

# ODOT Project Delivery Guide

## APPENDIX F: GEO-ENVIRONMENTAL

*To report problems or update information, please e-mail the [PDG Webmaster](#)*

For the most complete and current details about ODOT's Geo-Environmental Section, including resources and guidance, please visit:

<http://www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/> where you will find this very useful e-guide:

[http://www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/e\\_guide.shtml](http://www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/e_guide.shtml)

The e-guide is designed help you navigate through the various environmental and permitting procedures required by the National Environmental Policy Act (NEPA) as well as other federal and state laws and regulations that govern constructing a highway project in Oregon.

Good stewardship of Oregon's environment is a responsibility of every ODOT employee and it is reflected in our decisions and actions. ODOT's mission is in alignment with sound environmental stewardship and best management practices. As public servants, we strive to meet the spirit and intent of environmental laws. Our agency complies with regulations, and enhances the environment, balancing such enhancement with the scope and purpose of our mission.

Many state and federal laws govern environmental work and determine the process for securing permits or "permission" to affect a protected resource. Impact-avoidance is a major aspect of all work at ODOT. In fact, with the escalating cost of environmental compliance over the last few years, there is more pressure and growing scrutiny placed upon avoiding environmental impacts.

Environmental compliance adheres to the concept of "sequencing," in which the normal course or "sequence" of work follows a prioritized progression in order of occurrence:

**Avoidance** - Avoidance of the resource is the best choice. The best stewardship of the resource is to avoid harm in the first place.

**Minimization** - If affecting the resource cannot be avoided, then minimize harm to the resource to the maximum extent possible and practicable.

**Mitigation** - Where impacts to the resource cannot be avoided, and where minimization harms the resource, mitigate or offset the harm. Usual mitigation is in-place and in-kind, but more creative, productive, and cost-effective mitigations, such as mitigation banking, are increasingly used. Some regulatory agencies, however, are very restrictive in their response to much variability.

As a last resort, compensation may be approved where resource mitigation is impossible, cost prohibitive, impractical, and ill advised.

## **PROMINENT ENVIRONMENTAL LEGISLATION**

ODOT has over 65 state and federal environmental laws and regulations to obey. Some of the most prominent legal drivers that affect project development are:

- National Environmental Policy Act, 1969
- Endangered Species Act, 1973
- Clean Water Act, 1972
- Clean Air Act, 1963
- Department of Transportation Act of 1966
- Federal Aid Highway Act of 1970
- National Historic Preservation Act, 1966
- Resource Conservation and Recovery Act, 1976
- Oregon Statewide Planning Goals, 1973
- Federal Migratory Bird Treaty Act, 1918

With the exception of the Federal Migratory Bird Treaty Act each of these laws has specific regulations and guidance for implementation.

## ***NATIONAL ENVIRONMENTAL POLICY ACT***

The National Environmental Policy Act (NEPA) was enacted in 1969. The purpose of NEPA is “To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the nation; and to establish a Council on Environmental Quality.”

NEPA is a far-reaching federal law that plays a fundamental role in ODOT project development. NEPA is our basic national charter for protection of the environment. It establishes policy, sets goals, and provides means for carrying out the policy. NEPA contains “action-forcing” provisions to make sure that federal agencies act according to the letter and spirit of the Act. Their purpose is to tell federal agencies what they must do to comply with the procedures and achieve the goals of the Act. The President, the federal agencies, and the courts share responsibility for enforcing the Act.

NEPA requires that any activity or project receiving federal funding or other federal approvals (including transportation projects) undergo an analysis of

potential impacts. Under NEPA, FHWA and FTA work closely with other federal agencies and state, local, and tribal governments; public and private organizations; and the public to understand a project's impact. This process involves striking a delicate balance among many different factors such as mobility needs, economic prosperity, health and environmental protection, community and neighborhood preservation, and quality of life for present and future generations. To get through this detailed process, ODOT uses the NEPA process to evaluate all social, economic, and environmental concerns with each individual project.

40 CFR 1500.2 states that NEPA requirements must be integrated with other planning and environmental requirements so that such procedures can run concurrently rather than consecutively. Also known as "umbrella provisions," NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.

The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. These regulations provide the direction to achieve this purpose.

NEPA and other federal regulations apply to ODOT projects when there's a federal "nexus" - such as where federal funding or approvals are required for the project. ODOT's policy is to treat most projects as if they were a federal nexus.

## Environmental Classification

All transportation-related projects are divided into three classes based on what level of environmental work is needed. Project classification is a combination of applying both law and judgment. Since each project is individual, the law applying to classification cannot realistically describe every situation. Projects that fall clearly within a classification are easy to decide. It's the projects that fall on the borders between one classification and another that are difficult to call. In these situations, ODOT, through its regions, uses the criterion of what best serves the project and the environment to determine the classification. On federally funded projects, FHWA must concur with ODOT's classification. In projects using state-only monies, ODOT takes the lead in signing the Part 3. However, the classification system still applies.

Below are the descriptions of the three types of environmental classifications:

- A Class 1 action** has significant impacts to the natural or social environment that cannot be fully mitigated or reversed. Class 1 actions require the preparation of a Draft and Final Environmental Impact Statement (DEIS/FEIS) and the issuance of a Record of Decision (ROD). These projects typically are very large (e.g., new controlled access freeways, projects of four or more lanes on a new location), but may also be projects which completely eliminate a resource (such as, demolition of a historic bridge or filling in a unique wetland). Approximately 1% of all projects are Class 1.
- A Class 2 action** applies to projects that have very little individual or cumulative impact on the environment; in essence, the natural and social environments will be the same as before the project was undertaken. A Categorical Exclusion does NOT mean exemption from other requirements. This action may require environmental studies or clearances/permits (e.g., biological assessment, 106 documentation), but does not require an EA or EIS. Approximately 96% of all projects are Class 2.
- A Class 3 action** is required for projects where the significance of the impact on the environment is not clearly established (it is unclear whether the action is a Class 1 or Class 2). The original intent of the classification has changed somewhat, and its current customary use is as a class unto itself, though its findings could result in changing project classification. These projects may have impacts that do not substantially change the character of an area, but can be mitigated to some degree. These actions require the preparation of an Environmental Assessment (EA) and a Revised Environmental Assessment (REA) to document project impacts and mitigation. If the EA/REA finds that the project impacts are not "significant," the REA includes a Finding of No Significant Impact (FONSI), which constitutes design approval. If the EA finds that the impacts are "significant," then the Class 3 project is upgraded to a Class 1 and an EIS is prepared. Sometimes prior to the completion of an EA, it is determined that an EIS is needed; in that case, adjustments are made to the EA to change it to an EIS. Some of the key elements of this change are discussed below. Design, scope, or funding changes may result in changing the classification of the project during the development phase. If the project changes significantly in scope of impact, or in funding from state to federal funding, a new prospectus and new Part 3 must be processed and the classification reviewed and confirmed. Changes to federal funding should occur before any right of way acquisition occurs. Approximately 3% of all projects are Class 3.

