

## CHAPTER V: RESOURCES

### Goal 5: Natural Resources

#### Soils

**Table 5.1** identifies soils type found in the Aumsville area and their suitability and limitations for various uses based on the most recent soil survey (1972). Soil Capability Class refers to the general suitability of soils for most types of field crops. There are no Class I, or prime farmland soils located inside the UGB. Septic tanks, public sewers, and commercial/industrial development columns reference the suitability of locating these types of uses by soil classification. The categories of permeability and depth to seasonal water table indicate that most soils inside the UGB have moderate to very slow permeability and a seasonally high water table. Water moves slowly through these soils, particularly the hydric soils. Seasonal high water tables refer to saturated conditions that develop during the winter months. A soils map for the Aumsville area is illustrated in **Map 5.1**.

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*Table 5.1. Selected Information for Aumsville Area Soils*

<b>Map Symbol</b>	<b>Soil Capability Class</b>	<b>Septic Tanks</b>	<b>Public Sewers</b>	<b>Commercial/Industrial Development</b>	<b>Depth to Seasonal High Water Table (inches)</b>	<b>Permeability</b>	<b>Hydric Soil?</b>
Cu	IV	Severe	Severe	Severe	0-6	Very slow (Claypan)	Yes
Da	IV	Severe	Severe	Severe	0-6	Very slow (Claypan)	Yes
Wa	III	Severe	Severe	Severe	0-6	Slow	Yes
Am	II	Severe	Moderate	Moderate	0-12	Moderately slow	No, except for Concord inclusions

Ck	III	Severe	Moderate	Moderate	6-16	Moderately slow	No
NeC	III	Severe	Moderate	Moderate	Not restrictive	Moderately slow	No, except for wet spot inclusions
MaA	II	Severe	Severe	Severe	16-30	Moderately slow	No, except for Waldo inclusions
MaB	II	Severe	Moderate	Moderate	16-30	Moderately slow	No
Sa	II	Slight	Slight	Slight	72+	Moderate	No
SkB	II	Severe	Slight	Moderate	Not restrictive	Slow	No
SkD	III	Severe	Slight	Moderate	Not restrictive	Slow	No

Source: Soil Survey of Marion County, USDA, 1972

### Recommendation

In general, Aumsville soils have moderate to severe development limitations. It is recommended the city restrict construction of incompatible land uses in these areas or require engineering that provides an adequate level of safety and minimizes adverse impacts.

Map 5.1: Soils Map

## Wetlands

The National Wetland Inventory (NWI) maps indicate that several wetlands occur inside the UGB (Map 5.2). The NWI is based on aerial photo interpretation and only approximately depicts wetland location and boundaries, and **does not** show all wetlands in an area. Soil and vegetation, and hydrologic information, sampling is required to confirm the information on the NWI maps. However, the maps are useful resources to preliminarily identify the general nature and location of wetlands.

**Table 5.2** shows that two general types of wetlands are located in the Aumsville area, (R) riverine and palustrine (P). Riverine wetlands are usually located in the channels of rivers, creeks, and streams that usually contain flowing water. Palustrine wetlands are usually wet meadows, marshes, bogs, and swamps. Mill and Beaver Creek, and the Mill Race are riverine wetlands.

**Note:** Many of Aumsville's wetlands are associated with excavated (x) ponds, ditches, and streams. The city's waste water treatment ponds, Highberger Ditch, and Beaver Creek are all mapped as excavated wetlands. Because the water table is very shallow during the winter and spring, many abandoned gravel pits in the area become ponded with water. When excavated structures are placed in mapped hydric soils any wetlands that occur on them become protected by wetland laws and regulations.

**Table 5.2. Wetlands Inside the Aumsville Urban Growth Boundary**

Wetland Code	Code Explanation	Approximate Location
PUBHx	(P) Palustrine; (UB) Unconsolidated Bottom; (H) Permanently Flooded; (x) Excavated	Wastewater lagoons
PEMC	(P) Palustrine; (EM) Emergent; (C) Seasonally Flooded	Along Highway 22 and Beaver Creek
PEMCx	(P) Palustrine; (EM) Emergent; (C) Seasonally Flooded; (x) Excavated	Near railroad and Highway 22
PSSC	(P) Palustrine; (SS) Scrub-Shrub; (C) Seasonally Flooded	Along Highway 22
PSSA	(P) Palustrine; (SS) Scrub-Shrub; (A) Temporarily Flooded	Highberger Ditch
R4SBCx	(R) Riverine; (4) Intermittent; (SB) Streambed; (C) Seasonally Flooded; (x) Excavated	Beaver Creek
R2UBH	(R) Riverine; (2) Lower Perennial; (UB)Unconsolidated Bottom; (H) Permanently Flooded	Mill Creek and Mill Race

