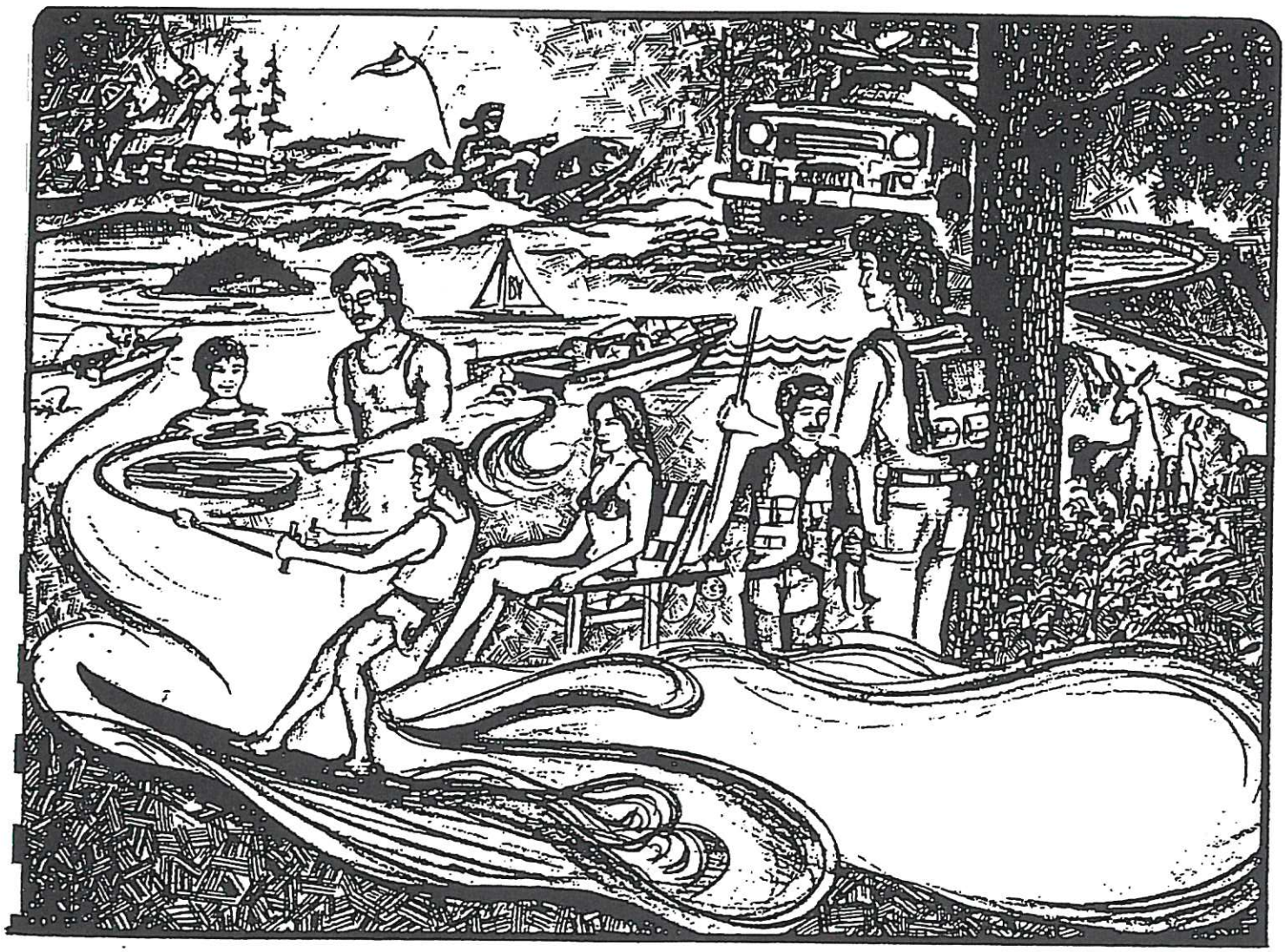

AIR, WATER AND LAND RESOURCES QUALITY

VIII

Detroit
comprehensive plan

VIII: AIR, WATER, AND LAND RESOURCES QUALITY

Oregon's statewide planning goals and guidelines include a goal to maintain and improve the quality of air, water, and land resources of the state. This goal is mainly accomplished by local compliance with state and federal regulations. A variety of state agencies administer resource quality protection programs and maintain databases about resource quality but the lead state agency is the Department of Environmental Quality (DEQ).