## NEPA Documentation

Documentation (along with dissemination) is an essential component of the NEPA project development process, which supports and complements [public involvement](#) and interagency coordination. NEPA requires ODOT to disclose the results of its analysis and the effects of project implementation on the environment and to solicit comments on the proposals from interested and affected parties. NEPA process stipulates complete disclosure to the public; allows others an opportunity to provide input and comment on proposals, alternatives, and environmental impacts; and provides the appropriate information for the decision-maker to make a reasoned choice among alternatives.

Transportation projects vary in type, size and complexity, and potential to affect the environment. The effects can vary from very minor to significant impacts on the human environment. To account for the variability of project impacts, three basic "classes of action" are allowed and determine how compliance with NEPA is carried out and documented:

- Environmental Impact Statement
- Categorical Exclusions
- Environmental Assessment

### *Environmental Impact Statement*

An Environmental Impact Statement (EIS) is prepared for projects where it is known that the action will have a significant or irreversible effect on the environment. An EIS is a full disclosure document that details the process through which a transportation project was developed, includes consideration of a range of reasonable alternatives, analyzes the potential impacts resulting from the alternatives, and demonstrates compliance with other applicable environmental laws and executive orders. The EIS process is completed in the following ordered steps: Notice of Intent (NOI), draft EIS, final EIS, and ROD.

An EIS can take anywhere from 3 years (at a minimum) to 5 years (and longer) to complete. The cost to complete an EIS ranges from \$750K to over \$1 million. Examples of projects that have an EIS are: The Willamette River Bridge in Eugene, the Columbia River Crossing, Newberg-Dundee, Highway 62 Corridor, West Eugene Parkway, and Spencer Creek Bridge.

### *Categorical Exclusions*

Categorical Exclusions (CE) are issued for actions that do not individually or cumulatively have a significant effect on the environment. A CE is a category of actions which do not individually or cumulatively have a significant effect on the human environment. They are actions which: do

not induce significant impacts to planned growth or land use for the area, do not require the relocation of significant numbers of people; do not have a significant impact on any natural, cultural, recreational, historic or other resource; do not involve significant air, noise, or water quality impacts; do not have significant impacts on travel patterns; and do not otherwise, either individually or cumulatively, have any significant environmental impacts.

### *Environmental Assessment*

An Environmental Assessment (EA) is prepared for actions in which the significance of the environmental impact is not clearly established. Should environmental analysis and interagency review during the EA process find a project to have no significant impacts on the quality of the environment, a Finding of No Significant Impact (FONSI) is issued.

An EA is a concise public document that serves to:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.

- Aid an agency's compliance with NEPA when no environmental impact statement is necessary.

- Facilitate preparation of a statement when one is necessary

FHWA must approve an EA before it is made available to the public. After public comments are received and considered, a determination of the significance of the impacts is made:

- If at any point in the process of preparing an EA it is discovered that the project would result in significant impacts an EIS must be prepared
- If, after completing the EA, it is evident that there are no significant impacts associated with the project, a finding of no significant impact (FONSI) may be prepared

- The Environmental Project Manager (EPM) or the consultant prepares a "Decision Statement" which summarizes the process and the findings of the EA. This is unique to ODOT

If it is determined that there will be no significant impacts a FONSI will be prepared to conclude the process and document the decision. A FONSI is issued when environmental analysis and interagency review during the EA process find a project to have no significant impacts on the quality of the environment. The FONSI document is the EA modified to reflect all applicable comments and responses. If it was not done in the EA, the FONSI must include the project sponsor's recommendation or selected alternative.

An EA can take anywhere from 1 to 3 years to complete. The cost to complete an EA ranges from \$100K to \$700K. Examples of projects that might have an EA are: realignment of / adding capacity to a highway,

actions on federal lands (BLM, USFS), or changing intersection to interchange.

For information about project lifecycle Title VI and Environmental Justice considerations, visit the [Title VI Plan](https://www.oregon.gov/ODOT/CS/CivilRights) at Oregon.gov/ODOT/CS/Civil Rights.

## ***HOW ENVIRONMENTAL CLASSIFICATIONS AFFECT THE PROJECT***

### **Class 1 Action**

- Must have citizen involvement during alternative selection and development
- Must have logical termini, and cannot be segmented for the purpose of avoidance of design development on parts which will be built in the future
- Must consider the No-Build and all reasonable build alternatives, including a Transportation Systems Management (TSM) alternative where applicable at the same level of analysis
- Must be able to demonstrate purpose and need based on transportation demand, safety, legislative directive, economic development and planned growth, modal interrelationships, system linkage, condition of existing facility or inclusion in transportation plan
- Must not make a decision to select an alternative based on using right of way already in ODOT's possession
- Must honor certain procedural timelines related to the approval and circulation of the environmental document and ROD
- The signature on the ROD constitutes FHWA Design Approval. Right of way acquisition cannot proceed until after the ROD

### **Class 2 Action**

- Citizen involvement is not required, but is encouraged, and is at the discretion of the project team.
- After concurrence of classification, other environmental documentation may be required. The project team should work with the REC to determine if additional documentation is needed.
- ODOT's Design Approval is not connected to environmental documentation however certain designs may need approval by a jurisdictional authority before the project can be built. ODOT's development approval maybe moot if the local agency permits are not obtained and the structure or design cannot be constructed.

### **Class 3 Action**

This action affects the project team in substantially the same way as a Class 1, with the following exceptions:

- May limit alternatives to a Build and No-Build scenario-more, if desirable
- Signature on the REA constitutes Design Approval
- Procedural timelines must be honored, but are shorter

## ***DEPARTMENT OF TRANSPORTATION ACT OF 1966 - SECTION 4(F)***

Since the mid-1960s, federal transportation policy has reflected an effort to preserve the beauty and integrity of publicly owned public parks and recreation areas, waterfowl and wildlife refuges, and historic sites considered to have national, state or local significance. The Department of Transportation Act (DOT Act) of 1966 included a special provision to carry out this effort—Section 4(f).

Since 1966, Section 4(f) has undergone three changes. The first of these changes was a 1968 amendment to Section 4(f)'s wording—an effort by lawmakers to reconcile the language with a similar piece of legislation. The second change was a result of the 1983 recodification of the DOT Act, in which Section 4(f) became 49 U.S.C. Section 303. Technically speaking, the statute is no longer Section 4(f); however, because of its widespread familiarity among state and federal employees, it continues to be officially recognized by its original name. The third change to 4(f) with the recently passed SAFETEA-LU. It eliminates the need for alternatives analysis when there is a minor impact to any resource protected under 4(f) - it's referred to as *de minimis*, and was included in Section 6009 of the act.

Section 4(f) of the DOT Act stipulated that FHWA and other DOT agencies cannot approve the use of land in a significant publicly owned public park, recreation area, wildlife or waterfowl refuge, or any significant historic site unless the following conditions apply:

- There is no feasible and prudent alternative to the use of land
- The action includes all possible planning to minimize harm to the property resulting from use

Section 4(f) protects three basic types of resources: publicly owned parks and recreation areas, publicly owned wildlife and waterfowl refuges, and historic sites.

