7.0 ENVIRONMENTAL ELEMENT

7.1 Introduction

The aim of the Environmental Element is to identify, designate and protect the quality of the natural environment to improve the quality of life for Covington residents. In order to balance the need for development with the requirements for wildlife native to the area, the City must adopt land use and implement maintenance protocols consistent with this goal. Recent listing of Chinook salmon as "threatened" under the ESA will, in large part, direct the form of several efforts, through WRIA 9, watershed and other activities.

7.2 Purpose

The purpose of the Environmental Element of the Comprehensive Plan is to articulate the community's commitment to the stewardship of natural resources, and to provide a basis of information upon which to write regulations to guide City decisions that affect the natural environment. The City of Covington recognizes that the natural environment is a complex system of inter-related components including air, water, soils, plants, and animals. All of these systems are affected by human activity. The value of this understanding is to ensure that the relationship between Covington residents and the natural environment is a mutually supportive one, balancing competing objectives to the maximum extent possible.

7.3 Planning Context

7.3.1 Growth Management Act

The State GMA contains the following goal:

to "... protect the environment and to enhance the state's high quality of life, including air and water quality, and the availability of water."

To implement this goal, the GMA contains specific requirements for the designation and protection of "critical areas," defined by the GMA as wetlands, areas with recharging effect on aquifers used for potable water, fish and wildlife habitat conservation areas, frequently flooded areas, and geologically hazardous areas. The

GMA requires jurisdictions to identify critical areas and adopt regulations to protect those areas.

In 1995, the state Legislature updated the Act to require jurisdictions to review and, if needed, revise their critical areas policies and development regulations (RCW 36.70A.172). Specific requirements of the 1995 update require jurisdictions to:

- Incorporate the Best Available Science when developing policies and regulations to protect the functions and values of critical areas; and
- Give special consideration to conservation or protection measures to preserve or enhance anadromous fisheries.

Rules found in WAC 365-195-900 through 925 provide guidance for jurisdictions in identifying and including Best Available Science in updating policies and demonstrating that "special consideration" has been given to anadromous fisheries (including salmon).

7.3.2 Near-Term Action Agenda for Salmon Habitat Conservation (WRIA 9)

In May 2002, the Green/Duwamish and Central Puget Sound Water Resource Inventory Area 9 (WRIA 9) Steering Committee produced a document titled Near-Term Action Agenda for Salmon Habitat Conservation (NTAA). The NTAA recommends projects, policies, and programs for WRIA 9 that have a high potential for benefiting salmon. Actions are focused on Chinook salmon and bull trout, which were listed as threatened under the federal ESA in 1999 (see separate discussion of the ESA in Section 7.3.3). Its recommendations are based on the scientific foundation of the WRIA 9 Habitat Limiting Factors and Reconnaissance Assessment Report, produced in December 2000.

The NTAA provides guidance for salmon habitat conservation in the WRIA 9 watershed and is intended to be used by local jurisdictions in setting resource protection priorities over the next 2 to 4 years. The City of Covington adopted the NTAA by reference in this Comprehensive Plan; therefore, the goals and policies set forth in the NTAA are considered a component of the Environmental Element. Furthermore, by adopting by reference this document, the City of Covington meets GMA requirements to identify and include Best Available Science in updating policies and demonstrating that "special consideration" has been given to anadromous fisheries.

7.3.3 Endangered Species Act (ESA)

The ESA was adopted in 1973 in an effort to protect rare species of plants and animals from the threat of extinction. In March of 1999, the NMFS declared the Puget Sound Chinook Salmon "threatened" under the authority of the ESA. This designation will require that private and government entities throughout the Puget Sound Region modify the way in which they conduct business to promote survival and recovery of Chinook salmon. The City of Covington lies within the Duwamish River Basin in WRIA 9. Big Soos Creek and Covington Creek, which flow through the City, provide habitat for Chinook and coho salmon. Jenkins Creek provides habitat for coho salmon. These waters also provide habitat for chum salmon, steelhead and cutthroat trout. Streams within the City of Covington that do not directly provide spawning or rearing habitat for Chinook, do provide instream flows for the larger streams. Therefore, it is important for the City to protect water quality and flows in these streams, as well.

Three recommended approaches for compliance with the ESA are listed below:

1. For actions that involve funding, permitting or approval by a federal agency, Section 7 of the ESA requires intergovernmental consultation with the agency responsible for recovery of a listed species; in the case of Chinook salmon, the NMFS. These consultations generally lead to the development of a "biological opinion" discussing the Agency's concerns in regard to potential impacts to listed species and any mitigation measures required to minimize these impacts. They can also lead to denial of a project, if unavoidable impacts to listed species would be too severe.

2. Private or government entities concerned about their liability for "take" of listed species under Section 9 of the ESA can develop Habitat Conservation Plans (HCP's), which describe in detail the steps the entity will take during the course of its day to day operations to minimize "incidental take" of listed species. Habitat Conservation Plans are developed in cooperation with the federal agency responsible for protection of the listed species. Once a Habitat Conservation Plan is approved by the federal services, an "Incidental Take Permit" is issued. These permits allow a specified amount of "take" of a listed species under specific circumstances. They contain detailed requirements for reporting of take on a regular basis. The City of Covington's small size and relatively recent incorporation would probably preclude development of a Habitat Conservation Plan at this time. The City may, however

wish to incorporate certain aspects of HCPs produced by neighboring governmental entities and corporations in development of regulations designed to comply with Section 4(d) of the ESA.