Source: United States Fish and Wildlife Service National Wetland Inventory Maps, Stayton and Turner Quadrangles

*Map 5.2 National Wetland Inventory Map For Aumsville Area*

### Recommendations:

1. Aumsville should obtain a local wetland inventory (LWI) of the area inside the UGB. A LWI would verify the accuracy of the NWI information, add missing information about the location, size and quality of wetlands, and help guide future wetland planning work and urban growth.
2. Aumsville should actively seek available funding sources for conducting a local wetland inventory (LWI) inside the UGB area.
3. Aumsville should consider the location of mapped hydric soils when the UGB is expanded. Areas of mapped hydric soils are more likely to contain wetland and drainage problems, resulting in land that cannot be developed or is more expensive to develop. Also, these areas are often associated with floodplain limitations.
4. Much of the area inside the UGB is located on mapped hydric soils or soils that contain pockets of wetland soils. When excavated structures are located on **mapped** hydric soils, any wetlands that may develop around them are protected by existing wetland regulations and laws. Therefore, it is important to maintain good drainage in ditches and ponds if wetlands are not the desired result.
5. Given the flat characteristics of Aumsville's terrain, the seasonal high groundwater table and flood hazards, and the degraded water quality of Mill Creek, the city should preserve its remaining wetlands and restore degraded wetlands. These activities undertaken in conjunction with storm water and riparian corridor management would improve water quality, storm water drainage and flood water storage capabilities, wildlife/fish habitat, and recreational opportunities.

### Wetland Notification Process:

During the development review process, it is recommended the city use the following two criteria to determine the potential location of on-site wetlands and to trigger the need for a wetland determination prior to development:

1. Presence of Hydric Soils - Hydric soils refers to soil types that generally exhibit poor drainage capacities and are typically wet for extended periods of time. For proposed developments, the most recent Marion County Soil Survey should be referenced to identify the presence of hydric soils (see **Table 5.1**).
2. National Wetlands Inventory Maps - During the development review process, the most recent NWI maps should be used to identify the potential for on-site wetlands (see **Map 5.2**).

If a wetland determination indicates the presence of on-site wetlands, then the applicant must follow the process and regulations established by Division of State Lands and U.S. Army Corps of Engineers.

### Significant Habitat

There is conflicting data regarding the location and the quality of significant habitats in the Aumsville area from the various state agencies responsible for regulating and monitoring these resources. In December 1996, the Oregon Department of Fish and Wildlife (ODFW) was contacted to provide an updated inventory confirming the presence of any significant fish and wildlife areas and riparian habitats located in Aumsville. According to ODFW, Mill and Beaver Creeks have been identified as significant fish and riparian habitats with Mill Creek supporting runs of both fall Chinook salmon and winter steelhead. Cutthroat trout are also residents in both Mill and Beaver Creeks. However, the Division of State Lands (DSL) "Essential Salmon Habitat Areas Stream List" (dated 1/16/95) does not identify Mill Creek or Beaver Creek as essential salmon habitat. Data from DEQ indicates that Mill Creek is rated as having severe water quality problems for supporting fish conditions and moderate problems affecting aquatic habitat (see **Water Quality** below).

### Recommendation

To mitigate further environmental damage to existing fish and wildlife habitats, it is recommended the city develop a riparian protection plan for the UGB area. The plan should identify and map existing riparian areas and delineate a protective buffer for maintaining and enhancing viable fish and wildlife habitats. The city should actively seek available funding for conducting an assessment of existing fish and wildlife habitats in conjunction with a local wetland inventory (described above).

### **Groundwater Resources**

Aumsville obtains its municipal water supply from groundwater resources located underneath its UGB. This is a vital resource to the city so specific information about groundwater quality and quantity, vulnerability to contamination, and production capacity is critical. Regionally, general water quality is good except for occasional waters that are saline (salt) or high in iron, manganese, and sulfur. The regional aquifer is mainly recharged by precipitation that infiltrates into the subsurface, but Mill Creek and the North Santiam River may provide some limited, local recharge during the summer months.