1. To qualify as a park or recreation area under the statute, a resource must meet the following criteria:

- It must be publicly owned
- It must be open to the public
- Its major purpose must be for park or recreation activities
- It must be significant as a park or recreation area

2. To qualify as a refuge under the statute, a resource must meet the following criteria:

- It must be publicly owned

Its major purpose must be that of a refuge  
It must be significant as a refuge

3. To qualify for protection under Section 4(f), a historic site must meet the following criteria:

It must be of national, state or local significance.

If it is not on or eligible for listing on the National Register of Historic Places (NRHP), its protection must be considered appropriate by FHWA.

Unlike the other two basic Section 4(f) resource categories—parks and recreation areas, and refuges—historic sites do not require public ownership in order to qualify for protection under Section 4(f).

FHWA includes an evaluation of the use of land protected under Section 4(f) when assessing the environmental effects of an action through the NEPA process. ODOT typically prepares Determinations of Eligibility for historic properties not listed on or determined eligible for the National Register during the project development process; FHWA does not end up deciding if the protection of a resource is appropriate. Section 4(f) requires the consideration of alternatives that avoid or minimize impacts to these protected resources. The environmental regulations for applying Section 4(f) to transportation project development can be found at 23 CFR 771.135.

## ***LAND AND WATER CONSERVATION ACT - SECTION 6(F)***

Recreation property is frequently prevented from conversion to other than recreational use by a reversion clause in the deed, or by the type of funding that was used to purchase or develop the property.

The Land and Water Conservation program was established by the LWCF Act of 1965. It was enacted "... to assist in preserving, developing and assuring accessibility to all citizens of the United States of present and future generations... such quality and quantity of outdoor recreation resources as may be available and are necessary and desirable for individual active participation." The purpose of Section 6(f) is to prevent property from being converted from outdoor recreation to any other use. Section 6(f) of the Land and Water Conservation Act requires that the conversion of lands or facilities acquired with Land and Water Conservation Act funds be coordinated with the Department of Interior.

Regardless of the project's funding source or type, if a highway project uses property encumbered by Section 6(f), the property has to be replaced. Even if the Land and Water Conservation funds were used for development of only a part of a parcel, the entire parcel is considered encumbered. Replacement property must be of "reasonably equivalent or usefulness and

location as that being converted.” Replace property has to be of at least equal fair market value.

Oregon State Parks and Recreation manages this program.

<http://www.oregon.gov/OPRD/GRANTS/lwcf.shtml>

## ***STREAMLINING OF ENVIRONMENTAL PERMITTING***

In the simplest terms, environmental permit streamlining consists of completing environmental reviews and permitting in a timely way, while ensuring environmentally sound projects.

This entails establishing realistic project development timeframes among appropriate and environmental agencies, and then working cooperatively to adhere to those timeframes.

The coordination of multiple and overlapping environmental reviews, analyses, and permitting actions is essential to meeting the environmental streamlining mandate for highway and transit projects under TEA-21. Most states and some local jurisdictions have their own environmental statutes and requirements that must be addressed.

The complexity of the processes, multiple actions, and requirements do not easily lead to clear-cut solutions for establishing national timeframes. Instead, federal agencies, as stated in the National Streamlining Memorandum of Understanding (MOU), agreed to pursue timeframes and other solutions with the project sponsor at the regional, state, local, or project level where their specific processes come into play and where the most effective solutions lie.

### **NEPA/Section 404 Permit Merger**

The NEPA/404 merger is designed to improve the efficiency of the FHWA NEPA process, using early and active interagency coordination to focus efforts on reaching an environmentally sound project. For projects involving fill in waters of the United States, the COE is responsible for issuing a permit which assesses whether the action is appropriate. The requirements for that permitting process are under Section 404 of the Clean Water Act. Often in securing a 404 permit there can be many federal agencies involved such as the COE, USFWS, EPA, and National Marine Fishery Service (NMFS).

The NEPA/404 merger process was initiated to streamline project decision making on federal-aid Highway Projects. The reason for merging the FHWA NEPA and Section 404 permit processes is to provide the opportunity to expedite project decision making by executing one overall federal public

interest decision, at one point in time, for a federal-aid project. Both processes involve evaluation of alternatives and assessment of effect to resources against the need for a project, and officials of all agencies involved recognize the opportunity to avoid duplication and inefficiencies within them.

## Collaborative Environmental and Transportation Agreement for Streamlining

The Collaborative Environmental and Transportation Agreement for Streamlining (CETAS) program was formed by ODOT in June of 2000 in response to several issues:

- An increasing sense of urgency about environmental stresses
- The response to TEA-21 streamlining
- The complexity of environmental regulation and planning requirements
- The need to update and fully implement the existing NEPA/404 Accord

The shared vision of the CETAS members is to balance environmental and transportation values with the ultimate goal of the improved outcome for each agency's mission.

The CETAS group is composed of one representative, and one alternate from each of the following agencies:

- Oregon Department of Transportation
- Federal Highway Administration
- Oregon Division of State Lands
- Oregon Department of Environmental Quality
- Oregon Department of Fish and Wildlife
- Department of Land Conservation and Development
- Environmental Protection Agency
- US Fish and Wildlife Service
- US Army Corps of Engineers
- National Marine Fisheries Service
- Oregon State Historic Preservation Office

On April 1, 2001, the Accord, now the Agreement for Environmental Streamlining of Major Transportation Projects was amended to more fully address Endangered Species Act issues, to reflect ODOT's shift towards earlier NEPA analysis within its own planning process, and to ensure full implementation of the Agreement.

The agreement applies to projects that are or may be included in the STIP, are processed with an EIS or EA, and impact cultural or natural resources.

Under this agreement, ODOT and FHWA provide an opportunity for signatory agencies to review all major transportation projects in ODOT's program

with potential impacts to cultural or natural resources through distribution of prospectuses and environmental classification requests.

The purpose of the review is to provide project development status information and to receive input, preliminary consensus, and recommendations regarding projects in the program. Project updates are also presented at regular CETAS meetings. The CETAS group focuses on four major concurrence points:

- Purpose and need

- Alternatives

- Alternative evaluation criteria and measures

- Preferred alternative

## ***FEDERAL ENDANGERED SPECIES ACT***

The Endangered Species Act (ESA) was originally passed in 1973. It provides for the designation and protection of invertebrates, wildlife, fish, and plant species that are in danger of becoming extinct and conserves the ecosystems upon which such species depend.

The ESA is administered by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS). NMFS is generally responsible for marine species, anadromous fish, and sea turtles when they are in the water. USFWS is responsible for plants, birds, terrestrial and freshwater species, sea otters, and sea turtles when they are on land.

Under the ESA, an endangered species is any species in danger of becoming extinct throughout all or a significant portion of its range. The ESA excludes recognized insect pests from this definition. A threatened species is one that is likely to become endangered in the foreseeable future. The ESA makes it illegal for any individual to kill, collect, remove, harass, import, or export an endangered or threatened species without a permit from the Secretary of the Department of the Interior for USFWS administered species or the Secretary of the U.S. Department of Commerce for species administered by NMFS. To be protected, a species must be listed by either department as endangered or threatened.

The ESA directs the departments to establish programs to conserve animals and plants, including endangered and threatened species. All federal agencies must use their authorities to carry out programs for the conservation of endangered and threatened species.