3. Under Section 4(d) of the ESA, the listing agency is required to propose and publish rules that will aid private citizens, corporations and local governments in development of protocols for the execution of their usual and accustomed activities while promoting preservation and recovery of the listed species. In the case of the City of Covington, these protocols would be developed for land-use decisions, maintenance of roads, water, sewer and drainage facilities, and protection of the stream corridors on Big Soos, Covington and Jenkins Creeks.

King County is a member of a Tri-County Group (with Snohomish and Pierce Counties), that is working with NMFS on the 4(d) rule for Chinook salmon. A proposed 4(d) rule was published by NMFS in the Federal Register in early January. The final rule should be promulgated by the end of June 2000.

King County is investigating a wide range of land-use and management options for compliance with the 4(d) Rules. The City of Covington will elect to maintain and fund programs for which it presently is responsible. Responsibility and funding for activities that will affect the entire watershed would be pooled with neighboring jurisdictions, and the City will contribute information and resources as necessary. Regional planning and conservation principals will be developed on the Tri County level. Participation in WRIA 9 planning will be a pooled responsibility with contributions from the City. King County, or another watershed-wide entity, should be responsible for preparation and submission of complete WRIA plans to NMFS.

7.4 Critical Areas Inventory

This section is divided into the following categories for purposes of discussion and mapping: the natural water system (watersheds, sub-basins, lakes and wetlands, streams and floodplains, and aquifer recharge areas); soils and topography (including geologic hazard areas); and plants and animals (including wildlife habitat).

The critical areas located in the City of Covington include streams and wetlands, erosion hazard areas, and aquifer recharge areas which underlay most of the City. Flood plains, landslide areas, erosion and seismic hazard areas are generally associated with Big Soos Creek and Little Soos Creek. According to the Tahoma Raven Heights and Soos Creek Communities Plan, sensitive areas

that are of significant concern in the Covington area and surrounding communities are stream corridors, flood hazard areas, aquifer recharge areas, and wildlife habitats.

7.4.1 Natural Water System

The natural water system in Covington, as shown in Figure 7.1, exists primarily within the Green River watershed. Watersheds are comprised of sub-basins, wetlands, lakes, and a dynamic exchange between the surface and ground water flows. Covington is located within the sub-basins associated with Soos Creek and Jenkins Creek. The primary sources of water for Covington's lakes and wetlands is direct precipitation, surface water runoff, flows from rivers and streams, and subsurface flows of groundwater. The water leaves wetlands and lakes primarily through direct evaporation, surface outflows, and seepage into groundwater.

Protection of the water system is important for many reasons, including protection of drinking water, as well as flood control and habitat protection. The source of Covington's drinking water has historically been groundwater. The benefits of watershed protection are discussed below.

Watersheds

Covington rests in the 25 square mile combined Soos Creek and Jenkins Creek Basins. The larger eastern half of the City of Covington, including a majority of the proposed downtown area is located in the Jenkins Creek Basin. It drains in a southwesterly direction into tributaries of Big Soos Creek, which originates in the northeast corner of the glacially molded upland known as the Covington Drift Plain, then joins the Green River east of Auburn. The west portion of the City north of SR 18 is mostly located within the Soos Creek Basin.

Lakes and Wetlands

Covington's lakes and wetlands and associated riparian areas, shown in Figure 7.2, perform valuable functions within Covington's ecosystem. They receive surface water from the surrounding area and filter pollutants entering the system by a combination of physical, chemical and biological processes. They also provide drainage, flood storage, and wildlife habitat. The historic practice of clearing of vegetation in wetlands, or grading, filling, draining, and other land development activities, has, in some cases, destroyed the wetlands and streams, or in other cases decreased their ability to provide these important functions.

Pursuant to Section 404 of the federal Clean Water Act, the U.S. Army Corps of Engineers defines wetlands as follows:

"those areas that are inundated or saturated by ground or surface water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Where the vegetation has been removed or substantially altered, a wetland shall be determined by the presence or evidence of hydric or organic soil, or by documentation, such as aerial photographs, of the previous existence of wetland vegetation."

