

DEPARTMENT OF ENVIRONMENTAL QUALITY  
LAND USE GUIDELINES FOR ENVIRONMENTAL COMPLIANCE

INTRODUCTION: This document is intended to supplement Department of Land Conservation and Development (DLCD) guidelines to local governments on Periodic Review. The information provided below will assist cities and counties that are updating comprehensive planning documents in compliance with DEQ rules to protect Oregon's environment.

Each category includes a presentation of the relevant issue followed by recommendations for compliance through land use programs and plan updates. In addition, DEQ staff contacts are provided as a source for additional information and data.

DLCD administrative rule (OAR 660-30-005) allows for input from state agencies into the local government land use planning process. The purpose of this rule is to ensure that state agency rules and programs that affect land use are compatible with acknowledged city and county comprehensive plans. Rules or programs that affect land use include those referenced in the statewide planning goals and those that can reasonably be expected to have an effect on resources, objectives, or areas identified in the goals or in acknowledged comprehensive plans.

## AIR QUALITY

### Non-Attainment Areas

Issue: DEQ designates non-attainment areas for locations that violate Clean Air Act standards for one or more pollutants. Existing particulate non-attainment areas include Eugene/Springfield, Grants Pass, Klamath Falls, La Grande, Medford-Ashland and Oakridge, Portland, and Salem. Portland and Salem are non-attainment areas for ozone and carbon monoxide, and Eugene/Springfield is also a non-attainment area for carbon monoxide.

Recommendation: The plan document should include a discussion of non-attainment status and identify local actions or proposals to implement the Non-Attainment Area Management Plan. The plan should also describe how the jurisdiction coordinates and cooperates with other jurisdictions within the designated non-attainment area.

The jurisdiction should compare current population and traffic growth data and forecasts to the current projections in the State Air Quality Implementation Plan. If there are significant differences, the data should be submitted to DEQ for a revisit of the air quality analyses. For information contact Brian Finneran 229-6278.

### Class 1 Wilderness Areas and National Parks

Issue: Air quality in Wilderness Areas and National Parks is afforded additional protection under the Clean Air Act to preserve vistas and protect the environment. The Prevention of Significant Deterioration (PSD) provision of the Clean Air Act was established for this purpose.

Recommendation: The plan should acknowledge the jurisdiction's proximity to any designated class 1 areas and acknowledge that certain industries are subject to additional Prevention of Significant Deterioration air quality visibility criteria. The PSD criteria is applied in the permitting process to certain industries that have the potential to degrade air quality of a designated class 1 area. DEQ conducts computer modeling of proposed new air sources or changes to existing sources to determine if PSD criteria apply. In general certain new sources within 200 kilometers of a designated class 1 area, or further in distance based on the type of facility, fall under PSD requirements. For further information contact Brian Finneran at 229-6278.

## WATER QUALITY

### Goal 5 Resources

Issue: The purpose of Goal 5 is to conserve open space and protect natural and scenic resources. Available data is gathered to determine if a particular natural resource is "ecologically and scientifically significant" or if an open space is "needed" or in the case of scenic areas if they are "outstanding". The inventory should include a determination of the location, quality, and quantity of each resource site.

### Sensitive Groundwater Areas

Issue: Sensitive aquifers in Oregon are sources of groundwater that are susceptible to contamination from land uses on the surface. Susceptibility is based on many factors including permeability, porosity and absorption potential of soils, depth to groundwater, and the presence of improperly sealed wells, drainage wells (sumps), leaky underground storage tanks, or other potential contaminant sources. Shallow aquifers lie less than 100 feet below the surface leaving them vulnerable to pollution from overlying land uses. For example, sand and gravel deposits located near old stream beds allow hazardous material spills to quickly penetrate an aquifer. A spill of hazardous material in eastern Oregon was revealed in groundwater samples three months later. Spills or leaks in areas with more permeable soils or shallower groundwater supplies might lead to immediate groundwater contamination and spills in areas with less permeable soils and deeper or confined aquifers could take years to affect groundwater quality.

Direct sources of pollution such as industrial wastewater discharges and non-point sources of pollution such as heavily fertilized agricultural land or large numbers of densely located septic systems, can easily contaminate shallow public and private wells.

In 1980 Sweet/Edwards consultants produced a map of sensitive aquifers in Oregon. This map, with an overlay of the median static head of groundwater in the area (tabulated by township, range, section from available well data) is available from DEQ. The median static head measurement gives an indication of the general depth to groundwater below the land surface and thus is an indicator of aquifer vulnerability to contamination sources at the surface. Maps with locations of public water supply wells are also available from the DEQ.