## Determination of Endangered Species and Threatened Species

Species are listed on the basis of “the best scientific and commercial data available.” Listings are made solely on the species’ biological status and threats to the species’ existence. In some instances, a species that closely resembles an endangered or threatened species is listed due to similarity of appearance. The services (NMFS and USFWS) also maintain a list of “candidate” species. These are species that have documentation to warrant proposing them for listing as endangered or threatened, but for which development of a listing proposal is precluded by higher priority activities. The services work with state and private partners to carry out conservation actions for candidate species to prevent their further decline and possibly eliminate the need to list them as endangered or threatened. Proposed species are species currently proposed for listing as either threatened or endangered.

## Recovery and Critical Habitat

The ultimate goal of the ESA is to “recover” species so they no longer need protection under the ESA. The law requires that recovery plans be developed for listed species describing the steps needed to restore species to health. Appropriate public and private agencies and institutions and other qualified persons assist in the development and implementation of “recovery plans.” Involvement of the public and interested stakeholders is also encouraged during this process.

The ESA also provides for designation of “critical habitat” for listed species when judged to be “prudent and determinable.” Critical habitat includes geographic areas that contain physical or biological features essential to the conservation of the species, and which may require special management considerations or protection. Critical habitat may include areas not occupied by the species at the time of listing but that are essential to the conservation of the species.

## ***STATE ENDANGERED SPECIES ACT***

Oregon enacted its own ESA in 1987 (Oregon Revised Statute [ORS] 496.172), and amended it in 1995. There are a total of 92 wildlife and plant species listed in the Oregon ESA. The Oregon Fish and Wildlife Commission (Commission) is responsible for reviewing the status of fish and wildlife species, while the Oregon Department of Agriculture (ODA) is responsible for plants. The state’s listing criteria are similar to those of the federal ESA, but the focus is at the state level. The Oregon ESA requires the Commission and ODA to [review each listed species](#) at least once every five years to

determine if it should be reclassified or removed from the threatened or endangered list.

The state ESA protects 35 species of fish and wildlife in Oregon. For wildlife, the Commission's policy is to obtain recovery through voluntary incentives and encouragement of appropriate species management, coordinated planning, and habitat protection and restoration.

## ***BIOLOGICAL ASSESSMENTS***

According to Section 7 of the ESA, federal agencies are required to consult with NMFS or USFWS, or both, if a federal action may affect species protected under the ESA. This consultation process, referred to as Section 7 consultation, typically requires the preparation of a Biological Assessment (BA). Because the majority of ODOT projects have a federal nexus (i.e., funding, permits, or occur on federal property) and ESA listed species are often affected by the project, the timely preparation of quality BAs is critical to meeting the regulatory intent, project schedule, and project budget.

BAs must address specific effects of activities to listed species and their habitat; describe particular actions to avoid, minimize, and mitigate adverse effects; and provide documentation to justify conclusions drawn. To maximize efficiency in the consultation process, project teams must demonstrate natural resource avoidance and minimization. If impacts are unavoidable, mitigation measures may be necessary for the project to be approved by the Services.

## ***WETLANDS AND WATERWAYS***

Generally, wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. Wetlands vary widely because of regional and local differences in soils, topography, climate, hydrology, water chemistry, vegetation, and other factors, including human disturbance.

For regulatory purposes under the Clean Water Act (CWA), the term wetlands means "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

Wetlands fall into four general categories—marshes, swamps, bogs, and fens. Marshes are wetlands dominated by soft-stemmed vegetation, while swamps have mostly woody plants. Bogs are freshwater wetlands, often formed in old glacial lakes, characterized by spongy peat deposits, evergreen trees and shrubs, and a floor covered by a thick carpet of sphagnum moss. Fens are freshwater peat-forming wetlands covered mostly by grasses, sedges, reeds, and wildflowers.

Although wetlands are often wet, a wetland might not be wet year-round. In fact, some of the most important wetlands are only seasonally wet. Wetlands are the link between the land and the water. They are transition zones where the flow of water, the cycling of nutrients, and the energy of the sun meet to produce a unique ecosystem characterized by hydrology, soils, and vegetation—making these areas very important features of a watershed. Using a watershed-based approach to wetland protection ensures that the whole system, including land, air, and water resources, is protected.

## Regulation

Activities in wetlands and waterways may be regulated by:

- The Oregon Department of State Lands (DSL) under the state Removal-Fill Law

- The Army Corps of Engineers (Corps) under the federal Clean Water Act and Rivers and Harbors Act

- The Oregon Department of Forestry under the Forest Practices Act

- The U.S. Natural Resources Conservation Service under the federal Farm Bill

- The Oregon Department of Agriculture, Natural Resources Division

- Some city and county land use ordinances

What areas are regulated?

- “Waters of the State” or “Waters of the U.S.” including:

  - Rivers, streams, most creeks, and some ditches

  - Bays, estuaries, and tidal marshes

  - Lakes and some ponds

  - Permanent and seasonal wetlands

  - The regulations apply to all lands, public or private, except tribal lands.

  - A wetland does not have to be mapped by the state or otherwise

    - “designated” to fall under the regulations.

What activities in waters of the state/nation are regulated?

- Placement of fill material

- Alteration of stream banks or stream course

- Ditching and draining

- Excavation or dredging of material

Bank stabilization (e.g., riprap or retaining walls)  
In-water construction such as piers (may also require a lease from DSL)  
Stump removal (large land-clearing projects)

Although most commonly associated with activities that involve filling of wetlands, Section 404 of the CWA actually deals with one broad type of pollution -- placement of dredged or fill material into "waters of the United States." Wetlands are one component of "waters of the United States"; however, there are numerous other types -- intermittent streams, small perennial streams, rivers, lakes, bays, estuaries, and portions of the oceans. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States.

One of the controversial aspects of Section 404 is exactly what is and isn't a wetland. For an area to be declared a wetland, it should exhibit all three of the key features -- hydrology, wetland-dependent vegetation, and soil types associated with water-saturated conditions. However, some kinds of wetlands, such as bottomland hardwood swamps, are dry during some periods. The absence of water or saturated soil at any given moment does not render a plot "not a wetland," if the vegetation and soils indicate that wet conditions often do occur and hydrological data support this conclusion.

The basic premise of the program is that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation's waters would be significantly degraded. In other words, when you apply for a permit, you must show that you have, to the extent practicable:

- Taken steps to avoid wetland impacts;
- Minimized potential impacts on wetlands; and
- Provided compensation for any remaining unavoidable impacts

Proposed activities are regulated through a permit review process. An individual permit is required for potentially significant impacts. Individual permits are reviewed by the U.S. Army Corps of Engineers, which evaluates applications under a public interest review, as well as the environmental criteria in Section 404. However, for most discharges that will have only minimal adverse effects, a general permit may be suitable. General permits are issued on a nationwide, regional, or State basis for particular categories of activities. The general permit process eliminates individual review and allows certain activities to proceed with little or no delay, provided that the general or specific conditions for the general permit are met.

Section 401(a) of the CWA requires that before issuing a license or permit that may result in any discharge to waters of the United States, a federal agency must obtain from the state in which the proposed project is located, a certification that the discharge is consistent with the CWA, including attainment of applicable state ambient water quality standards.