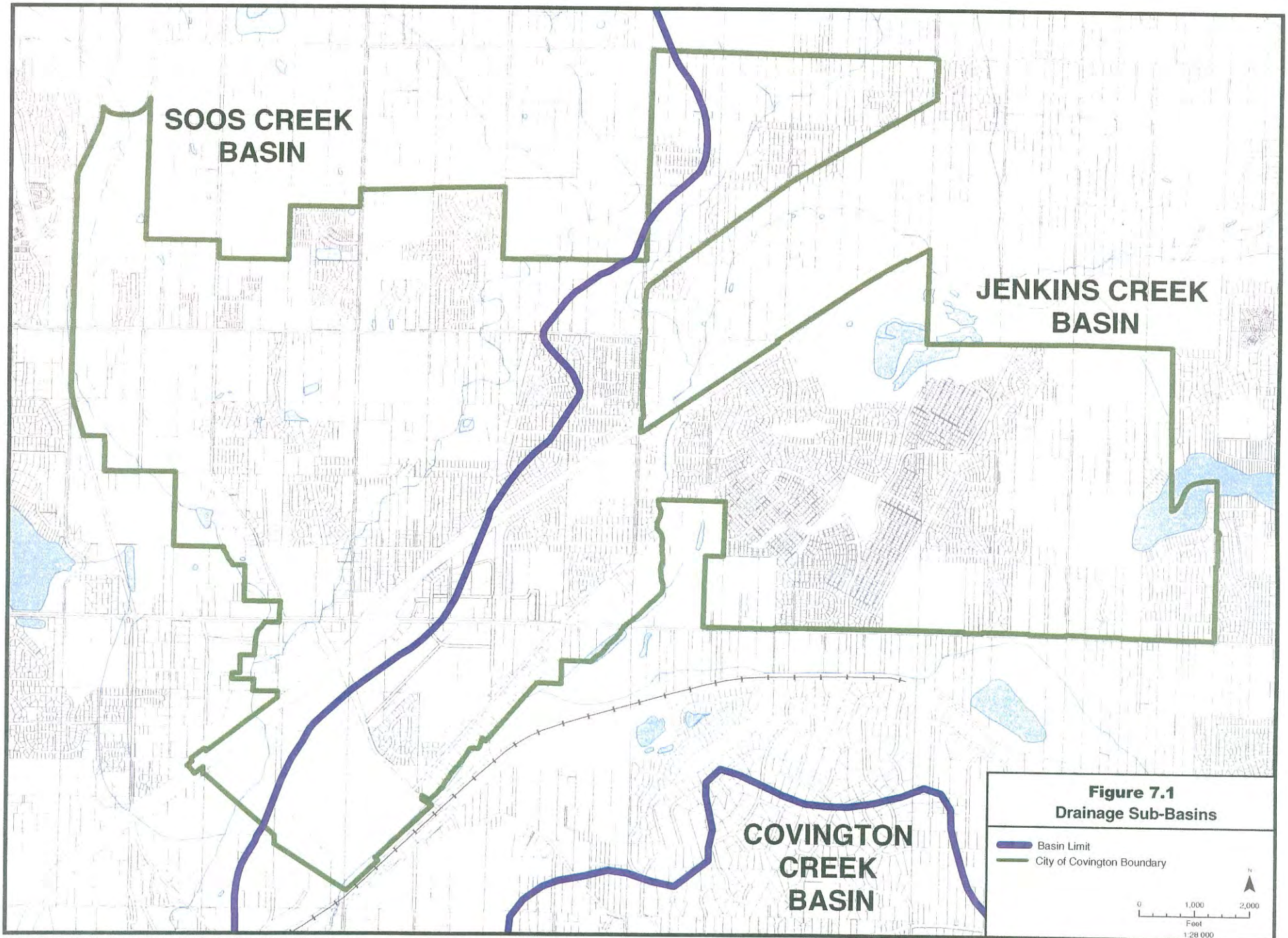
Wetlands in Covington were mapped as part of the King County Wetlands inventory, and can be found in the King County Sensitive Areas Map Folio. This inventory focused on the larger wetlands of the County. In 2002, an inventory of wetland and stream resources within the City limits was completed. Thirty-two wetland areas were identified.

Most wetlands in Covington are generally associated with major streams and tributaries, and Pipe Lake. The larger wetland areas occur along Big Soos Creek on the west side of the City, along Jenkins Creek adjacent to Wax Road just south of Kent-Kangley, and along the upper portions of Jenkins Creek in the north part of the City. Pipe Lake is 52-acre lake with a shoreline wetland and is the only lake located within the current City limits. A portion of Pipe Lake is located in the City of Covington, with the balance located in the City of Maple Valley. The lake has a mean depth of 27 feet and a maximum depth of 65 feet. It does have one small easement for public access, and is currently not managed for any particular species, except for hydrilla control program.

Streams

Streams in Covington, as shown in Figure 7.2, are regulated by the CDC, Chapter 21A.24, Environmentally Sensitive Areas. This chapter defines and classifies streams and sets forth buffer widths and development standards for streams as follows:

- Class 1 streams are those inventoried as "Shorelines of the State" under King County's Shorelines Management Master Program. They usually require a 100-foot buffer of vegetation as measured from the ordinary high water mark.
- Class 2 streams are those smaller than Class 1 streams that flow year-round during years of normal rainfall or those



Source: King County GIS, Gray & Osborne, EDAW, City of Covington, December 16, 2003