The DEQ also has information regarding groundwater contamination detected in various areas of Oregon where samples have been collected. A summary of this information can be found in Table 6 of the 1999 Legislative Report on Groundwater Quality Protection in Oregon which is available in hard copy from Donna Kelly at DEQ 503-229-6962 or through the Department's Internet site at <http://waterquality.deq.state.or.us/wq/groundwa/wggw.htm>. Figure 9 of the Legislative report

shows the percentage of private water wells per county with nitrates above the EPA drinking water standards. This data reflects private wells sampled at property transfer through the real estate transaction testing program run by the Oregon Health Division. Counties not included in Figure 9 did not have any wells with nitrate detection above the drinking water standard of 10 ppm Nitrate-Nitrogen, but may have had nitrate detection below that level. For more detail about groundwater quality investigations in your county, contact Rodney Weick at 503-229-5886.

Recommendation: The plan should identify the location of sensitive aquifers and note potential sources of pollution. Discuss the proposed pollution prevention program including changes in land use, zoning, density, and permitting requirements. Questions can be directed to Amy Patton at 503-229-5878.

## Groundwater Management Areas

Issue: DEQ is required to declare a Groundwater Management Area (GWMA) when area-wide contamination is documented as caused at least in part by nonpoint sources. When a GWMA is declared, a local committee is formed to develop an action plan to address the sources of the groundwater contamination.

To date two GWMA's have been declared in Oregon: in the Hermiston-Boardman area (Lower Umatilla Basin) and in the Ontario-Vale area (Northern Malheur County). A third area in the Coburg-Junction City-Harrisburg area is expected to be declared in the future. A Groundwater Area of Concern (AOC) may also be declared and managed locally in areas with widespread nonpoint source contamination where the contamination has not yet reached high concentrations. The procedures for GWMA and AOC declaration and response are outlined in ORS 468B.177 through 468B.188.

Recommendation: The land use plan should recognize groundwater management areas and map them along with the boundaries of sensitive aquifers. The plan needs to address any land use components of the local action plan and planned efforts to mitigate further groundwater quality problems. A list of potential contaminant sources and information on recommended groundwater protection options are available from Sheree Stewart at 229-5413. For information on GWMA's call Rodney Weick at 503-229-5886.

## Wellhead Protection Areas

Issue: Wellhead Protection is designed to protect groundwater resources that provide drinking water via public water supply wells. This program originated from the 1986 Federal Safe Drinking Water Act and is referenced in the Oregon Groundwater Protection Act of 1989. Oregon DEQ administers the Oregon Wellhead Protection Program. The Oregon Health Division (OHD) also provides technical assistance to help delineate the source area for the public water supply well(s) or spring(s). A detailed guidance manual is available from DEQ by calling Sheree Stewart at (503) 229-5413.

Jurisdictions need to protect the quality of the groundwater that supplies their public water system. It is extremely expensive to treat contaminated drinking water or to find an alternative source should a water supply be lost because of contamination. It will continue to be more and more difficult to find funding to address contamination of these water supplies. The cost and burden of treating or replacing the contaminated water supply will generally fall to the local

community. To reduce the risk of contamination, a jurisdiction can determine the land surface area where their drinking water originates, what kind and how many potential contamination sources are within that area, and develop a management approach to reduce the risks of groundwater from those sources.

This is a voluntary program in Oregon, which each community can choose to participate in. There are no requirements associated with land use for most of the communities in Oregon. However, for public water systems which serve more than 10,000 or have more than 3000 service connections, there are some land use requirements to be aware of. If the community chooses to delineate their wellhead protection area and have it approved by OHD, the wellhead protection area will become a Goal 5 Resource to be addressed under the land use program. Those (larger) communities will need to incorporate land use planning elements into their wellhead protection management plan. A DEQ-certified Wellhead Protection Plan will automatically serve to address any Goal 5 protection requirements. More information on these requirements can be obtained from Doug White at the Department of Land Conservation and Development at (503) 373-0083.

Jurisdictions need to also carefully plan the location of future public supply wells in relation to potential and known areas of groundwater pollution, areas of known or suspected contamination, and sites noted on the DEQ Environmental Cleanup Site Discovery list. Locating public water supply wells in or adjacent to areas of known pollution problems is not advised. The pollution plume from a contaminated site can travel with groundwater across property boundaries where it can be pumped to the surface by water supply wells. Land uses surrounding these wells and their recharge areas should be designated to protect this natural resource. For example, depending on local conditions, industrial land uses are generally incompatible with groundwater recharge areas. It is strongly suggested that new public water supply wells and wellfields not be located near areas with known groundwater quality problems.