The purpose of this section is to briefly summarize existing regulations and information in agency databases regarding land, air, and water quality in the Detroit area. Local governments must comply with, and sometimes enforce, existing regulations and this section is intended to be a quick overview of existing environmental requirements. Requirements are complex and ever changing. DEQ publishes a useful document called *"An Oregon Guide to Environmental Requirements for Local Governments"* (DEQ, 1997).

DEQ regulates the discharge of pollutants into the environment. Currently the following activities will require a permit or plan approval from DEQ or other state agencies:

- Discharging any material into waters of the state;
- Disposal of wastewater to the land surface or injection of wastewater into the ground;
- Discharge of storm water associated with industrial activity, directly or indirectly, through the storm sewers or storm drainage to surface waters;
- Disturbance of five or more acres of land with clearing, grading, excavating, and/or construction activities;
- Removal of friable asbestos-containing material;
- Ownership or operation of a landfill, transfer station, incinerator, or septage lagoon for non-hazardous wastes; and
- Treatment of petroleum contaminated soil from underground storage tank release on-site or off-site.

The following activities may require a permit or plan approval from DEQ or other state agencies:

- Handling or storing petroleum products above ground;
- Discharge of any emission to the air;
- Use of solvents, degreasers, and paint; and gasoline storage by a business;
- Treatment, collection, storage, or disposal of hazardous wastes that are corrosive, toxic, reactive, or ignitable;
- Storage or transport of waste tires;
- Installation or removal of an underground storage tank;
- Construction of a parking lot; and
- Purchase or lease of land for project development (environmental assessment).

Some DEQ permit and plan approval actions affect land uses and, therefore, require a Land Use Compatibility Statement (LUCS) from the city and/or county. The following list of applications must include a LUCS from the affected local government:

- Approval Of Air Quality Notice Of Construction
- Air Contaminant Discharge Permits
- Oregon Title V Air Quality Operating Permit
- Noise Impact Boundaries For Racing Facilities
- Airport Abatement Plan/ Noise Impact Boundaries
- Air Indirect Source Construction Permits.
- Parking And Traffic Circulation Plans
- Solid Waste Disposal Permits/Authorization Letter
- Commercial Composting Facility
- Waste Tire Storage Permits
- Hazardous Waste/Polychlorinated Biphenyl (PCB) Storage, Treatment, And Disposal Permits
- Pollution Control Bond Fund Request
- Wastewater System Facility/Sewer System Plans
- Water Quality Construction Grants
- Municipal Wastewater Treatment System State Revolving Loan Request

- Certification Of Water Quality Standards For Federal Permits
- On-Site Sewer Permits
- Water Discharge Permits: National Pollution Discharge Elimination System (NPDES) And Water Pollution Control Facility (WPCF).

The Oregon Health Division (OHD) requires information about project compatibility with local land use plans and ordinances in the following situations:

- New public water systems
- Major additions, alterations, and extensions of water transmission mains
- Development of new water sources
- Relocation of water treatment or storage facilities.

Additional information and permit assistance for the above activities is available from DEQ's offices in Salem and/or Portland and OHD's offices in Portland or the Marion County Health Department offices in Salem. The following sections present what is known about air, water, and land quality in Detroit and provide more detail about permit requirements.

AIR QUALITY

The Oregon Department of Environmental Quality (DEQ) monitors ambient air quality by a statewide air-quality surveillance network. Air Pollution Index (API) values, based on the monitoring information, are calculated for Portland, Salem, Eugene, Medford, and Bend. The monitoring stations closest to Detroit are located in Salem. These stations continuously monitor for carbon monoxide, ozone, sulfur dioxide, and nitrogen dioxide and particulate levels. Lead samples have also been obtained in Salem. Ambient air quality is related to the amount and types of discharged pollutants and meteorological events (DEQ 2001).