A permit application must include the project design, a plan to minimize impacts to the resource, and the fee. A wetland delineation may also be required. ODOT must design the project to avoid and minimize impacts to the waters to the extent practicable. In most cases, unavoidable wetland impacts must be compensated for through wetland restoration, enhancement, or creation, or by buying credits from a mitigation bank (compensatory mitigation plan). The permit application goes through a public review process. The project must also be consistent with the city or county land use plan and must comply with Oregon's water quality standards.

## ***STORMWATER***

[Operational Notice](#) PD-05 provides guidance in determining the need for stormwater quality mitigation for runoff from ODOT projects and the level of mitigation that could be necessary. ODOT is required to manage stormwater and protect the waters of the state that may be harmed by the construction or operation of ODOT facilities. Regulations and policies that govern how ODOT manages and protects these waters include the Clean Water Act, the Safe Drinking Water Act, the Endangered Species Act, the Magnuson-Stevens Act, Oregon Administrative Rule 340 Division 41, and the Oregon Plan for Salmon and Watersheds.

In effect, PD-05 means that just about any project that increases impervious surface area, realigns the roadway, or otherwise changes the drainage system of a road will require some level of stormwater treatment. The amount of treatment depends on several factors, but should be commensurate with the size of the impact and the magnitude of the project. That being the case, project teams should anticipate planning and budgeting for water quality treatment from the beginning, including staff time to analyze impacts, design treatment, and potentially acquire right-of-way. The project team should involve the environmental staff and stormwater engineer early to determine what these requirements will be.

To meet these laws and evolving regulations, ODOT is required to provide mitigation for the adverse impacts that ODOT projects may have on water quality. PD-05 presents ODOT's basic water quality goals, outlines how ODOT will assess projects to determine when stormwater quality mitigation is required and the general objectives for mitigation.

ODOT projects must comply with federal, state and local laws and ordinances regarding water quality, and will protect the beneficial uses of waters affected by the projects. Scoping for all ODOT projects must include identifying opportunities to improve the quality of highway runoff.

The basic goals for ODOT projects are:

- Stormwater runoff from a project must not cause violations of water quality standards in the receiving water.

- Stormwater runoff from a project must not cause a net increase in the pollutant load discharged to receiving waters, unless the amount of treatment required is determined to be not practicable by the region environmental manager.

- Reduce the pollutant load in stormwater runoff from a project where it can be done within the financial and physical constraints of the project, as determined by the project team.

Any project requiring either a CWA Section 404 permit or a DSL Removal/Fill permit will have to develop a stormwater management plan for submittal to DEQ as part as the permit application process. ODOT and DEQ are currently working to develop definitive guidance on what a stormwater management plan submittal needs to include, and the water quality goals for the plan.

Any project discharging stormwater to streams or lakes with listed T&E species will need to include the measures taken to treat the stormwater in the biological assessment. In urban areas and for high traffic volume roads, the treatment requirements to satisfy NMFS or USFWS may be fairly stringent.

PD-05 does not address the issue of the hydrologic impacts of highway projects. Local regulations may require detention basins to prevent changes in flood size or frequency. NMFS and USFWS will want to see mitigation for hydrologic impacts if they would adversely affect their fish, and DEQ could require the same if the changes would disrupt beneficial uses in a stream. Water quality treatment and hydrologic mitigation can sometimes, but not always, be combined into the same facilities. Project teams should anticipate this expense from the beginning.

## ***CULTURAL RESOURCES***

Cultural resources documentation at ODOT ensures regulatory compliance with both state and federal legislation. The Cultural Resources Program has been developed to balance the needs of the state's transportation system with the protection and documentation of significant historic resources.

ODOT's cultural resources specialists work with project teams, consultants and other interested stakeholders to develop projects. Their primary role is to identify and evaluate historic resources within a project's Area of Potential Effect (APE). Cultural resources include buildings, districts, objects, sites, and structures. These resources are evaluated to determine if they meet the National Register of Historic Places criteria.

Regulatory compliance for transportation projects is the primary focus of the ODOT Cultural Resources Program. The primary regulations ODOT typically encounters are the National Historic Preservation Act Section 106, Section 4(f) of the Department of Transportation Act, NEPA, and Oregon Revised Statute 358.

ODOT has developed a Cultural Resources Program to satisfy these regulations. The process includes a variety of work products to inform both regulatory agencies and ODOT project teams of Cultural Resources within a project area. These work products vary from initial scoping reports to detailed analysis of project alternatives. ODOT has the responsibility of ensuring compliance with all applicable regulations for ODOT construction projects.

## **ARCHAEOLOGY**

Archaeology is the study of human cultures through the analysis of material remains such as discarded tools, and the traces of constructions such as houses, hearths, storage pits. Some traces of human activity are obvious, such as chipped stone butchering tools, while some are subtle or microscopic, such as an organic soil stain where an animal was butchered, or microscopic pollen grains left on a milling stone.

Within Oregon, archaeological sites span the past 13,000 years, and represent traces of the cultural history and life ways of Oregon's first inhabitants. These native Oregonians have a long and colorful history, but—except for the last two hundred years—it is not a written history. The record of this cultural past is an archaeological record.

Archaeological sites are finite and fragile resources. A limited number were created over time, and these have been continuously subjected to degradation and destruction from natural and human factors. Experts tell us that Oregon's population will double in the next 50 years, and each new development, each infrastructure improvement, will take its small toll on this diminishing cultural record. If the archaeological record is like a chronicle of human history, and each site represents a "snap shot" of a specific time for a particular cultural group, the loss of a site is like an unread page torn from Oregon's cultural saga. Since only the last 200 years

of a 13,000-year history is written, the archaeological record is our link to 99% of Oregon's cultural history.

Seven federal laws and three Oregon State Laws regulate the protection of archaeological resources. Of these laws, the three Oregon statutes and the National Historic Preservation Act (NHPA), NEPA, and the Department of Transportation Act Section 4(f) are the primary legal mandates, and detail specific regulatory requirements which ODOT must satisfy. The responsibility for ensuring that significant archaeological sites are considered during transportation project development rests with the archaeological staff of ODOT's Environmental Services Section. In most cases, the regulations primarily consider a site's research potential—that is, a site's potential to inform us about the past. However, there are nine federally recognized Native American Tribes in Oregon; in many cases, Oregon's archaeological sites possess a cultural significance for the Tribes that transcends the information value they contain. ODOT bears a responsibility as a steward of these sites.

There are three levels of effort involved in assessing impacts to archaeological and cultural sites:

**Phase I:** Projects that have a potential to affect archaeological resources initiate Phase I, which can consist of one or more of the following: a search of archaeological site records and historic documents; a field survey; and exploratory subsurface probing if appropriate. If no impacts will occur, or no sites are present in the area, a short report documenting findings is submitted and the process ends. Phase I takes approximately one month to complete, and is of minimal financial cost (approximately \$4,000).