Recommendation: The plan should include a list of public water suppliers who use groundwater as a drinking water source. A list of suppliers by county is available through Dennis Nelson of OHD at 731-4010. The location of public water supply wells should be identified on a map and designated as a 1B resource under Goal 5. Jurisdictions with delineated wellhead protection areas, approved by OHD, should discuss them in the plan. Significant (larger) jurisdictions will need to indicate how they intend to address the land use elements associated with wellhead protection.

The plan should include a discussion of drinking water sources located in the jurisdiction and any water quality problems identified by the OHD or DEQ. The plan should note how the jurisdiction will mitigate or prevent groundwater quality problems within their wellhead protection areas. Information on recommended groundwater protection options, as well as more information about Wellhead Protection, are available from DEQ by calling Sheree Stewart at (503) 229-5413.

## Stormwater and Flooding Management

Issue: Oregon has recently experienced rapid growth which, when coupled with heavy rainfall, has led to flooding event in 1996 and 1997. Developed land increases the amount of runoff being discharged to streams (by a factor of three) over open land. In addition, upstream development has been allowed to occur without regard for existing downstream land owners, creating expensive downstream cumulative impacts and water quality concerns.

Problems identified by the Governor's Interagency Hazard Mitigation Team include constrictions in stream flow paths, (older bridges, use of box cars as private bridges, culverts that decrease in size downstream instead of increase, improperly located dams, ponds and retention facilities, landslides associated with logging, road building and development allowed on steep slopes, improper development allowed in flood plains, inadequately maintained and designed levees, and inadequately sized stormwater facilities). Additionally, inadequate erosion and sediment controls have allowed accelerated rates of deposition in wetlands, streams, rivers, lakes and drainage facilities. Many jurisdictions did not comply with floodplain ordinances or utilize information about basic stream hydrology. Setback requirements near watercourses were sometimes not applied and new residential construction was allowed in floodways.

Until recently, stormwater management planning was based on flood control objectives. However, the need to control the quality of stormwater has become more important due to its impact (degradation) on surface and groundwater resources. Overall planning objectives need to focus on the identification of solutions that balance water quality, natural resource protection and flood control. Planning is needed at a regional level with potential down stream impacts identified early on. Management strategies need to meet a number of objectives including water quality enhancement, groundwater recharge, wild life habitat, wetland creation, erosion/sediment control, and the creation of open spaces for recreation. Designs should incorporate use of natural features(drainage ways, depressions, wetlands, floodplains, groundwater recharge zones and vegetation), which will maximize the economic and environmental benefits, particularly in combination with open space and recreational needs. .

Development in general increases peak stream flows, the duration of high flows, stormwater runoff volumes and creates seasonal flow shifts. This creates ecological and economic impacts such as increased flooding and storm erosion, degraded aquatic habitat and water quality and can result in loss of local flora and fauna species. According to USGS studies, there is a strong correlation between the size of the flood peaks and the available basin storage. Natural wetlands and side channels act as storage areas during flood events, lowering the water to spread out. This temporary storage decreases the runoff velocity, reduces flood peaks, and distributes stormwater flow over longer periods of time causing tributaries and main channels to peak at different times. Continued loss of upland or upstream wetlands, side channels, meanders and flood plains over time exacerbates the situation. USGS studies have found that basins with 30% areal coverage in lakes, side channels or wetlands have flood peaks 60 to 80% lower than basins with little storage.

Pollutants associated with stormwater runoff include: toxic heavy metals (cadmium, chromium, copper, lead, nickel and zinc), toxic organics (gasoline, oils, wood preservatives), nutrients (nitrates and phosphorus), pesticides (municipal and residential use), PAH (organic associated with industrial sites in sandy soils and high water table), other metals (aluminum, manganese, iron), salts, and micro-organisms (viruses and bacteria). About 70% of the toxic metals will bind to sediments and the remainder stays in the water column. Bioaccumulation and long term exposure from contaminated sediments is of concern when sediments are deposited downstream in lakes, wetlands and estuaries.

Previous EPA studies found that the primary area of concern is industrial land, followed by commercial and residential lands. However, recent studies have found urban hot spots exist which produce significantly higher loadings of hydrocarbons and metals than other areas.

Urban hot spots are linked to locations where vehicles are fueled, serviced, and parked. Identified land uses include gas stations, bus depots, fire stations, vehicle maintenance, salvage yards, long term commuter parking lots, and high use short term parking lots associated with fast food outlets and convenience stores. Other areas of concern include heavily used roads, which generate a disproportionate amount of total runoff volume and are often directly connected to the drainage system.

