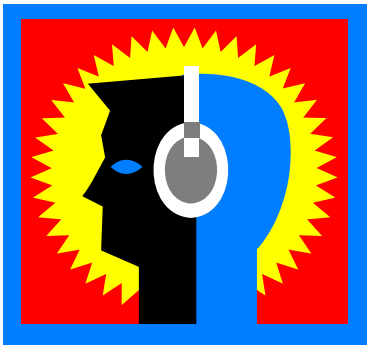
Chapter Eight: Environmental Quality and Safety Element



ENVIRONMENTAL QUALITY AND SAFETY

8.1 OVERVIEW

In response to the requirements of Statewide Planning Goals 6 (Air, Water and Land Resources Quality) and 7 (Areas Subject to Natural Disasters and Hazards) this chapter contains sections addressing water quality, air quality, noise, seismic hazards, geologic hazards, flood hazards, and solid and hazardous waste. The chapter contains goal, policy and action statements written to ensure that 1) the condition of air, water and land resources is adequately maintained and improved upon, and 2) public safety is protected by prohibiting or regulating development of land in hazardous areas, or by managing the hazards through methods that protect existing development.

8.2 WATER QUALITY

Water quality resource protection is necessary for its life sustaining benefits. The City and the Clean Water Services (CWS) share responsibility for meeting the standards set by the Federal Clean Water Act. These standards, defined by the Total Maximum Daily Loads (TMDLs) of waste water that can be discharged into streams, are set by the Oregon Department of Environmental Quality (DEQ). The primary source of water quality impacts in the City is from runoff flowing into streams and wetlands from streets, parking lots, building roofs and landscaped areas. The flashiness of storm flows in urban areas causes degradation of the vegetative corridors along streams that, in turn, increases the erosion of riparian banks and water turbidity. The scouring of the riparian banks and lack of established native vegetative cover along streams leads to increased water temperatures that also degrade water quality and aquatic habitat.

The quality of water resources can be protected, enhanced or restored through the application of development standards that require planting and maintenance of natural vegetation within riparian areas. This can be achieved through the development process or by voluntary actions on the part of private property owners and volunteer organizations. Voluntary and incentive based reductions to impervious surfaces, along with the use of habitat friendly development practices and low impact development techniques can also reduce impacts to water resources. Overall, sustainable stormwater management balances the hydrologic regime found before development. Pre-development or natural hydrologic function is the relationship among the overall and subsurface flow, infiltration, storage and evapotranspiration characteristics of the landscape. Sustainable stormwater management avoids and minimizes impacts to natural resources by protecting native vegetation and natural drainage sources. The natural stormwater system mimics natural water flow by minimizing land disturbance and incorporating natural landscape features in to the development. Implementation of development requirements that follow the Clean Water Services Design and Construction Standards manual, and erosion control practices, can help to reduce and filter storm drainage flow, particularly during heavy rainfall.

8.2.1. Goal: Maintain and improve water quality, and protect the beneficial uses, functions and values of water resources.

Policies:

a) All water resource areas within the City shall be enhanced, restored or protected to the extent practicable.

Action 1: *Develop incentives programs for property owners that will encourage the enhancement, restoration or protection of vegetative corridors. One such program might include working with CWS to establish an information outreach effort to encourage the creation of separate tracts for water resource areas, or dedication of water resource areas to a public or non-profit agency, thereby limiting development in the identified resource areas, and benefiting property owners by reduced property taxes for the portion set-aside as non-developable.*

Action 2: *Review and refine monitoring and enforcement programs regarding erosion control practices in conjunction with development.*

Action 3: *Cooperatively work with appropriate City departments and service providers, through a technical advisory committee, to review their use of Best Management Practices (BMPs) and other programs approved by the National Marine Fisheries Service in public works projects, and routine maintenance activities that potentially impact stormwater runoff or have a direct effect on streams and wetlands. Adopt and apply appropriate regulations formulated through the cooperative process.*

Action 4: *Adopt and apply appropriate regulations allowing and encouraging habitat friendly and low impact development practices.*

b) The City shall limit development in vegetative corridors along streams through application of the CWS Design and Construction Standards so as to substantially comply with requirements of the Metro Functional Plan Title 3.