**Phase II:** If sites will be impacted, sub-surface testing is conducted to determine boundaries, content, integrity and significance under NHPA criteria. If sites are determined 'not significant', no further investigations are needed. If a site is determined to be significant, a Determination of Eligibility (DOE) is submitted to the National Register of Historic Places and is reviewed by the appropriate Indian Tribe, the State Historic Preservation Office (SHPO), and the Federal Advisory Council on Historic Preservation (ACHP). In addition, a Finding of Effect is submitted, which evaluates the project's impact on the resource. If a project is determined to have an effect upon the resource, then mitigation strategies must be identified. Phase II, from site identification to the completion of a final report, generally takes from 3 to 6 months to complete and costs an average of \$30,000 per site. However, this figure is significantly lower in situations where numerous sites are to be evaluated within a single project, due to reduced start-up and mobilization costs.

**Phase III:** If the site is determined significant, and avoidance is not a feasible option, data recovery (excavation) is conducted to record

and preserve the information from the site. When data recovery is necessary, a data recovery plan is submitted to outline: 1) current archaeological research relating to the site proposed for recovery, 2) how the site in question will contribute to current research, and 3) the level of recovery that is appropriate to address the questions identified. Oversight of this process rests most heavily on the SHPO, which must determine if the proposed research design is appropriate, and if the level of research effort is sufficient to comply with federal law and Memoranda of Agreement (MOA) with the Tribes. In addition, the ACHP also provides final oversight, reviews the appropriateness of the SHPO determinations, and must also concur on the sufficiency of the data recovery proposal. The ACHP also ensures that proper consultation with the affected Tribes has taken place, and that the Tribes are supportive of the proposed data recovery design. Phase III can be time-consuming and costly; the generation of a data recovery plan can take months to prepare, and the review process can similarly take up to six months. Additionally, fieldwork and analysis is labor and time intensive. Data recovery is rarely less than \$100,000, and depending on the number of sites impacted, can exceed \$1 million.

Preservation (i.e., avoidance) is always a primary goal, and one that is generally most satisfying for interested Tribes and cultural historians, and frequently most desirable in terms of cost. However, preservation must always be weighed with traffic efficiency and safety, and is not always possible. If an archaeological site is threatened by a highway project, the department is obliged to ensure that any information the site contains is recorded and preserved, even if it is not possible to save the site itself.

## ***ROADSIDE DEVELOPMENT***

The roadside is the area outside the traveled way. This applies to all lands managed by ODOT and may extend to elements outside the right-of-way boundaries. Examples include unpaved median strips and auxiliary facilities such as rest areas, roadside parks, viewpoints, heritage markers, pedestrian and bicycle facilities, wetlands and their associated buffer areas, stormwater treatment facilities, park and ride lots, and quarries and pit sites.

Roadside development encompasses context sensitive and sustainable design and installation of landscape and hardscape elements in the right-of-way to integrate the transportation facility into the surrounding environment.

Visual resource management includes assessing, protecting, and mitigating impacts of highway projects to both cultural and natural resources.

Visual resources are:

- Landforms such as mountains, hills, plateaus, valleys, beaches
- Water resources such as rivers, lakes, ocean, marshes, wetlands
- Vegetation such as forest, grassland, parks, croplands
- Human development such as highways, structures, lighting, fencing, guardrails

These elements are the stimuli upon which actual visual experience is based. Visual resources are not limited to elements or features that are of outstanding visual quality. A location or element in the visual environment can have visual values attributed to it by its viewers regardless of its quality. Viewer sensitivity or local values can confer visual significance on landscape features and areas that would otherwise appear unexceptional.

It is unlikely that a highway project could be constructed without having any visual effect on an area. Usually, the result is either beneficial or adverse with varying degrees of significance.

Types of projects that can trigger requirements for roadside development:

Any project may have roadside development that impacts visual resources, but the rule of thumb is that the greater the disturbance to the natural or built landscape, the greater the need.

A NEPA Section 4(f) Class 1 or 3, requiring an EA or EIS

If it is funded through the Transportation Enhancement or Scenic Byway Program, consideration of visual impacts will likely be part of the project.

If the project is on a designated state or federal Scenic Highway or Tour Route, there may be requirements for a visual impact assessment and related landscaping requirements.

If the project affects river segments or lakes designated as Oregon Scenic Waterways, consideration of visual impacts and landscaping will be necessary.

If the project affects any waterway designated as National Wild and Scenic River, visual impacts will be considered. If it affects a section designated as "recreation," Section 4(f) will apply.

If the project is within or adjacent to federal, state or local parks and recreation or conservation lands (includes National Historic and Scenic Trails, Wildlife sanctuaries, refuges and preserves, 'beach land'), coordination with those agencies will be necessary.

If right of way acquisition is planned that will impact any historic resources (National Register eligible properties, WPA/CCC constructed rockwork or structures, a bridge over 50 years old),

application of the Secretary of Interior's Standards for Rehabilitation may indicate coordination with visual resource management. If the project includes a new or relocated roadway alignment or a new interchange, major cuts and/or fills, or any new major structures, such as bridges, noise walls, retaining walls, etc., proposed, visual resource assessment and landscaping will be considered. Local government requirements may trigger roadside development.

## **HAZARDOUS MATERIALS**

Federal and State laws require the proper disposal or cleanup of soil or groundwater contaminated by hazardous materials. Project costs increase and project schedules are delayed when unknown soil or groundwater contamination is discovered. The investigation and cleanup of contaminated soil or groundwater is the responsibility of the property owner. Public funds should not be used to clean up contaminated soil and/or groundwater that are the responsibility of others. However, the cleanup of contaminated soil or groundwater may be done as a part of the project where the responsible parties can not be found, are not financially able to clean up the contamination, or are unwilling to clean up the contamination in a timely manner.

Hazardous materials such as asbestos or lead paint have been used in buildings and on bridges. These materials may remain in place for the life of the structure. Demolition waste from buildings containing asbestos or lead paint must be disposed of properly. The investigation and disposal of these materials should be done and budgeted for as a part of the project as the materials become regulated only after demolition.

### **Standard**

All reasonable efforts should be made to investigate the potential to encounter hazardous materials prior to beginning project construction. The consistent and statewide application of the guidelines herein is meant to ensure that:

- Hazardous material sites are avoided where feasible and cost-effective. The use of public funds to investigate or clean up hazardous material sites will be reduced or eliminated.

- The costs and delays during project construction resulting from unknown hazardous material sites are avoided or minimized.

- The responsible party or property owner has sufficient time to investigate and clean up contaminated soil or groundwater prior to right-of-way acquisition.

- That in the absence of a responsible party or property owner, or when they are unable or unwilling to comply in a timely fashion, ODOT has

sufficient time to investigate and clean up contaminated soil or groundwater prior to project construction.  
Cleanup and disposal costs will be recovered from responsible parties where possible.  
FHWA will support the use of federal funds to investigate and clean up hazardous material sites when warranted.  
The health and safety of ODOT employees, contractors and the public is not compromised.

## Guidelines

Project activities that may disturb hazardous materials include excavation, utility trenching, and building demolition. The purchase of contaminated right-of-way can also create future fiscal liabilities for the department. Project teams are responsible for ensuring that hazardous materials are adequately investigated during project development and the hazardous materials studies and findings are properly documented. The identification of hazardous material sites will start as early as practical and will continue as the project is developed until all sites have been investigated and addressed.