Recommendations: Cities and counties need to develop comprehensive water management plans that integrate flood control, erosion control, nonpoint source pollution prevention, groundwater and source water protection, while protecting sensitive natural resources areas such as wetlands, water quality limited streams and salmonid habitat.

Jurisdictions should promote reclamation or construction of wetlands, remove floodplain development allowing streams room to meander, reconnect side channels or build detention basins for flood control. Wetlands are the most effective form of flood control and can be cheaper to create and maintain than dikes, levees or reservoirs. Vegetation removal increases erosion loss in the floodplain. Failure to understand the dynamics of waterways in zoning, facility planning and development has resulted in damage to public lands and conflicts which need to be addressed in watershed planning. Floodplain hazard and hydrology flow studies need to be done for all proposed developments, otherwise they can impact both upstream (if they act as a constriction) and downstream residents. DEQ recommends hydrology studies be done for new developments ½ mile upstream and 1 mile downstream to protect existing downstream residents. Additional discharges from seeps, springs, on-site systems and stormwater in unstable slopes can trigger landslides.

Erosion Sediment Control ordinances (ESC) need to be integrated to achieve stream protection during construction and to protect water quality. Suggested resources related to construction practices, practical pollution prevention tips, best management practices, and design suggestions include: 1) Watershed Protection Technique Bulletins published by the Center for Watershed Protection at (301) 589-1890 or [www.pipeline.com/~mrrunoff](http://www.pipeline.com/~mrrunoff) on the internet for a review; 2) the Puget Sound Stormwater Management Manual; 3) King County Washington's Surface Water Management Plan and 4) Coastal Nonpoint Source Pollution Control Program Management Measures. For more information contact Barbara Priest at 229-5945 or Ranei Nomura at 229-5657.

#### Underground Injection Control (UIC) Program.

Issue: The UIC program is regulated under the Safe Drinking Water Act. The intent of the program is to protect groundwater drinking water sources from pollution associated with untreated discharge by infiltration. Class V injection wells (for stormwater discharge) are becoming a nationwide concern. This is due to the growing numbers of groundwater aquifers that are becoming contaminated due to polluted stormwater associated with the use of catch basins with sumps and dry wells for infiltration.

Recommendation: Federal law requires that injection well owners are required to register their well with the state (CFR 40:144.24 and .26) and provide inventory information prior to use. In Oregon, stormwater drains from residential and commercial areas when not affected by toxic or industrial wastes, are authorized by rule if they can meet the following conditions. Otherwise an individual WPCF permit is required:

- 1) Stormwater drainage wells can only be used in areas where there is an adequate confinement barrier or filtration medium between the injection well and the drinking water aquifer, and where construction of stormwater sewers is not practical.
- 2) New stormwater drainage wells shall be as shallow as possible, and not exceed 100 feet.
- 3) Stormwater drainage wells (i.e. catch basins with sumps, drywells) cannot be located closer than 500 feet to any drinking water well.
- 4) Agricultural drainage wells are prohibited.
- 5) Stormwater drainage wells are prohibited where toxic or hazardous chemicals or petroleum products are stored or handled, unless there is containment around the product area preventing spillage or leakage to the well.
- 6) Owners and operators of stormwater wells shall have a means to temporarily plug or block the well in the event of an accident or spill.
- 7) If a stormwater well is located in a parking lot, the lot shall be kept clean of petroleum products and other organic or chemical wastes.

For further information contact Barbara Priest at 229-5945.

#### Water Quality Limited Streams (Potential or Designated)

Issue: Rivers, streams, and other waterbodies provide water for municipalities, industry, recreation, agriculture, salmonid habitat and wildlife. DEQ is responsible for setting limits on all pollutants entering a waterbody under the Federal Clean Water Act of 1972. On a biennial basis, DEQ must submit to EPA a list of waterbodies (303d) that do not meet water quality standards, even after best available technology is applied to wastewater discharges. Data is compiled from federal, state and local data bases for listings and waterbodies listed are designated as Water Quality Limited (WQL).

While great progress has been made over the last two decades to reduce pollution from industrial sources, Oregon's surface and groundwater quality is under constant threat from an increased population, recreation, development, agriculture, urban runoff and destruction of streamside habitat. Once polluted, surface and groundwater is very difficult to clean up, taking years to restore to within water quality standards.