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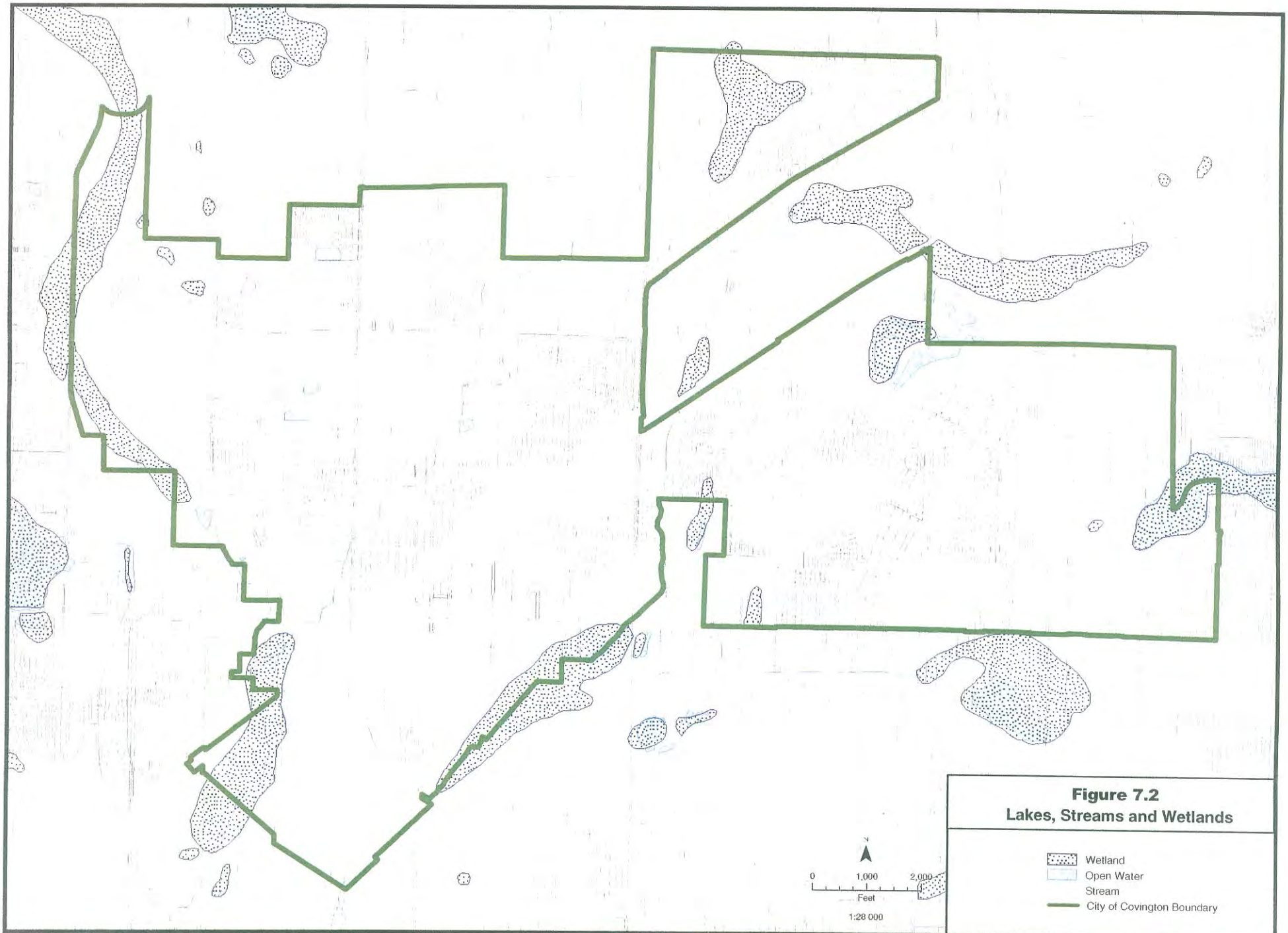

Figure 7.2
Lakes, Streams and Wetlands

Source: King County GIS, Gray & Osborne, EDAW, City of Covington, December 16, 2003.

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that are used by salmonids. Class 2 streams with salmonids usually require a 100-foot buffer of vegetation as measured from the ordinary high water mark. Class 2 streams without salmonids usually require a 50-foot buffer.

- Class 3 streams are those that are intermittent or ephemeral during years of normal rainfall and are not used by salmonids. Class 3 streams usually require a 25-foot buffer of vegetation as measured from the ordinary high water mark.

- Unclassified streams are those for which a water course has been identified but for which the defining characteristics of a Class 1, 2 or 3 stream have not been determined. Further study is necessary to classify these streams.

The Green River is a Class 1 stream located several miles south of Covington, connected to many of Covington's streams through Jenkins Creek and the Soos Creeks. The Green River has some of the best water quality in all of Puget Sound. The streams in Covington that feed into the Green River are listed and described below.

Jenkins Creek: portions are classified as a state shoreline and thus meet the criteria for Class 1 streams; the remaining segments meet the criteria for Class 2 streams due to their perennial nature and presence of salmonids. Portions of Jenkins Creek were "daylighted" through the King County Surface Water Management Program.

Big Soos Creek: portions south of SR 18 to the Green River are classified as a state shoreline and thus meet the criteria for Class 1 streams; the remaining segments meet the criteria for Class 2 streams due to their perennial nature and presence of salmonids. A portion of this creek was also "daylighted" by King County.

Little Soos Creek: is classified as a Class 2 stream with salmonids north of SR 18.

Most of the streams in the Soos Creek and Jenkins Creek sub-basins have relatively good water quality. Only localized water quality degradation has been observed, such as high fecal coliform levels in some small creeks, and concentrated nutrient levels in Pipe Lake. However, as one of the fastest developing areas in the Green River Basin, Covington is beginning to see the surface water effects of development. These effects are mainly in the form of increased stormwater runoff, but also include flooding, erosion, sedimentation, destruction of fish habitat and water quality degradation. These problems are caused by many types of development action, (e.g., filling or siting development in

wetlands, stream channelizations, loss of forested stream corridors, fish passage barriers, dewatering, and high flows and sediment movement). The long term effects of surface water problems include rising pollutant levels that can pollute domestic water supply wells (especially in areas with coarse gravely soils). Under these conditions, the use of streams for water supply, fish habitat and recreation becomes less possible in the future.

