribute fluids below the surface of the ground. This manual is only concerned with UIC regulations as they apply to stormwater disposal.

UICs provide a sustainable recharge to local groundwater and surface waters. UICs can reduce the size and foot print of surface drainage controls at a site. For example, an infiltration swale with an overflow drywell has a much smaller footprint than a stand alone detention pond. UICs can also be used to attenuate stream flashiness during storm events. UICs are an often used stormwater management technique throughout Central Oregon and a primary focus for this manual.

This manual can be used as a general guide to address many UIC rule authorization requirements. It should be used in conjunction with the UIC rules and other guidance provided by DEQ. Injection systems that cannot meet rule-authorization or requirements are either prohibited or must obtain a permit. This manual does not cover systems that are prohibited or required to obtain a permit.

In addition, DEQ has strict guidelines for closing and decommissioning existing UIC systems. Project proponents wishing to close an existing UIC should coordinate with DEQ to obtain guidelines and approval.

1.4 GENERAL REQUIREMENTS

Note: This section applies only to the requirements for jurisdictions adopting this manual. This section does not describe the process for any permit or rule authorization issued by DEQ.

The project proponent is responsible for coordinating the project consultants, providing complete submittals, ensuring adherence to the standards and criteria found in this Manual, State requirements, statutes and rules, and any local jurisdiction conditions. The project proponent is required to obtain acceptance of the drainage submittal from the local jurisdiction prior to final plat approval, issuance of a grading or building permit, or any other land use action as defined by code, regulation or resolution of the local jurisdiction. The drainage submittal shall be prepared in accordance with this Manual and the applicable version of the local jurisdiction design standards.

The rate and volume of stormwater runoff originating on any proposed land development, road and/or areas draining to, across and/or through the project site shall be estimated in accordance with the criteria found in this Manual. The estimates shall be the basis of design for the drainage report. The drainage submittal shall be prepared by a qualified Engineer and shall be submitted to the local jurisdiction for review and acceptance.

Unless specifically approved by the local jurisdiction, stormwater runoff from any proposed land development to any natural or constructed point of discharge downstream shall not exceed the pre-development peak rate of runoff. If stormwater runoff from any proposed land development discharges into a Special Drainage Area as defined in Section 7.7.1 or other problem area as determined by the local jurisdiction, the volume of runoff leaving the site shall be restricted to that of the pre-developed condition volume. If a downstream/down-gradient analysis indicates that there will be no unacceptable impacts, then stormwater volume restrictions may be eased with approval of the local jurisdiction.

Stormwater runoff from a developed site shall leave the site in the same manner and location as it did in the pre-developed condition. Flow may not be concentrated onto downstream properties where sheet flow previously existed. Drainage shall not be diverted and released downstream at points not receiving drainage prior to the proposed development. Stormwater shall not be injected underground or infiltrated such that subsurface flows or water accumulation could adversely affect down gradient properties, streets, roads, other infrastructure, or public safety.

Where possible, project proponents should utilize the low impact development approaches and site design techniques discussed in Chapter 11 to help reduce pollutants and runoff from the developed site. These techniques may reduce the size of required stormwater management facilities (ponds, pipes, etc.) proposed for the site.

1.4.1 STANDARD OF CARE

The guidelines found in this Manual should be considered the **minimum** requirements to be used in the design of stormwater facilities. Due to special site conditions, environmental constraints, or applicable laws, stormwater management designs may need to exceed the minimum requirements. It is incumbent upon the Engineer to use good engineering practice and to be aware of, and implement, new design practices and procedures that reflect current techniques in stormwater design, providing sufficient measures to ensure that the drainage facilities function as intended. Good engineering practice is defined as professional and ethical conduct that meets the current codes and regulations adopted for Engineers. The proposed design must consider functionality, constructability, and maintenance, including the health, safety and welfare of the public, in order to fully address the intent of this Manual.

1.4.2 SEVERABILITY

If any section, sentence, clause or phrase of this Manual should be held invalid or unconstitutional, the validity or constitutionality thereof shall not affect the validity or constitutionality of any other section, sentence, clause or phrase of this Manual.

1.4.3 PROCESS AND APPEALS

Individual processes for submittal, review, and approval of drainage proposals are determined by each local jurisdiction. Consult the applicable local code for more information.

In those cases where the project proponent desires to appeal a decision made with respect to a land use application or submittal that falls subject to the criteria and standards found in this Manual, consult the local jurisdiction for appeals procedures in the applicable local code.

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