New or increased discharges that require a permit will not be allowed in WQL waterbodies unless the pollutants in the discharges are different from the pollutants causing the water quality problems. By recognizing the types of land uses or practices associated with specific pollutants planners can shift certain development or activities to other locations where water quality impacts are not anticipated or can be controlled.

WQL listed waterbodies will be prioritized over the next year and DEQ will begin to develop Total Maximum Daily Loads (TMDLs) and a management strategy for the listed waterbodies. TMDL waterbodies have reached their assimilative capacity and can no longer handle additional pollution loading. A TMDL can be set for one particular pollutant, indicating that the waterbody is unable to accommodate additional sources due to cumulative effects. An individual waterbody can have several different TMDLs for each pollutant.

Due to the number of WQL waters, DEQ will focus available grant funds in basins with approved TMDLs and those ranking high on the priority list. The following WQL water bodies have been identified as the highest priority: S. Umpqua/Umpqua River, Willamette River, Klamath River,

Umatilla River, Trout Creek (Deschutes), Upper Deschutes, Fifteen Mile Creek (Hood), Tualatin River, Sprague River, Rogue River, Yamhill River, Tillamook Bay and major tributaries, Nehalem Bay and River, Coquille River, Pudding River, Breitenbush River, John Day (N, M and S forks), Hood River, Little Deschutes River, Coast Fork of the Willamette, Yaquina Bay, White River (Deschutes), Crooked River (Deschutes), Bear Creek (Rogue), Powder River, Malheur River, Burnt River (N. fork), Wallowa River, Grande Ronde River, Elk Creek (Umpqua), Coos Bay, Garrison Lake, Devils Lake, Clear Lake, Tenmile Lake, and Clatsop County Lakes.

DEQ will actively encourage local watersheds to voluntarily begin to prepare management plans to control point and non point pollution in WQL waterbodies.

DEQ has established TMDLs for the following basins: Bear Creek, Yamhill River, Tualatin River/Lake Oswego, Pudding River, Willamette River, Rickerall Creek, Columbia River, Coquille River/Estuary, Clear Lake and Garrison Lake. TMDLs in progress for 1996-98 include the Grande Ronde River, Columbia Slough, Klamath River, Umatilla River, and the South Umpqua River

TMDL/WQLs are set for the following parameters: aquatic weeds/algae, bacteria (fecal coliform and E. Coli), biological criteria, chlorophyll, dissolved oxygen, habitat modification, flow modification, nutrients, pH, sedimentation, temperature, total dissolved gas, toxics, and turbidity. These parameters are used to identify impaired beneficial uses of the water body, a more complete discussion of these parameters can be found in the July 1996 303D list and criteria for listing waterbodies.

Recommendation: Land use planners should note the types of water quality problems cited in their area for the parameters listed above. For example:

**Sediment:** If sediment is a problem then local governments should require erosion controls for upgrades of existing and new developments, including construction activities and runoff from the completed project. Each site should be required to implement more stringent erosion control plans. Wherever possible, new development should provide treatment of the runoff that will be generated by that development. If exceptions are granted for a specific site, there must be assurance that an equivalent amount of pollution will be removed elsewhere in the basin. Replanting of native vegetation and trees is critical once development has occurred.

The land use plan should include provisions to minimize the amount of exposed soil during site development or other earth disturbing activities. The site should be designed and constructed to reduce runoff by limiting impervious surfaces. Runoff that is generated should be directed to swales or retention ponds to encourage infiltration. Stormwater runoff must be treated prior to discharge to waters of the state. A vegetated buffer (25 to 100 foot) should be required between development and all streams, wetlands, ponds, and other waterbodies. Vegetation and trees should be maintained in all roadside ditches, effectively converting them into vegetated swales. This practice will remove sediments as the rate of runoff is reduced. Other practices that could be employed include the use of bio-engineering, barbs weirs, jetties and as last resort, riprap for erosion problems.

**Fecal Coliform:** Fecal coliform is usually associated with untreated stormwater discharges in urban and rural areas, inappropriate densities of septic tanks or failing septic systems, and rural grazing practices. These discharges can create a health problem for downstream drinking water



users, contract recreational sports (boating and swimming), shellfish propagation, irrigators and commercial users. If fecal coliform is a problem land use planners may want to review the density requirements for septic systems, zoning restrictions for confined animal feed lots, and upgrades to stormwater runoff in urban areas.

**Temperature:** Temperature problems relate to a variety of changes to waterbodies from flow modifications such as dams/diversions, removal of woody debris or tree cover, as well as industrial discharges and loss of riparian habitat. Temperature changes can limit the types of plants, fish and wildlife found in a given area. Limiting the removal of natural native plants and trees or requiring replanting after development can assist in limiting temperature changes.