Flood Plains

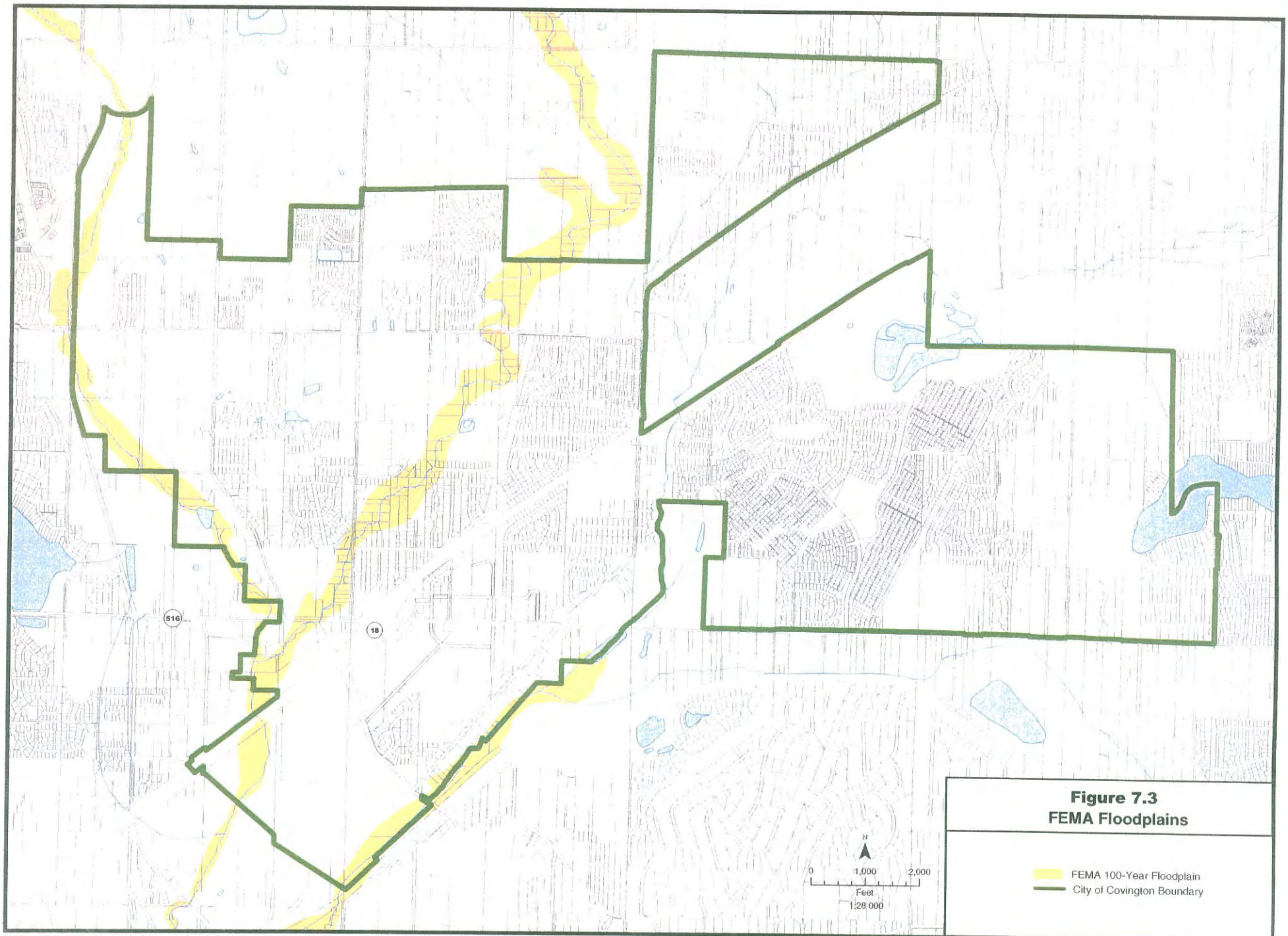
As shown in Figure 7.3, the 100-year flood plains in the City as mapped by the Federal Emergency Management Agency (FEMA) occur along Big Soos Creek, Little Soos Creek, and the southern reaches of Jenkins Creek. During significant storm events, the creeks can overflows their banks and spread out into adjacent lands. Water overflows the streams' banks and enters wetland soils which act like groundwater reservoirs, storing surplus water as groundwater during wet periods and discharging this stored water into streams later to augment base stream flows.

Aquifer Recharge Areas

Aquifer recharge areas, shown in Figure 7.4, are surface portions of the land that have high soil permeability and permit the percolation of rainwater into subsurface saturated zones, or aquifers. The aquifer recharge areas that are of concern are those "areas highly susceptible to groundwater contamination," as mapped by King County. The aquifers affected by these recharge areas are one of the sources of drinking water in Covington and surrounding communities. In the last decade, development in the Cedar River Basin, for example, is estimated to have reduced groundwater recharge by 5 to 10 percent. It is likely that a similar condition exists in the drainage basins within and around the City.