Available data from Salem stations indicates that air quality is generally good (DEQ, 1996). DEQ monitoring records indicate that air quality standards in Salem were not exceeded for ozone, fine particulate matter, or lead; and exceeded for carbon monoxide twice, in 1991 and 1993. In 1994, the summary of API values, categorized as good,

moderate, and unhealthful, showed no unhealthful values for Portland or Eugene, and 74 and 48 moderate values for Portland and Eugene respectively (DEQ, 1995).

Air pollution permits include Air Contaminant Discharge Permits and Oregon Title V Operating Permits, and are dependent on:

- The type of facility proposed
- The amount of emissions
- The type of emissions
- Regional air quality e.g. is the area in "attainment" of existing air quality standards (DEQ, 1996).

Activities that typically require a permit include asphalt plants, incinerators, grain elevators, rock crushers, boilers, and other major sources of air pollution. In general, facilities that emit more than ten (10) tons of pollutants per year require a permit and facilities that emit more than 100 tons of pollutants per year require a permit and must meet standards that are more stringent. Interested persons should contact DEQ for more information and assistance regarding air contaminant discharge permits.

The DEQ maintains a database of Air Contaminant Discharge Permits (ACDP). Facilities that emit over certain levels of particulates, carbon monoxides, nitrogen oxides, sulfur dioxide, or volatile organic compounds are required to obtain a discharge permit. There are no ACDP listed in the DEQ database for Detroit.

Other local air quality concerns can include asbestos; outdoor burning, dust and fugitive emissions, chlorofluorocarbons, and wood stove pollution.

- DEQ regulates demolition, renovation, repair, construction or maintenance activities that involve material containing asbestos.
- Construction of large parking lots (150 to >1000 spaces) in certain areas of the state requires a permit.
- Most western Oregon counties (including Marion County) require that individuals or companies engaged in certain activities take precautions to prevent particulate matter (dust and fugitive emissions) from becoming airborne. Construction and renovation

activities, equipment operation, and materials handling are examples of potentially affected activities.

- DEQ, and other state agencies, regulate all types of outdoor burning (e.g. backyard incinerators, construction debris, and field burning) some local governments have added additional restrictions by local ordinances.
- Controlling wood smoke pollution from wood stoves can be mandatory or voluntary, depending on regional air quality.
- The service, maintenance, repair, installation, and disposal of air conditioners and refrigerators are strictly regulated. The chlorofluorocarbons used in these units interact with the atmosphere and create smog and damage the ozone layer.

Air toxics are generally defined as air pollutants known or suspected to cause serious health problems. Serious health effects include cancer, birth defects, lung damage and nerve damage. The U.S. Environmental Protection Agency (EPA) has recently released the first of two phases of the National Air Toxics Assessment (NATA), a new evaluation of 32 high priority toxic air pollutants. The first phase of NATA includes estimated air toxics emissions and outdoor concentrations. The second phase will provide estimates of exposure and health risk. In the Willamette Valley, there are concentrations of 12 toxic air pollutants estimated to exceed health-based benchmarks, or guidelines for safe levels. These pollutants are acetaldehyde, acrolein, benzene, beryllium, 1,3 butadiene, carbon tetrachloride, chloroform, chromium, 1,3 dichloropropene, ethylenedibromide, ethylene dichloride and formaldehyde. Five of those air pollutants are present in concentrations estimated at ten times or more above benchmarks. Major sources are large industrial facilities, like wood products manufacturers and steel mills. Area sources include smaller manufacturers and service industries, such as auto body shops and service stations, and consumer activities. On-road mobile sources are cars and trucks. Non-road mobile sources include motorized watercraft, farm equipment, and all terrain vehicles.

Because motor vehicles emit the most air toxics, people can help by driving less (reducing trips using public transportation, carpooling and telecommuting). Using alternatives to gas powered equipment, such as electric lawnmowers and weed trimmers will also reduce air toxics. As consumers, we can choose products that emit fewer volatile

organic compounds, which are usually air toxics as well. Many paints and other products are now available in low toxicity formulations. Other ways of reducing air toxics include reducing woodstove use, doing regular vehicle maintenance and avoiding household pesticide use.