The plan should list local WQL or TMDL waterbodies and map them with an overlay of existing zoning and available land for development. The plan should identify pollution prevention strategies and commit the local government to participation in the TMDL process. For information on the program contact Rick Kepler at 229-6804. For copy of the DEQ biennial water quality (305B) report on status of streams and lakes contact Joyce Sturdevant at 229-6504. For information on pollution prevention, contact Barbara Priest at 503-229-5945.

### Wetland and Riparian Protection (Water Quality Certification)

**Issue:** Natural wetlands are protected waters of the state under the Clean Water Act. In Oregon, wetlands cover little more than 2% of the state or between 1.2 to 1.5 million acres. Certification is required of any applicant for a federal license or permit to conduct any activity, including but not limited to the construction or operation of facilities that may result in any discharge to waters of the state.

Wetlands exist in areas with high water tables acting as natural reservoirs while recharging groundwater and can seasonally discharge to surface water. Wetlands and streamside (riparian) areas: function as a natural filtering system to improve water quality; are used as spawning and nurseries for fisheries; provide critical habitat for wildlife and birds; reduce soil erosion; mitigate storm damage and flooding; recharge local groundwater supplies; and, provide a unique ecological resource supporting an incredible diversity of life. Wetlands and riparian areas also provide opportunities for recreational activities such as boating, hiking, hunting, fishing, and bird-watching. Approximately 1/3 of the nations threatened and endangered species live in wetland areas.

DEQ's role regarding wetlands, riparian and in-stream work is to protect water quality and existing associated beneficial uses pursuant to Section 401 of the Clean Water Act. This mandate applies to the State's hydrologically connected groundwater, wetlands, estuaries and surface waters of Oregon. Groundwater is also protected under the Safe Drinking Water Act and Oregon's Groundwater Act. Natural wetlands or those created to replace existing wetlands as mitigation, cannot be used for stormwater treatment or to discharge polluted water. The purpose of the 401 program is to protect and maintain the remaining wetland and riparian resources in Oregon from development impacts by directing growth away from these fragile resources to more appropriate locations. When development impacts are unavoidable, mitigation is required within the same basin. Stormwater discharges to wetland or riparian areas in water quality limited basins may require treatment prior to discharge.

401 Certification is done concurrently with Division of State Lands (DSL) Removal and Fill program and the Federal 402/404 permits under the Clean Water Act regulated by the US Corps

of Engineers. Conditions applied to 401 Certification address water quality standards (anti-degradation and water quality limited streams), beneficial uses, impacts to groundwater resources, and threatened and endangered species. The conditions can be site or land use specific to prevent pollution.

Existing water quality standards and state regulations (OAR 340-48) currently do not contain wetland/riparian-specific language. DEQ is beginning the process of revising rules and preparing preliminary draft guidelines for developers. These guidelines will be applicable to all activities, projects, or proposed developments of wetland/riparian areas.

Recommendation: Land Use Planning Goal 5 now requires wetland and riparian inventories and the development of programs to achieve the goal. Wetland planning can help achieve water quality protection as well as minimize regulatory conflicts. Jurisdictions should contact DSL for technical and financial assistance with wetland planning, and coordinate wetland/riparian inventories with stormwater master planning efforts.

Questions relating to DEQ's wetland/riparian responsibilities can be directed to Tom Melville at 229-5845 and grazing issues to Debra Sturdevant at 229-6691. Information on the wetland planning program can be obtained from Dana Field with DSL at 378-3805, extension 238.

## Lakes

Issue: There are over 6,000 lakes in Oregon ranging in size from 1 acre up to 90,000 acres. They have been divided into categories called "ecoregions" based on location and physical characteristics. Data is available on lake water quality through the Environmental Protection Agency's Clean Lakes Program. Additional studies have been conducted by the U.S. Forest Service and the Army Corp of Engineers. Development, recreational uses, nuisance weed growth, and nutrient loading, are among the threats to lake water quality. TMDLs have been established for Oswego Lake, Garrison Lake, and Clear Lake. (See discussion under TMDL Recommendations on page 4)

Recommendation: The plan should include an inventory of lakes in your jurisdiction. Indicate lakes with water quality problems and develop strategies for pollution prevention. A full inventory of water quality problems related to lakes is available from DEQ in the biennial water quality (305B) report, for a copy of this report contact Wanda Stovall at 229-5279. For information on DEQ's Clean Lake program contact Avis Newell at 229-6018.