The aquifer recharge areas in Covington cover basically the entire City. These areas are characterized by highly pervious glacial soils which drain rapidly into the underlying water-bearing soil layers. The recharge areas are classified as either High Recharge or Medium Recharge areas. The High Recharge areas cover the majority of the City's area. The Medium Recharge areas occur around SE 256th Street in the west portion of the City and adjacent to Pipe Lake on the east. Care must be taken to ensure future site development mitigates the potential for pollutant infiltration into the underlying aquifer.

The major concern with recharge areas is maintaining the appropriate density and type or intensity of development that would not threaten groundwater (e.g., generators of hazardous waste, etc.). For example, the Covington Water District has a well



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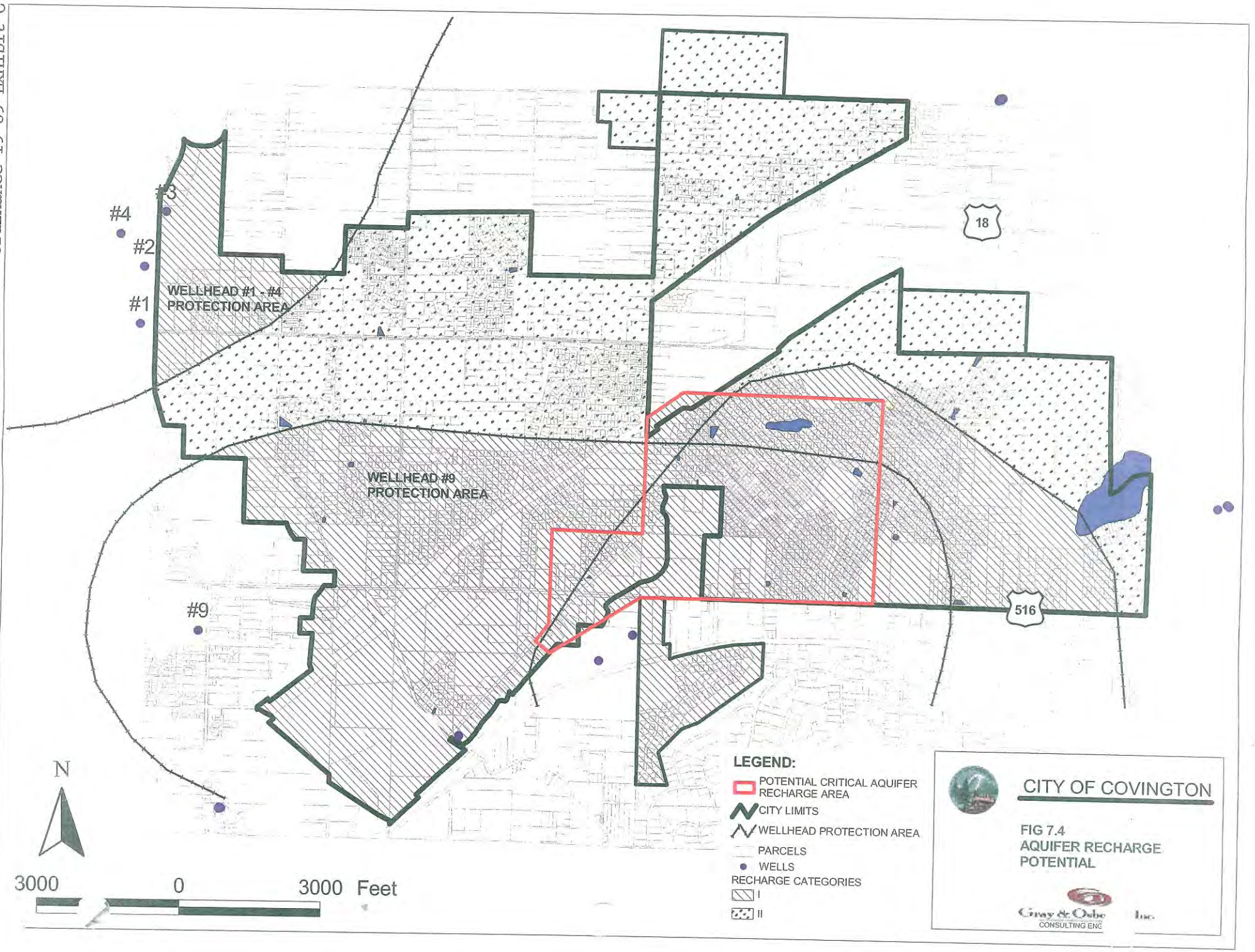


head located adjacent to the regional electrical substation near the intersection of Covington Way SE and SE Wax Road. The entire area of downtown and the adjacent industrial lands in the south end of the City all occur above an area of High Recharge.

7.4.2 Soils and Topography

Soils and topography are important source of information for determining the degree to which an area is susceptible to geologic hazards. Geologic hazards include erosion hazard areas, landslide hazard areas, and seismic hazard areas. Steep slopes coupled with certain soils and drainage characteristics indicate potential areas of landslides and other geologic instability.