Personnel with a high level of technical expertise and who are knowledgeable in hazardous materials laws should conduct hazardous material investigations. The level of investigation is different for each project; projects in commercial or industrial areas warrant more thorough investigations than those in rural or residential areas. A minimum level of investigation would involve reviewing DEQ records and an on-site visit or reconnaissance. Additional investigations may involve historic aerial photos, PUC records, State Fire Marshal records, fire insurance maps, interviews with the local residents or businesses, interviews with ODOT maintenance personnel, deed searches, business registries, tests of building materials, and soil or groundwater testing. The investigation of hazardous material sites will be done at all of the following project phases:

- Corridor study
- Reconnaissance study
- Project prospectus
- Location survey
- Environmental document
- Design
- Right-of-Way acquisition

The level of inquiry is different for each project phase. In general, the detail and depth of the investigation increases as the project design is developed.

## *NOISE*

Noise, defined as unwanted or excessive sound, is an undesirable by-product of our modern way of life. It can be annoying, can interfere with sleep, work, or recreation, and in extremes may cause physical and psychological damage. While noise emanates from many different sources, transportation noise is perhaps the most pervasive and difficult source to avoid in society today. Highway traffic noise is a major contributor to overall transportation noise. A broad-based effort is needed to control transportation noise. This effort must achieve the goals of personal privacy and environmental quality while continuing the flow of needed transportation services for a quality society.

The Federal AID Program Guide is the Federal Highway Administration Noise Standard. All federal-aid highway projects are to be developed in conformance with this directive. State-funded ODOT projects are also generally developed in conformance with this directive. The FHWA Noise Standard lists the steps that must be taken in the preparation of traffic noise studies for highway construction projects. The guide defines when noise impacts occur and when noise abatement must be considered. The guide also requires that information be given to local officials for use in land use planning. The guide identifies two types of projects:

**Type 1 Projects:** are federal or federal-aid highway projects which construct new highways or reconstruct existing highways by significantly changing either the horizontal or vertical alignment or increasing the number of through traffic lanes. A significant change in the horizontal or vertical alignment occurs when the change is likely to result in increased noise levels to a development. Noise studies are also required for the addition of passing lanes, truck climbing lanes, interchanges, ramps, and auxiliary lanes on existing highways.

**Type 2 Projects:** A federal or federal-aid highway project for noise abatement along an existing highway. This type of project is often referred to as a retrofit project, because noise mitigation is not in conjunction with a highway construction or reconstruction project.

The ODOT Noise Mitigation policy states that ODOT will undertake actions and support policies and programs which minimize or avoid the adverse impact of noise caused by traffic on state highways. It recognizes that an effective noise mitigation policy requires a three-part approach consisting of source emission reduction, land use control, and highway design.

**Source Emission Reduction** is the most effective, far-reaching, long-range solution to the problem of traffic noise. Source emission reduction is primarily the responsibility of the Federal Environmental Protection Agency (EPA) and the State Department of Environmental

Quality (DEQ). ODOT supports reasonable legislation and effective enforcement of noise source emission regulations.

**Land Use Controls** can minimize or eliminate future noise impacts. ODOT will inform local governments of potential noise impacts that can be averted by local land use controls. Local governments should exercise control, through appropriate zoning or development approvals, to restrict the development of noise sensitive land, if such development has the potential to be noise impacted.

**Highway Design** ODOT will incorporate feasible and reasonable noise mitigation measures in conjunction with federal-aid highway construction and re-construction projects, as required by the FHWA noise standards. The department will generally not undertake noise mitigation projects on completed highways, due to the magnitude of the costs involved and competing uses for these funds. The only exceptions are situations where a substantial percentage of the mitigation cost is paid for by benefiting property owners and when warranted local government.

## *AIR QUALITY*

The National Environmental Policy Act (NEPA) of 1969 and the 1970 Federal Aid Highway Act required state transportation agencies to consider the social, economic, and environmental impacts of federal projects.

In 1970, the Clean Air Act (CAA) was amended and established National Ambient Air Quality Standards (NAAQS). States are now required to submit a State Implementation Plan (SIP) to demonstrate how any area which exceeded any air pollutant standards will attain and maintain the National Ambient Air Quality Standards (NAAQS) established by the amendment. More stringent emission standards for new vehicles were also established. A non-attainment area is an area that exceeds the National Ambient Air Quality Standards (NAAQS) for a criteria pollutant. Maintenance areas are those that were in non-attainment, but now are required to maintain the standards for a period of time before being re-designated as in attainment. Control strategies are required during this maintenance time period to ensure the standards are maintained prior to going to attainment.

The CAA was most recently amended in 1990. This amendment established air quality analysis requirements for transportation plans, as well as programs and projects to demonstrate conformity with the purpose of the SIP, in order to attain air quality standards. It also required Transportation Implementation Programs (TIP[s]) to be fiscally constrained. Transportation Conformity is a way to ensure that federal funding and approval are given to those transportation activities that are consistent with air quality goals. It ensures that transportation activities do not worsen air quality or interfere

with the purpose of the SIP. Transportation conformity applies to nonattainment and maintenance areas.

Air quality analysis can be considered in two general categories in the environmental evaluation process for highway projects—those projects that are in a designated air quality attainment area and those that are in designated non-attainment or maintenance areas. However, for an air quality analysis of highway projects, the analysis requirements are essentially the same for both non-attainment and maintenance designations.

An air quality study is required for all Environmental Class 1 and Class 3 projects regardless of its location. For class 2 projects in attainment areas, an air quality study is typically not needed. However, for class 2 projects in nonattainment or maintenance areas, a study may be required if the project involves adding signals or capacity, and some other criteria. The criteria are rather detailed, and thus projects should be discussed with the air quality specialist for air quality analysis applicability. The appropriate level of air quality analysis is dependent on the type of project, its environmental category and whether the project is located in an area designated as in attainment, nonattainment, or maintenance of the NAAQS.

A carbon monoxide (CO) or a particulate matter (PM-10) hot spot analysis may be required if the project is located in a nonattainment or maintenance area. For some Class 1 and 3 projects, a Pollutant burden analysis (area wide analysis) may be conducted. Mobile source air toxins (MSATs) are also addressed for Class 1 and 3 projects. Depending on the requirement, an air quality analysis may be conducted quantitatively or qualitatively.

Currently, all air quality studies are done by consultants and reviewed by the air quality specialist located in the Central Geo-Environmental Section in Salem.

## ***LAND USE PLANNING***

Since 1973, Oregon has maintained a strong statewide program for land use planning. Oregon's standards for land use planning are set forth in 19 statements formally called the Statewide Planning Goals.

These goals establish broad policies that must be addressed through local comprehensive land use planning. All of Oregon's cities and counties must adopt comprehensive plans, zoning and land-division ordinances consistent with the Statewide Planning Goals.

Under Oregon’s planning laws, all of the cities and counties must have their land use plans and ordinances reviewed and approved by the Land Conservation and Development Commission (LCDC). With acknowledgment, a local plan becomes the controlling document for land use decisions in the area. All 276 city and county plans in Oregon have been reviewed and acknowledged by LCDC. The result is a mosaic of state-approved local comprehensive plans that governs land use of privately owned land throughout Oregon.