Aumsville lives and does business over its own water supply. The importance of this resource, and its relative vulnerability to surface sources of contamination, warrant a more detailed and site-specific investigation into the nature of the resource and pollution prevention activities. It is recommended the city develop a wellhead protection plan to protect the quality of its drinking water supply and plan for emergency needs and future urban growth. The city should actively seek available funding for conducting an assessment of its water quality and groundwater resources.

## **Goal 6: Air, Water and Land Resources Quality**

### **Department of Environmental Quality Regulations**

The Department of Environmental Quality (DEQ) regulates the discharge of pollutants into the environment. Currently the following activities 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 (easily crumbled) asbestos-containing material;
- \* Ownership or operation of a landfill, transfer station, incinerator, or sewage lagoon for non-hazardous wastes; and
- \* Treatment of petroleum contaminated soil from, an underground storage tank releases, 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).

### **Air Quality**

Ambient air quality is monitored by DEQ by a statewide air quality surveillance network. The monitoring stations closest to Aumsville are located in Salem. These stations continuously monitor for carbon monoxide, ozone, and particulate levels. Available data from the Salem stations indicate that air quality is generally good (DEQ, 1996).

Air quality in the Willamette Valley is affected by all activities occurring within the airshed. 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.

### **Recommendation**



Follow DEQ requirements to protect air quality and provide educational materials increasing public understanding of air quality. If air quality in the region degrades, participate in the regional air quality planning processes.

## **Water and Land Quality**

### *Surface and Groundwater Quality*

Information about surface and groundwater quality in the Aumsville area can be obtained from DEQ, the 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 (EPA) and other sources.

Data from DEQ indicates that some beneficial uses of Mill Creek are limited due to low water quality. Water-contact recreation for the entire length of Mill Creek is not advised for any portion of the year due to high bacteria (fecal coliform) levels in the water. Annual values exceeded the standard from 1990-94. This contaminant may be associated with septic tank systems and agricultural activity within the watershed. Mill Creek was also rated with severe stream problems for water quality conditions and fish conditions; and moderate stream problems affecting aquatic habitat.

Natural groundwater quality is generally good though some groundwater is saline (salt) or high in iron, manganese, and sulfur content. Regionally, groundwater quality has been affected by human activities. Oregon Health Division records indicate that 11 percent of public water systems in Oregon had detected contaminants in their water supply, as of late 1995. A review of information in the Environmental Cleanup Site Information System, obtained from DEQ in 1994, shows no sites in the Aumsville area with suspected or confirmed releases of substances to groundwater. However, information from the Oregon Health Division reports that volatile organic compounds were detected once in the Aumsville municipal water supply.

### *Land Quality*

In Oregon, land quality is protected through the regulation of hazardous waste and waste tire storage, solid waste facilities, and underground storage tanks.

A review of DEQ's listing of closed and active solid waste facilities shows that the landfill facility closest to Aumsville was the Macleay facility, located approximately one mile to the northwest of the UGB. This facility received general municipal waste and was closed in 1975.

The Mid-Willamette Valley Wellhead Protection Project (1996) noted that 14 permitted underground storage tanks, and eight leaking underground storage tank sites, were located in the Aumsville area. **Table 5.3** provides additional information on the leaking underground storage tank sites. Cleanup of contamination at these sites is completed or ongoing, but the table indicates how common this type of contamination is.

*Table 5.3: Leaking Underground Storage Tank Sites in the Aumsville Area*

<b>Site Name</b>	<b>Location</b>
Aumsville Elementary	572 11th Street North
Hatch Engine Inc.	12292 Hatch Lane SE
Steve Wheeler Tire Center	8723 Golf Club Road SE
Ritchie Property	Hatch Lane
Tom's County Boy Gas	810 Main Street
Pioneer Farms	13168 Santiam Lane SE
Aumsville District Shop	Turner Highway
Moduline/Blazer Industries	945 Olney Street

The Environmental Cleanup Site Information System was also reviewed for information on contaminated land resources. Two entries were found for the Aumsville area: (1) Pesticide containers abandoned in a swale along Anderson Road, and (2) Disposal of chromium treatment rinse waters. DEQ records indicate that pesticide contamination probably did not occur. Ektron Industries currently discharges rinse waters to the municipal sewage system but possible releases to ground surfaces were investigated.