Soils

The geology of the area is largely the result of prehistoric glacial activity and subsequent lee retreats. The United States Department of Agriculture and the Soil Survey of King County, mapped and analyzed the soils in the area. The most common soil type in the area is known as the Alderwood series, which includes moderately well drained gravely sandy loams that are 24 to 40 inches deep over consolidated glacial till. The next most common type, is the Everett series. Everett soils are gravely and are underlain by sand and gravel. In certain areas, principally basins and lowlands, organic materials, including peat, can occur in depths up to ten feet.

Geologic Hazard Areas

The City of Covington has gently rolling terrain, with a few areas prone to erosion located in the west portion of the City. Most of the geologic hazard areas are located along Big Soos Creek. Topographic features are shown in Figure 7.5.

Landslide Hazard Areas. Landslide hazard areas within the City of Covington are shown in Figure 7.6. Landslide hazard areas are generally those areas subject to a severe risk of landslide, due to a combination of factors, including:

1. Any area with a combination of:

   a. slopes 15 percent or greater

   b. impermeable subsurface material (typically silt and clay), frequently interbedded with granular soils (predominantly sand and gravel)

   c. presence of springs or seeping groundwater during the wet season.

2. Steep slopes of 40 percent or greater.

3. Any areas located on a landslide feature that has shown movement during the past 10,000 years or which is underlain by mass wastage debris.

Landslide hazard areas in Covington roughly correspond to the erosion hazard areas discussed above.

Erosion Hazard Areas. Erosion hazard areas within the City of Covington are shown in Figure 7.7. Erosion hazard areas are those areas containing soils which have historically led to a severe, or very severe, erosion hazard. Erosion Hazard Areas are found in the northwest corner of the City and are associated with some extreme topography along Big Soos Creek. It is recommended that development in these areas be either clustered, at low density, or avoided.

Seismic Hazard Areas. Seismic hazard areas within the City of Covington are shown in Figure 7.8. Seismic hazard areas are those areas subject to severe risk of earthquake damage as a result of seismically induced settlement or soil liquefaction. These conditions occur in areas underlain by "cohesionless" soils of low density, usually in association with a shallow groundwater table.

The seismic hazard areas in Covington run along the entire length of Big Soos Creek as it passes through the City.