## Estuaries

Issue: Estuaries are found where river systems meet the ocean and interact with tidal flow. These highly productive biological areas provide spawning, nursery, and rearing habitat for a variety of wildlife including many of Oregon's fish and shellfish resources. These areas are subjected to pollution from the immediate shoreline, upstream sources and in some cases, from contaminated groundwater. Excess nutrients, bacteria, sediment, and toxic contaminants, often degrade estuarine water quality and diminish estuarine resources.

Marinas, houseboats, liveaboards, and shipyards, can contribute bacteria, nutrients, heavy metals, and toxic contaminants. Bacteria and nutrients can also be contributed from farms,

confined animal feeding operations, on-site septic systems, waste treatment plants, and combined sewer overflows (CSOs).

Activities such as forest management and logging, recreational off-road vehicle use, and in-stream mining can contribute pesticides and heavy sediment loads which can damage estuarine habitat and effect navigation. Other sources of toxic contaminants include municipal and industrial discharges, CSOs, and stormwater runoff from industry and urban development.

Recommendation: Estuaries are fragile ecosystems that can be easily impacted by adjacent and upstream land uses and activities. A comprehensive planning approach is required to address the various sources of pollution problems found in estuarine environments. The unique attributes of estuaries may warrant implementation of a protective overlay zone requiring additional review of development and land use proposals.

Water quality problems in estuaries result from many different sources including; non-point sources, septic tank failures, TMDLs, wastewater treatment plant discharges and groundwater issues.

For requirements related to stormwater management, contact Barbara Priest at 229-5945. For CSO related issues, contact DEQ Municipal Waste section at 229-6099.

## Nonpoint Source Planning

Issue: Nonpoint pollution has received increased attention based on recognition of the pollution loads contributed to the environment from these sources. Sources of non-point pollution include agriculture, forestry, on-site septic systems, and urban runoff that discharge pollution in the form of suspended solids, sediments, and nutrients. These pollutants enter surface water and groundwater in a diffuse manner and can effect water quality by increasing temperature or altering the pH level.

Recommendation: Coastal communities need to address water quality nonpoint source (NPS) control requirements stemming from Section 6217 of the Coastal Zone Management Act. All areas and land uses in the coastal zone will be required to control NPS pollution. This will be accomplished through application of enforceable management measures, including, where appropriate, local land use plan implementing ordinances.

All plans should discuss land use contributions to nonpoint sources of pollution as described by DEQ's 1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution. Provisions in the plan should be made for mitigation of NPS pollution. The plan should address control of potential water quality nonpoint source impacts originating from construction sites and activities in riparian zones. Information may be obtained from Roger Wood at DEQ, 229-6893. For coastal communities additional information is available from Jeff Weber at DLCD's Coastal Management Program, 731-4065.

## Oil Spill Contingency Planning

Issue: As mandated by Senate Bill 1039 DEQ must develop a comprehensive contingency plan for oil and hazardous materials spills for the Oregon coast and estuaries, the Columbia River, and the Willamette River to Willamette Falls.

Recommendation: The DEQ suggests that comprehensive plans recognize local and state responsibilities regarding oil spill planning. The plan should acknowledge the process triggered by notification of the Oregon Emergency Management Division (1-800-452-0311) that a spill has occurred. The Division notifies the designated county emergency manager and responsible state agency, for instance the DEQ for oil spills into waterbodies or the State Fire Marshall for spills on land. The party responsible for the spill is required to contact the National Response Center at 1-800-424-8802 which notifies affected federal agencies such as EPA or the Coast Guard.

#### ◆ Septic Tank Systems

Issue: On-site sewage systems are a rural technology approach to the treatment and disposal of sewage wastewaters. Specific soil and site criteria are necessary for these systems to function effectively. Residential properties that are less than approximately one-half acre in size may be inappropriate for on-site sewage systems because of public health and environmental concerns.

Recommendation: The plan should address the need for public sewerage facilities when development densities exceed two dwellings units (or equivalent) per acre, or when soil and site conditions prevent the use of on-site sewage treatment and disposal systems. Information regarding on-site sewage system failures is available from the DEQ, contact Sherm Olson at 229-6443.

#### Wastewater Treatment Systems

Issue: The DEQ is responsible for regulating sewage treatment and disposal facilities, which operate under either a National Pollutant Discharge Elimination System (NPDES) permit, or a Water Pollution Control Facilities (WPCF) permit. Although technology-based permit limits are still being incorporated into municipal permits, emphasis is now shifting toward water quality based permits. Permittees are expected to evaluate the impact of discharges on streams and to consider alternatives to discharges. As flows increase, the Department will expect the permittee to improve treatment efficiencies, so there is no net increase in waste loads discharged.