Action 1: *Adopt and apply appropriate land use regulations aimed at restoring, enhancing or protecting water quality sensitive areas.*

Action 2: *Adopt and apply appropriate land use regulations that allow and encourage multi-use functions of landscaping so that landscaping can be used for stormwater retention, detention and infiltration.*

Action 3: *Adopt and apply appropriate land use regulations that allow and encourage use of native vegetation and vegetation that mimics the natural environment in landscaping in development.*

c) The City shall support the development of education programs aimed at helping citizens understand the importance of good stewardship and the use of non-regulatory tools that will provide additional water quality resource protection.

Action 1: *Seek funding opportunities such as grants, that would assist development and implementation of Citywide water quality education, information and project management programs that might include a City environmental coordinator position.*

d) Partner with other local jurisdictions and service providers to avoid duplication of efforts and resources.

e) Protect investments in the City by managing stormwater runoff.

Action 1: *Adopt and apply land use regulations that control the rate of runoff to reduce sudden changes in water flow, abnormally high flows, and flooding due to development.*

Action 2: *Adopt and apply land use regulations to provide increased surface water runoff detention and avoid structural damage to improvements. First priority, site improvements are off-channel mitigation and wetlands. Second priority, site improvements are in-channel. Exhaust on-site mitigation opportunities before seeking off-site mitigation.*

Action 3: *Adopt and apply land use regulations to provide undisturbed vegetative buffers between the stream or significant wetland and any hard surface improvement or building. The defined buffer width may be treated as an average dimension to allow flexibility in design and increase opportunities to enhance wildlife habitat. Where undisturbed, vegetative buffers are reduced below the defined width by way of averaging the required buffer width, the adjacent urban development should include increased landscaping, and street tree plantings to maximize tree canopy coverage and reduce the urban heating effect. Increased landscaping will help reduce stream temperatures through the urban area.*

Action 4: *Adopt and apply land use regulations requiring surface storm drainage from walkways, streets, parking areas, and roofs to be designed to flow into detention areas and landscape areas rather than into stream channels and the riparian corridor. Monthly surface water management fees may be discounted through designs that minimize impacts on the storm water system.*

Action 5: *Adopt and apply land use regulations requiring integration of storm water detention and treatment facilities into the design of a development appearing, if feasible, as a component of the landscape rather than as a utility element.*

f) Encourage development in urban environments in ways that promote healthy environments and natural resources.

Action 1: *Adopt and apply regulations that allow and encourage habitat friendly development practices and low impact development techniques and preservation of natural resources. Examples include allowing greater deviation from site development standards when preserving habitat or using habitat friendly or low impact development practice; allowing use of pervious pavements and green street cross sections, where appropriate; rain gardens and ecoroofs.*

Action 3: *Adopt and apply regulations that encourage use of natural stormwater systems that mimic natural hydrologic function by minimizing land disturbances and incorporating natural landscape features. Examples include raingardens, ecoroofs, vegetated swales, pervious pavers, and retention of trees and native vegetation.*

8.3 AIR QUALITY

The primary sources of air pollution are industry and transportation. In determining the air quality impact of these sources, several factors are considered:

- Indirect sources (facilities or buildings) attracting automobiles in sufficient quantities to increase air pollution,
- The concentration of automobiles (as determined by traffic volume, speed, number of stops, and number of trips),
- Emission rates, and
- Land use patterns.

The relationship of land use patterns and transportation systems can greatly impact air quality. Single-use, land use zones create a dependence on the automobile to facilitate travel between home, work, school and shopping. The problem may be further compounded by inadequate local street, walkway and bikeway connections between neighborhoods, along with limited access to public transportation. The land use patterns being implemented today, are designed to provide for a mixture of housing, jobs, and small scale retail services within neighborhoods. This more efficient use of land, combined with the implementation of multi-modal transportation corridors and connecting local streets, bikeways and walkways is designed in part to reduce auto-dependent trips and thereby, reduce vehicle-related air pollution.

The City of Beaverton lies within the Environmental Protection Agency (EPA) - designated Portland-Vancouver Interstate Air Quality Maintenance Area (AQMA) and must comply with state and federal standards for air pollutant concentrations. As a result of Federal requirements, the City will need to continue to work to reduce the emission of air pollutants, particularly ozone (smog), carbon monoxide and particulate matter. The livability of our community is dependent on maintaining and improving our air quality.