All activities occurring in the airshed affect air quality in the Willamette Valley. The metropolitan areas influence air quality in the rural areas and vice versa. People typically think of the large point sources when considering air quality and underestimate the cumulative impact of individuals operating small engines, driving their cars, and backyard burning.

WATER QUALITY

This report's information about surface and groundwater quality in the Detroit area came from the DEQ, Oregon Health Division (OHD), and other background reports. This information is compiled from monitoring programs run by state agencies to comply with water quality standards set by the U.S. Environmental Protection Agency. Water quality investigations have been undertaken for the Willamette Basin by the United States Geological Survey for surface water and groundwater.

Surface Water Quality

The Clean Water Act (CWA) requires that states publish a list of surface water bodies that fail to meet water quality standards. This list is called the 303(d) list and is published by the DEQ every three years. The most current list is the 1998 list. Plans to improve water quality must be developed when a water body is placed on the 303(d) list.

Detroit Lake was formed when Detroit Dam was completed in 1953. Three streams flow into the lake north of the Detroit UGB: Breitenbush River, North Santiam River and French Creek. Mackey Creek and two un-named tributaries flow through Detroit from the east.

No water bodies in Detroit are included on the 303(d) list. Detroit Lake, Breitenbush River, North Santiam River and French Creek have been evaluated for various

characteristics including dissolved oxygen, pH, bacteria and sedimentation, but have all been within the required standards.

Watershed councils are created to improve and maintain the condition of local watersheds. The councils are voluntary, non-regulatory and are typically composed of citizens and representatives from local, state and federal government and private industry. The North Santiam River Watershed Council covers the watershed of the North Santiam River, including the area around Detroit. The watershed council conducts activities throughout the watershed. In the Detroit area, the council activities include educating the public about watershed issues and monitoring water quality.

DEQ administers the water quality permit process. National Pollutant Discharge Elimination System (NPDES) permits regulate discharges to surface waters from commercial or industrial facilities, municipal sewage treatment plants, confined animal feeding operations with point source discharges, and mining operations. Water Pollution Control Facility (WPCF) permits regulate discharges of wastewaters to the land surface or subsurface with no direct discharge to surface waters. Examples include land irrigation, evapotranspiration lagoons, industrial seepage pits, and subsurface sewage disposal systems with flows greater than 2,500 gallons per day.

The application process for NPDES permits includes a review and approval of treatment facilities. In some cases, interested parties may request public notices and hearings. Storm water associated with industrial activity, directly or indirectly, and discharged to through storm sewers or storm drainage to surface water may require a permit if the industry is covered by federal storm water regulations. An NPDES permit is also required when clearing, grading, excavation, or construction activities disturb more than 5 acres. The permit requires that an erosion control plan be submitted to the DEQ before any activity commences. On-site sewage disposal systems require a site evaluation and a permit. There are no current water quality permits in the Detroit UGB

Three Basin Rule

Water quality in the North Santiam Watershed has increased protection from contamination due to the "Three Basin Rule." This rule prevents new surface water

discharges into the three river basins in Oregon, including the North Santiam River. Codified in the Oregon Administrative Rules, (OAR) 340.041.0470 states:

(1) In order to preserve or improve the existing high quality water for municipal water supplies, recreation and preservation of aquatic life, new or increased waste discharges shall be prohibited, except as provided by this rule, to the waters of:

(a) The Clackamas River Subbasin;
(b) The McKenzie River Subbasin above the Hayden Bridge (river mile 15);
(c) The North Santiam River Subbasin.

The Three Basin Rule defines waste discharges as "any discharge that requires a NPDES permit, WPCF permit or 401 Certification."

DEQ and OHD approved septic systems, as well as, domestic sewage facilities that discharge less than 5,000 gallons per day under WPCF permit; biosolids and reclaimed domestic waste water applied to land are all still permitted under the Three Basins Rule.