Recommendation: Jurisdictions should evaluate their land use plans with respect for the need to extend and provide public sewerage where smaller or less efficient wastewater treatment facilities may have limited capabilities for providing adequate service. If a facility is at or nearing capacity, or if water quality limits are not being met, consideration should be given to how water quality based standards will be satisfied through facility modification or upgrade. Non-discharge alternatives may be considered which would include the use of treated effluent for beneficial purposes such as land irrigation. The DEQ contact for information on wastewater treatment is Tom Lucas at 229-5065.

#### HAZARDOUS AND SOLID WASTE

##### Landfills

Issue: The capacity of the existing waste disposal site should be examined in relation to its ability to meet the demands of projected growth in residential population, business, and industry.

Recommendation: An analysis of future long term solid waste disposal options should be included in the plan. The analysis should consider the impact of the new Federal RCRA Subtitle D requirements on landfill operations. Jurisdictions should work together to evaluate near and long term disposal needs and options, including costs. The goal is to provide a fair and equitable system of waste disposal to everyone in the county. It is important to consider the impact of recycling and waste reduction programs on future disposal needs. For additional information from DEQ contact Jan Whitworth at 229-6434.

## Solid Waste Collection and Disposal

Issue: Certain materials such as used oil, lead-acid batteries, vehicle bodies, large appliances, and waste tires are banned by statute from solid waste disposal sites.

Recommendation: The plan should address alternatives for handling these materials such as recycling. An example would be a collection and temporary storage area for waste tires at the local landfill, with provisions for periodic removal by a waste tire carrier to a processor or recycler.

It is also suggested that the plan include a policy to encourage alternatives to disposal of household hazardous waste in solid waste disposal sites and sewage facilities, such as collection facilities.

There should be a discussion on how "special wastes" may be disposed of, such as septic, infectious wastes, asbestos, waste tires, etc. It may be appropriate to include these in the land use plan if there is no separate solid waste plan or if the plan does not address special wastes. Questions can be directed to DEQ region staff: Dave Kunz 503-229-5061, Northwest Region; Bob Barrow 543 378-8240 ex 269, Western Region; and Linda Hayes-Gorman 541 388-6146 ex 228, Eastern Region.

## Hazardous Substance Cleanup Sites (Existing and Potential)

Issue: One of the goals of the DEQ is to clean up sites which are contaminated with hazardous wastes, petroleum products, and other hazardous substances. A key step in this process is to identify and track contaminated sites. These tasks are the responsibility of DEQ's Waste Management & Cleanup Division.

Recommendation: DEQ believes that local governments should be aware of the existence of these sites within their jurisdictions and know how to get information about them. This information is especially relevant to local governments during periodic review of local comprehensive land use plans. Local governments may learn about real and potential hazardous substance contaminated sites within their boundaries by referring to one or more lists available through the Waste Management & Cleanup Division. A description of these lists follows:

Environmental Cleanup Site Information (ECSI) List: ECSI is an electronic filing system of sites in Oregon with contamination or potential contamination from hazardous substances. ECSI lists sites by county and/or alphabetically and provides general information about actions which have occurred at these sites. The ECSI list for your county is attached with a list of corresponding action codes and descriptions.

The Confirmed Release List (CRL) and Inventory: The CRL is a list of sites where a release of hazardous substances has been confirmed. In other words, contamination at the site has been substantiated. The Inventory is a list of sites with confirmed releases of hazardous substances which require further investigation and cleanup based on information obtained through preliminary assessments or equivalent reports. The CRL and Inventory provide key information about each site and are updated quarterly.

DEQ first adds sites that are or may be contaminated and may require cleanup to ECSI. Sites are added to the CRL and Inventory when DEQ determines they meet the respective criteria for listing as described above. Sites may be added to the CRL any time after they are added to ECSI; they may be added to the Inventory only after the preliminary assessment or equivalent is completed. Sites added to the Inventory are either already on the CRL or are added to both lists at the same time.

The UST Cleanup List: The Underground Storage Tank (UST) Cleanup list shows sites that have petroleum contamination as a result of leaking underground storage tanks, this list is updated quarterly.

The Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): The United States Environmental Protection Agency (EPA) also produces a nationwide list of sites that may be contaminated by hazardous substances. The list is analogous to DEQ's ECSI. In most cases, sites in Oregon listed on CERCLIS will also be listed on DEQ's ECSI.

For further information about these lists or to obtain copies, contact the Waste Management Division at 503 229-5913.