8.3.1. Goal: Maintain and improve Beaverton's air quality to increase livability and quality of life.

Policies:

a) Support efforts to reduce air pollutant emissions in the City and within the AQMA.

b) Comply with the EPA, DEQ, and Metro approved plans to achieve federal, state, and regional air quality standards through the adopted regional control strategies.

c) Consider and work to mitigate air quality impacts in the development review process.

Action 1: *Adopt and apply development regulations that include provisions, incentives, or both, for employment centers to encourage employees to make use of*

alternative transportation modes. Continue to require developers to provide car pool parking and bicycle storage facilities.

8.4 NOISE

A healthy acoustical environment is vital to the livability of the City. Sources of environmental noise may be largely classified into four types: 1) building equipment, 2) transportation systems, 3) industrial and commercial activity and 4) human activity. Building equipment primarily includes outdoor units, such as fresh air intakes, cooling towers and condensers, fan rooms, and power transformers. Transportation systems include highway traffic, light rail trains, heavy rail trains and aircraft. Industrial noise is found at industrial sites and utility sources, and also includes construction activity on our streets, buildings and utilities. Noise emanating from human activities, including dog barking, loud voices, and loud audio systems, can be a problem in urban settings if buildings are designed without adequate consideration of noise reduction.

There are two methods the City has available to reduce noise pollution, 1) a noise abatement program as part of the City Municipal Code, Section 5.05, and 2) development standards and design review criteria.

8.4.1. Goal: Create and protect a healthy acoustical environment within the City.

Policies:

a) Noise impacts shall be considered during development review processes.

Action 1: *Adopt and implement appropriate design standards for development permits for all commercial, industrial, high density, mixed use and transportation projects, and others as appropriate. Development applications should be required to demonstrate compliance with applicable noise level standards. Means of meeting the design standards might include, but are not limited to:*

- *Use of year-round landscape elements that absorb parking lot and street noise.*
- *Use of underground parking.*
- *Use of extra-thick windows.*
- *Facades constructed of materials that help to absorb sounds.*
- *Pervious surface landscape and parking lot materials that absorb sounds.*
- *Use of building materials that aid in the reduction of sound traveling through common floors and walls.*
- *Dampers on heating and cooling equipment.*

b) The City shall comply with EPA and DEQ noise standards.

Action 1*: Periodically review and update the City's Municipal Code Section 5.01 pertaining to noise abatement to reflect changes in EPA and DEQ standards and to address impacts of changing land development patterns that encourage mixed uses and higher density housing.*

8.5. SEISMIC HAZARDS

The City recognizes that seismic hazards in the form of liquefaction and ground shaking, along with geological hazards associated with steep slopes, weak foundation soils, erosion and deposition, represent potential threats to life and property.

Seismic hazards should be addressed for the protection of lives and property. The City can utilize two management approaches: 1) limit development in areas subject to seismic hazards, 2) allow development subject to appropriate design standards. It is safer to construct or retrofit earthquake-resistant buildings than to ignore the threat and suffer irreversible harm from the occasional, moderate to great earthquakes that are historically known to occur along the Portland Hills Fault and the more distant Cascadia Subduction Zone Fault. In high risk undeveloped or redevelopable areas, regulations to limit or prohibit certain uses are more appropriate.

8.5.1. Goal: Protect life and property from potential earthquake hazards.

Policies

a) Limit as much as possible the potential loss of life and property resulting from earthquakes, and minimize disruption of public facilities, services, and transportation systems.

Action 1: *Prepare and adopt programs and regulations to reduce the potential impacts of earthquakes on:*

- *Existing and new structures,*
- *infrastructure, and*
- *transportation systems.*

b) Ensure that key public, semi-public and private buildings retain structural integrity and remain functional in the event of an earthquake.

Action 1: *Develop a program and seek funding to retrofit existing public buildings and consider establishing tax incentives to retrofit other semi-public, or private structures that house essential services and are identified as high risk sites.*

8.6 GEOLOGICAL HAZARDS

Geological hazards include unstable steep slopes, erosion and deposition, and weak foundation soils. In the interest of public safety, the location of natural hazards should be determined, and the degree of hazard present should be evaluated. Based on this evaluation, decisions should be made about the amount of development, if any, that should be allowed at the location. If development is to be allowed, consideration should be given to conditioning development approval to limit potential losses resulting from natural disasters.

8.6.1 Goal: Protect life and property from geological hazards associated with identified unstable steep slopes, erosion and deposition, and weak foundation soils.

Policies:

a) Limit or prohibit development in geologically hazardous areas that pose a threat to life and property.