Underground storage tanks pose a serious potential contamination source for land, surface, and ground water resources in Aumsville. The hazard to Aumsville is heightened by the fact that they rely on groundwater as a municipal water supply and groundwater supply is limited in the area.

### Recommendation

Develop a wellhead protection program for the Aumsville municipal water supply and promote best management practices for the operation of underground storage tanks to reduce the risk of groundwater contamination. The city should periodically communicate with DEQ in order to stay current on all local pollution monitoring and mitigation efforts to ensure the safety of area residents. The city should actively seek available funding for conducting a well head protection program within the UGB.

## **Goal 7: Natural Disasters and Hazards**

### **Flood Hazard**

Lands naturally prone to flooding serve a number of vital hydrologic functions including the temporary storage of surface water runoff during periods of excessive rainfall. This helps regulate the velocity and timing of floodwater discharge which decreases the likelihood of flood damage. Improper development in flood prone areas reduces their natural ability to function beneficially. The addition of impervious surface materials (i.e., paved parking lots, buildings, etc.) causes flood discharges to peak more quickly and at higher elevations and increased velocity. Not only does the potential of direct damage to buildings and infrastructure increase, but the capacity to store and convey water is also reduced, which can increase the potential of flooding surrounding lands that were not previously subject to flooding. Failure to implement flood control measures can result in increased flood damage and loss of assessed property values, increased public expense in the form of higher flood insurance premiums, and loss in local tax revenues from lower assessed property values.

The Federal Emergency Management Agency (FEMA) regulates land development within flood prone areas. To provide a national standard, the one percent annual chance (100-year flood) has been adopted by FEMA as the base flood for floodplain management purposes. Areas located within the 100-year floodplain are depicted on the Flood Insurance Rate Maps (FIRM) developed by FEMA. In most communities, FEMA maps are typically used as the accepted data source for identifying areas within the 100-year floodplain. The FEMA maps, dated August 17 1982 and September 30 1993, were used to identify flood prone areas in Aumsville. The areas surrounding Beaver Creek and Mill Creek are both subject to periodic flood inundation (Map 5.3). Some of the residential properties located to the north of Olney Street and the segment of 8th Street (West Stayton Road) that crosses Mill Creek are located within the 100-year floodplain.

Areas that contain hydric soil types are also indicators of potential periodic flooding and should also be considered during the development review process.

### **Recommendation**

During development review, it is recommended the city use the following two criteria to identify areas subject to periodic flooding and to mitigate the potential for flood inundation:

1. The most recent FEMA maps should be used to identify the areas within the 100-year floodplain (see **Map 5.3**). The city should ensure that all proposed developments located within the 100-year floodplain comply with all applicable FEMA and city regulations and standards.
2. The most recent Marion County Soil Survey should be referenced to identify the presence of hydric soils (see **Table 5.1**). The presence of hydric soils should warrant further site evaluation and the need to mitigate for potential flooding.

Map 5.3: 100 Year Flood Map

## Seismic Hazards

For most of Oregon's history, the state has been spared the damaging earthquakes experienced in California and Washington. However, ongoing geoscientific research and the Scotts Mills and Klamath Falls quakes in 1993 provide evidence that seismic hazards do exist in Oregon. In fact, because Oregon is unprepared, the state faces a small chance of great disaster, (DOGAMI, 1996). Seismic hazards in Oregon are related to three types of earthquakes: crustal earthquakes, intraplate earthquakes, and great subduction zone earthquakes. Crustal earthquakes are the most common in Oregon and can occur when the earth moves along faults in the upper portion of the crust. Intraplate quakes occur at depths of 20 to 40 miles below the surface and great subduction zone quakes are located along the offshore fault that runs parallel to the Oregon and Washington coastline.

Potential hazards facing a community from seismic activities include a combination of factors such as the magnitude of the earthquake, population density and distribution, and structure type. In Aumsville, seismic hazards are only generally characterized but existing information does suggest that the high seasonal water tables and loose subsurface materials enhance the estimates of earthquake shaking.

### Recommendation

In cooperation with the Marion County Building Department, the city should explore the feasibility of developing construction standards and site planning guidelines for mitigating potential damage from seismic activity.

## GOALS AND POLICIES

### GENERAL NATURAL RESOURCE OBJECTIVE AND POLICY

**Objective:** Proposed development inside the Aumsville UGB shall comply with all applicable state and federal environmental rules, regulations, and standards.