Septic Systems/Sewer

The City of Detroit is not served by a domestic wastewater collection and treatment system. Residents and businesses in the city rely on on-site septic systems to store and treat wastewater. Many of these septic systems fail to meet DEQ standards and pose a risk to public health.

Detroit and the City of Idanha are planning a wastewater collection and treatment facility to serve the two communities because of problems experienced with individual septic systems. The project is currently in the engineering and design phase. The whole system is scheduled to be complete by Spring 2003.

Drinking Water

Residents of Detroit are served by a municipal water system. According to the 20-Year Master Water Plan 1997-2017, there are approximately 250 active unmetered sites during the winter and 360 sites in the summer. Because of large, seasonal fluctuations in population, the summer demand for water is substantially higher.

The City of Detroit holds rights to .25 cubic feet per second (cfs) from Mackey Creek, a tributary of the North Santiam River, and 1 cfs from the Breitenbush River. Mackey Creek has provided water to the city since October 1957. The city began using Breitenbush River as a water source in 1963 to supplement Mackey Creek during low-flow summer months.

Detroit uses a slow sand filter, constructed in 1990, to treat its water. The filter, with a design capacity of 250 gallons per minute (gpm), discharges into a reinforced roofed concrete reservoir with a capacity of 205,000 gallons.

The 20-Year Master Water Plan 1997-2017 identified several major deficiencies in Detroit's water system. First, the Breitenbush River intake system, constructed in 1966, needs major repairs to the pump, wet well and supply piping. Also, much of the distribution system piping is of small diameter (4 inches or less) and deteriorating. Many leaks are suspected. One of the recommendations from the master water plan was to meter all services so that leaks and inefficiencies could be detected. Another problem caused by the small diameter pipes is that it is not possible to provide adequate capacity for fire flows.

When the North Canyon sewer system goes online in 2003, more development in Detroit will become possible, and with that, development will come increasing demands on the City's water system. In the 1997 water master plan, the estimated costs for all the recommended improvements to the system totaled $767,897.00. Should adequate financing become available, the improvements will be completed on or before 2017.

Storm Water

Detroit does not have a comprehensive drainage system. Storm water in the city is drained by a series of open ditches. The system will need to be improved to accommodate new development and protect surface water resources.

Because of the Three Basin Rule, it may be difficult for the city to make changes to the stormwater drainage system. Federal law requires cities that drain their storm water into surface water to obtain a NPDES permit. Because Detroit is located in the North Santiam

River Subbasin regulated by the Three Basin Rule, no new NPDES permits will be allowed by DEQ. Should Detroit upgrade the storm water drainage system in the city, the city will need to come up with a creative way to drain the water collected by the storm water drainage system.

Groundwater Quality

Natural groundwater quality, from a regional perspective, is generally good although some groundwater is saline or high in iron/manganese and arsenic content (Oregon Water Resources, 1992). Recent studies suggest that chemicals associated with human activities affect shallow (<80 feet) groundwater supplies in the Willamette Valley (Hinkle, 1997). Nitrate concentrations are higher downgradient of irrigated agriculture. About 9 percent of the wells tested exceeded the drinking water quality standard for nitrate. Low concentrations of pesticides were also detected in about 1/3 of the sampled wells, but only one chemical; dinoseb a common herbicide used to control weeds; exceeded the drinking water standard. A higher concentration of volatile organic compounds (degreasers and solvents) was associated with urban land use. This study also dated groundwater and found that about 1/5 of the waters sampled were recharged before 1953. This suggests a potential lag time between the surficial use of a substance and its presence in groundwater.

LAND QUALITY

Oregon protects its land quality by regulation of hazardous waste and waste tire storage and transfer; and regulation of underground storage tanks and solid waste. Land quality can ultimately affect water and air quality. Hazardous waste permits are required for activities that:

- Generate useless, unwanted or discarded pesticide or manufacturing residue that is toxic, corrosive, ignitable, or reactive, and
- Establish a hazardous waste disposal site.

Hazardous waste permits may be required for activities that:

- Generate hazardous waste and store it on site for more than 90 days, and

- Store and/or treat hazardous waste on site.