Action 1: *Identify geological hazard sites in the City including unstable steep slopes, weak foundation soils, and areas subject to erosion and deposition. Adopt and apply regulations to these sites through engineering standards and site development design criteria to allow, limit, or prohibit development, as appropriate.*

Action 2: *Periodically review and update the existing erosion control regulations and enforcement procedures to improve their effectiveness.*

Action 3*: Adopt and apply land use regulations requiring that building sites, streets and other improvements in areas with 25% or greater slopes, be designed so that cuts and fills are minimized and best management practices for erosion control are integrated into the design.*

b) The City shall support the reclamation of aggregate sites having a Department of Geology and Mining Industry (DOGAMI) mining permit, to ensure the stability of slopes and prevention of erosion, and to prevent the creation of weak foundation soils.

Action 1: *Adopt and apply appropriate site development code requirements to ensure the DOGAMI reclamation process is completed prior to the issuance of a site development permit.*

8.7 FLOOD HAZARDS

The City supports the Federal Emergency Management Agency (FEMA) guidelines for floodplain development. Floodplain protection is essential for water quality functions and values. Natural floodplains serve as filters that absorb excess stormwater runoff and pollutants, aid in erosion control, and provide important shade and habitat protection. The City protects floodplains through a variety of methods. These include application of the FEMA Flood Insurance Rate Maps, Development Code requirements, engineering standards, CWS Design and Construction Standards, and building code requirements.

8.7.1 Goal: Maintain the functions and values of floodplains, to allow for the storage and conveyance of stream flows and to minimize the loss of life and property.

Policies:

a) Utilize uniform or complementary interjurisdictional floodplain development and management programs to reduce flood hazards, protect natural resources, and permit reasonable development.

Action 1: *Adopt and apply appropriate land use regulations that allow and encourage low impact development techniques and habitat friendly development practices to mimic the natural system, thereby reducing or eliminating the need for piped systems.*

b) Development shall be prohibited in the floodway, except as necessary for the placement of roadways, utilities, stormwater conveyance, bridges, culverts, and grading related to public utility projects as permitted by the appropriate implementing ordinances.

c) Construction within the floodfringe shall be regulated through the City's implementing ordinances, such as the City's Engineering Design Manual and Standard Drawings.

d) Uncontained areas of hazardous materials, as defined by the DEQ, shall be prohibited in the floodplain.

Action 1: *Develop a program to remove hazardous obstructions and debris from floodplains.*

Action 2: *Develop a flood damage reduction program to protect, to the extent practicable, existing development in the 100-year floodplain, following guidelines and regulations established by the Federal Emergency Management Agency (FEMA). Alternatively, explore programs to encourage removal of existing development from floodplains.*

8.8 SOLID AND HAZARDOUS WASTES

Solid waste disposal is a regional concern requiring regional solutions. The City supports the Metro Regional Solid Waste Management Plan 1995 – 2005. Metro's ten-year plan emphasizes waste prevention and reduction, and resource conservation with a commitment to public education, technical assistance, and consistent cooperation with local jurisdictions. In response, the City has adopted a solid and hazardous waste recycling and collection ordinance as part of the City Municipal Code, Section 4.08. City staff oversee the program, which includes solid waste collection and recycling franchises.

8.8.1 Goal: Reduce the amount of solid waste generated per capita.

8.8.2 Goal: Prevent inappropriate disposal of toxic or hazardous waste materials.

Policies:

a) The City shall support efforts to reduce the amount of solid waste generated from household, industrial, and commercial uses through source reduction and recycling activities, pursuant to Municipal Code requirements.

b) The City shall promote public awareness in order to achieve the highest participation possible in:
- the reduction of solid waste,
- recycling, and
- the appropriate handling and disposal of hazardous and toxic waste.

c) The City shall comply with Metro, State, and federal solid and hazardous waste laws and regulations.

Action 1: *Continue to update Municipal Code Section 4.08 in accordance with Metro, State, and federal solid and hazardous waste requirements.*

Action 2: *Obtain an inventory from the DEQ of identified hazardous or toxic material sites located within the City's urban services area. This inventory should be periodically updated and maintained at the Community Development Department, and reviewed as part of the annexation or site development process.*

Action 3: *Develop and apply appropriate site development approval criteria for land identified by DEQ as an environmentally hazardous material or toxic waste site.*