**Policy 1:** During the development review process, it shall be the responsibility of the applicant to obtain all required permits from the applicable local, state, and federal agencies for proposed development that: (1) are located within the 100-year floodplain as delineated by the Federal Emergency Management Agency (FEMA); and (2) contain jurisdictional wetlands designated by the Division of State Lands (DSL), or wetland areas identified on the National Wetlands Inventory maps. The city shall not issue a land use permit prior to proof, by the applicant, that all required permits have been obtained.

### GOAL 5: NATURAL RESOURCES

**Goal:** To conserve and appropriately manage the natural resources inside the Aumsville Urban Growth Boundary (UGB) and provide protection for significant fish and wildlife habitats.

#### Soils

**Objective:** Minimize adverse environmental impacts caused by land development and other human activities.

**Policy 1:** The city shall restrict the construction of incompatible land uses in areas containing soils with severe development limitations (as identified by the Marion County Soils Survey), or require engineering and best management practices that provide an adequate level of safety and minimize adverse environmental impacts.

#### Wetlands

**Objective:** Obtain a local wetlands inventory for the area inside the UGB to help guide future urban growth and minimize impacts on existing wetland resources.

**Policy 1:** The city shall actively seek available funding for conducting a local wetland inventory inside the UGB.

Policy 2 During the development review process, the city shall use the following criteria to determine the potential for on-site wetlands and to trigger the need for further wetlands determination analysis: (1) Hydric soils - The most recent Marion County Soil Survey shall be referenced to identify the presence of hydric soils; and (2) National Wetlands Inventory (NWI) - The most recent NWI maps shall be used to identify the potential for on-site wetlands.

### Significant Habitat

Objective: Develop a riparian protection plan to help mitigate potential damage to significant fish and wildlife habitats inside the Aumsville UGB.

Policy 1: The city shall actively seek available funding for conducting an assessment of significant fish and wildlife habitats in conjunction with a local wetland inventory.

Policy 2: The city shall consult with the Oregon Department of Fish and Wildlife (ODFW) and the Division of State Lands (DSL) prior to the issuance of a development order where significant habitats are known to exist. If proposed development is found to have an adverse impact on significant fish and wildlife habitats then mitigation measures that are consistent with applicable federal and state standards shall be required.

### Groundwater

Objective: Develop a wellhead protection plan to protect the quality of Aumsville's drinking water supply and to plan for emergency needs and future growth.

Policy 1: The city shall actively seek available funding for conducting an assessment of its water quality and groundwater resources.

## GOAL 6: AIR, WATER AND LAND RESOURCES QUALITY

Goal: To protect the quality of air, water, and land resources inside the Aumsville UGB to ensure the safety of area residents.

Objective: Minimize adverse environmental impacts caused by land development and other human activities by continuing to coordinate with the appropriate state agencies in monitoring air, water, and land resource quality.

Policy 1: The city shall periodically communicate with DEQ to stay current on all local pollution monitoring and mitigation efforts.

**GOAL 7: NATURAL DISASTERS AND HAZARDS**

Goal: To protect life and property of area residents from natural disasters and hazards.

**Flood Hazard**

Objective 1: Preserve the natural functions of the 100-year floodplain so that flood carrying and storage capacities are maintained.

Objective 2: Minimize the potential for flood inundation caused by improper development in flood prone area.

Policy 1: During the development review process, the city shall use the following criteria to identify areas subject to periodic flooding and to mitigate the potential for flood inundation: (1) Federal Emergency Management Agency (FEMA) - The most recent FEMA maps should be used to identify areas within the 100-year flood plain; and (2) Hydric soils - The most recent Marion County Soil Survey shall be referenced to identify the presence of on-site hydric soils. The presence of hydric soils should warrant further site evaluation and the need to mitigate for potential flooding and seasonal high groundwater tables.

Policy 2: Require that development which may take place within the flood hazard areas along Beaver Creek and Mill Creek, as identified by FEMA, is provided appropriate safeguards to protect the property and adjacent properties from damage.



Seismic Hazards

Objective: Minimize the potential of loss of life, building and property damage from seismic activity.

Policy 1: In cooperation with the Marion County Building Department, the city should explore the feasibility of developing construction standards and site planning guidelines for mitigating potential damage from seismic activity.

Policy 2: In cooperation with Marion County Building Department, the city should explore the feasibility of evaluating the seismic vulnerability of key public facilities and evaluate mitigation measures.