Every project must comply with statewide planning goals - especially goals for protecting farm and forest lands. A concerted effort to make sure the proposed action is consistent with the Comprehensive Plan, zoning ordinances, and Transportation System Plan. Goal exceptions (proposed action is inconsistent with not allowed by Comprehensive Plan) can be lengthy, and usually occur during the project development phase.

## *SOCIO-ECONOMICS*

This category is not necessarily intuitive under “Environmental,” but is becoming an increasingly important subject area. We can have a variety of social and economic impacts with our projects - even Class 2 types. Some of these impacts are minor and temporary, but others more far-reaching.

Some of the most common and important issues we need to understand and look out for include:

- Community cohesion - a reality that most don’t consider - related to [CS<sup>3</sup>](#)
- Environmental justice - low income and minority populations
- Economics - effects to businesses and the local economy
- Tax base - reduction of property tax base
- Construction effect - disruption

For EAs and EISs, a Socio-Economic Technical Report must be prepared. When we have negative socio-economic effects, mitigation could be required. The OTIA III State Bridge Delivery Program developed a process for determining low income and minority populations. It is available at the [Oregon Bridge Delivery Partners’ Web site](#).

For information about project lifecycle Title VI and Environmental Justice considerations, visit the [Title VI Plan](#) at Oregon.gov/ODOT/CS/Civil Rights.

## *EROSION AND SEDIMENT CONTROL*

Erosion is a natural process by which soil and rock material is loosened and transported. Erosion by the action of water, wind, and ice has produced some of the most spectacular landscapes. Natural erosion occurs primarily on a geologic time scale, but when human activities alter the landscape, the process of erosion can be greatly accelerated. Construction site erosion causes serious and costly problems, both on-site and off-site. The soil erosion process begins by water falling as raindrops and flowing over the soil surface.

When land is disturbed at a construction site, the erosion rate accelerates dramatically. Since ground cover on an undisturbed site protects the surface, the removal of that cover increases the site's susceptibility to erosion. Disturbed land may have an erosion rate 1,000 times greater than the pre-construction rate. The erosion we're most concerned about is the displacement and movement of soil particles. Even though the process of construction requires that land be left bare for periods of time, proper planning and use of erosion control measures can reduce the impact of man-induced accelerated erosion.

Air and water pollution can result from the release of chemicals, waste materials, and soils into air or water. Soil that erodes from construction sites and is discharged into water is pollution. The term pollution control refers to methods and procedures used to prevent pollution of air and surface waters.

Water pollution in the United States is regulated under the Federal Water Pollution Control Act of 1972, now known as the Clean Water Act (CWA). The CWA originally emphasized control of point source pollution. Point source pollution is discharged through discrete conveyance, typically through a pipe from an industrial or municipal facility. In 1987 Congress amended the CWA to include non-point sources of pollution. Non-point pollution occurs when runoff from land carries pollutants to receiving waters. Section 402 of the CWA provides the legal basis for the National Pollutant Discharge Elimination System (NPDES) permit program, which regulates point and non-point discharges.

The EPA has delegated the implementation of the NPDES program to the state of Oregon. The Oregon Department of Environmental Quality administers the NPDES program through Oregon Revised Statute 468B. The Statute prohibits the discharge or placement of wastes into waters of the state, prohibits the discharge of waste that causes violations of water quality standards, and prohibits violations permit conditions.

ODOT holds several NPDES permits, including the 1200-CA general construction permit, which requires a site specific erosion control plan for construction activities which disturb a total of 1 acre or more. The general construction permit also requires control of construction site pollutants other than sediment, such as oil, gasoline and solvents. In addition to federal requirements, many local jurisdictions have developed storm water management programs that include erosion and sediment control requirements.

In order to prevent pollution associated with erosion from its construction projects and meet local, state and federal requirements, ODOT requires an Erosion and Sediment Control Plan (ESCP) for each project. ODOT usually prepares the ESCP, which is implemented by the contractor during construction. For projects having minimal soil disturbance, ODOT may specify that the contractor develops the ESCP.

The ESCP is intended to provide adequate measures to minimize erosion, and to control sediment resulting from construction activities within the project boundaries.

Erosion control begins in project planning and continues until soil has permanent protection. Even though most ODOT contract documents appear to be well done, erosion problems are still common. Problems can originate from many project areas, so we need to pay attention to the whole project. On projects, requirements are usually spelled out in permits and environmental documents. Environmental specialists and erosion control designers are responsible for ensuring that projects meet all applicable requirements.

## ***FLOODPLAINS***

Executive Order 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities" for the following actions

- Acquiring, managing, and disposing of federal lands and facilities
- Providing federally-undertaken, financed, or assisted construction and improvements
- Conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities

The following guidelines address an eight-step process that agencies should carry out as part of their decision-making on projects that have potential impacts to or within the floodplain.

- Determine if a proposed action is in the base floodplain (that area which has a one percent or greater chance of flooding in any given year)
- Conduct early public review, including public notice
- Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside of the floodplain.
- Identify impacts of the proposed action
- If impacts cannot be avoided, develop measures to minimize the impacts and restore and preserve the floodplain, as appropriate
- Reevaluate alternatives
- Present the findings and a public explanation
- Implement the action

Some locations require a “No-Rise” be demonstrated due to local ordinances.

A violation on a single project can affect ODOT’s ability to deliver permits which are region-wide.

You can gain access to a limited number of floodplain maps through the region or Geo-Environmental Services. You should get the most recent copies of maps and studies from FEMA or local floodplain management agencies (cities and counties).

## ***CLOSING***

None of the geo-environmental requirements that have been covered should result in decreased safety or poor engineering. But, at the same time we’re solving safety and operational problems, we should also be actively thinking about an environmental approach of AVOID (first), MINIMIZE, then MITIGATE.

In accordance with ODOT’s commitment to environmental excellence and CS3, we should be looking for opportunities to improve environmental conditions - whether or not there is a hard requirement to do so. In a manner of speaking, this can translate to “leaving the project area better than you found it.” This applies not only to natural resource issues, but also aesthetics and the built environment.

You may perceive that changes to project design are too minor to warrant new attention from Geo-Environmental, but you really should check this out with your regional Environmental Coordinator (REC), Environmental Project

Manager (EPM), or the Geo-Environmental Manager. Scope creep can definitely lead to project delays and increased costs.

If critical issues are missed or ignored, delays in project development will probably occur. It pays to address geo-environmental problems early in the process and to be thorough during project scoping.

Missing critical issues can mean delays, but also unanticipated financial costs for mitigation. Mitigation may be much more costly than you'd imagine, so it pays to have made the right choices along the way during project development.

For project development associated with EAs and EISs, you must always use an objective and interdisciplinary approach for narrowing alternatives. There is a great deal of case law showing that if reasonable alternatives are unreasonably dismissed, you will probably end up starting over from scratch.

Your first line of defense for Geo-Environmental issues should be your Technical Center staff. The HQ Geo-Environmental Section is also available to assist you for particularly nasty or complex situations.