There are no registered hazardous waste generators in Detroit.

Solid waste permits are required to operate a site where garbage, demolition waste, industrial waste, land clearing debris, or sludge is stored, received, processed or landfilled. Operations that plan to store large amounts of tires or chipped tires on a site also need a permit. A review of DEQ's listing of active solid waste facilities in Oregon shows no active facilities in Detroit. Municipal waste from Detroit is transported to the Salem-Keizer Transfer Station.

Permits are required for underground storage tanks that:

- Contain petroleum products or listed chemical products such as gasoline, diesel, solvents, pesticides, and herbicides AND
- Are larger than 1,100 gallons AND
- Have more than 10 percent of the total volume (including piping) underground.

Underground storage tanks left unused for a period of twelve months must be permanently decommissioned by either removing the tank or filling it with an inert substance. DEQ must be notified prior to activity, and a report and checklist must be submitted after the work is completed. A licensed service provider must perform the activity. Plans to treat petroleum contaminated soils from an underground storage tank release, on or off the site, will require a Solid Waste Letter of Authorization from DEQ and be submitted with a Soil Treatment Plan.

DEQ maintains a database called the Environmental Cleanup Site Information (ESCI) database that lists sites known or suspected of being contaminated with hazardous substances. There is one site in Detroit included on the ESCI database: Kanes Marina. DEQ lists the Kanes Marina site on the ESCI database because of a gasoline spill from an aboveground storage tank that resulted in contaminated soils. Also, a leaking underground storage tank was discovered on the site. The property owner removed six cubic yards of contaminated soil and two underground storage tanks.

SUMMARY OF NATURAL RESOURCE QUALITY

Air, water and land resource quality is summarized in **Table 16**.

TABLE 16. SUMMARY OF RESOURCE QUALITY

Resource Type	Quality	Comments
AIR	Regional air quality currently meets standards. No documented local problems.	Projected population growth could result in declines in air quality. Stay current with changes in state and federal standards, regulations, and assistance programs.
WATER		
Surface Water	North Santiam River Subbasin water quality problems documented. Quality of surface water in Detroit is unknown.	Stay current with changes in state and federal standards, regulations and assistance programs. Support or participate in the North Santiam River Watershed Council. Develop surface water management plan that includes water quality components. Note listing status of steelhead and salmon species and determine the effect on city surface water management practices.
Groundwater	Regional water quality problems in shallow aquifer documented (nitrate, pesticides, VOCs). Groundwater quality in Idanha is unknown.	A variety of activities in Detroit area have the **potential** to degrade groundwater quality.
LAND	The Kane's Marina site has documented evidence of soil contamination. Two leaking storage tanks and contaminated soil have been removed from the site.	Spills on the highway and contamination from underground and aboveground storage tanks have the potential to impact Detroit, including groundwater quality. Stay current with changes in state and federal standards, regulation, and assistance programs. Surface Water Management Plans will include elements that apply to land quality.

Air, Land and Water Quality Goals and Policies

GOAL: TO MAINTAIN AND IMPROVE THE QUALITY OF AIR, WATER, AND LAND RESOURCES IN DETROIT

Objective:

To support regional efforts to improve water quality in the North Santiam River Watershed.

- Policy: Detroit will participate in watershed-based efforts to protect fish and wildlife habitat and water quality in the North Santiam River Watershed Council. Participation will include having a representative on the North Santiam River Watershed Council or coordinating with the small-city representative.

- Policy: Detroit will contribute to, or comment upon, regional water quality improvement planning and fish recovery plans undertaken by state and federal agencies by reviewing and responding to proposed policies and plans.

Objective:

Reduce the risk of natural resource contamination in Detroit.

- Policy: All development and activities within the city shall adhere to applicable federal and state air, water, and land quality regulations and standards.

- Policy: Detroit will work with private forestland owners and the USDA Forest Service in the Breitenbush River and Mackey Creek watersheds to protect the city's drinking water supply.

- Policy: Detroit will continue to support the regional solid waste management program.

- Policy: Future development activities that generate a significant amount of noise will be required to meet all noise regulations of the State of Oregon.