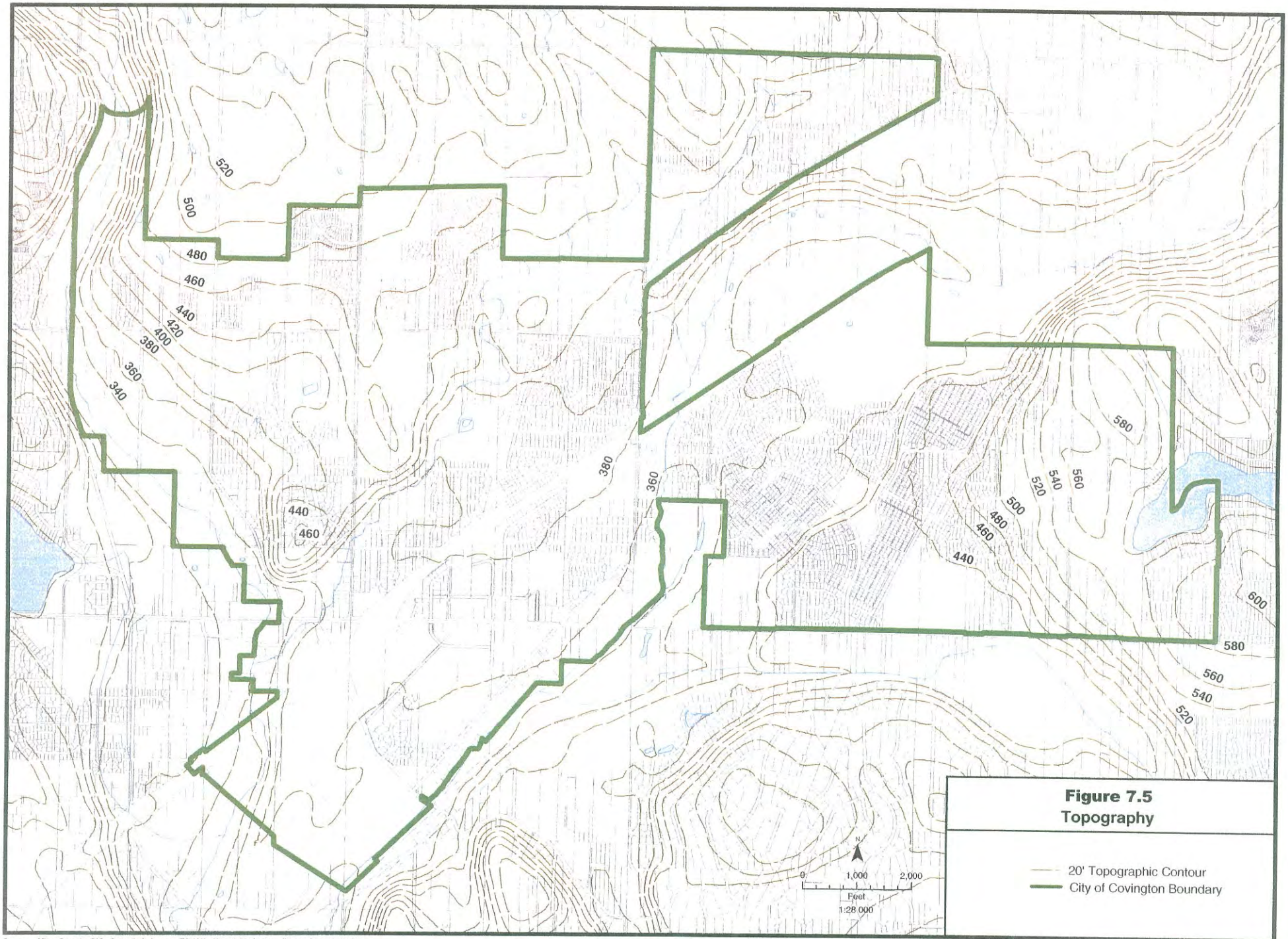
7.4.3 Plants and Animals

Plant Life

Natural vegetation in Covington consists of primarily second and third-growth vine maple, Douglas fir, western hemlock and western red cedar, as well as many plant species associated with these lowland coniferous forests. Meadows and wetland plant species are also fairly common.

Fish and Wildlife

Covington has a wide variety of fish in its waters. The Green River, and many of its tributaries, contain salmon that have just recently been listed as endangered. Most common small fur animals can found in Covington, including opossum, skunk, cottontail rabbit and pheasant. Along the waterways, beaver, river otter, raccoon, and muskrat are not uncommon.



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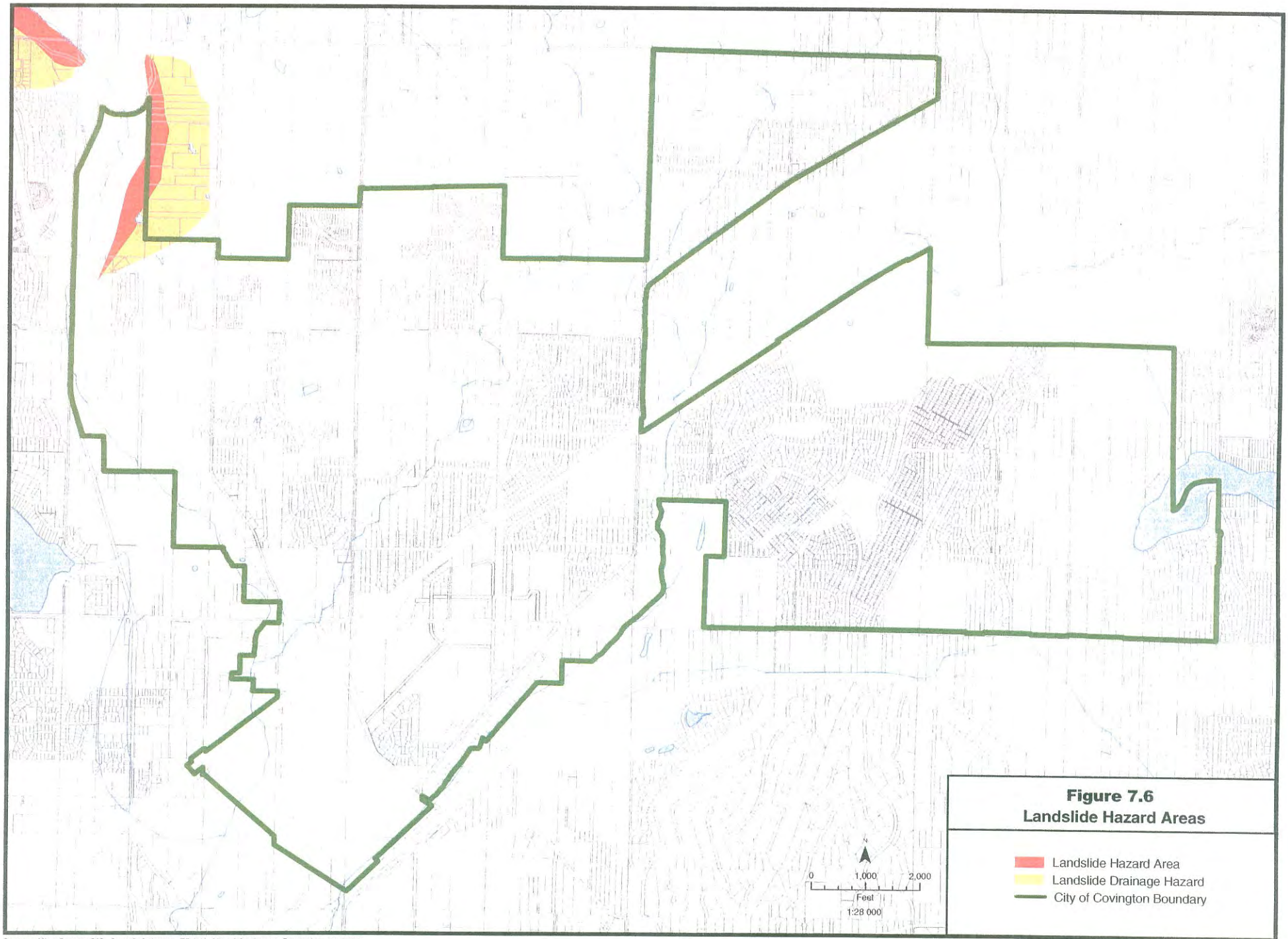

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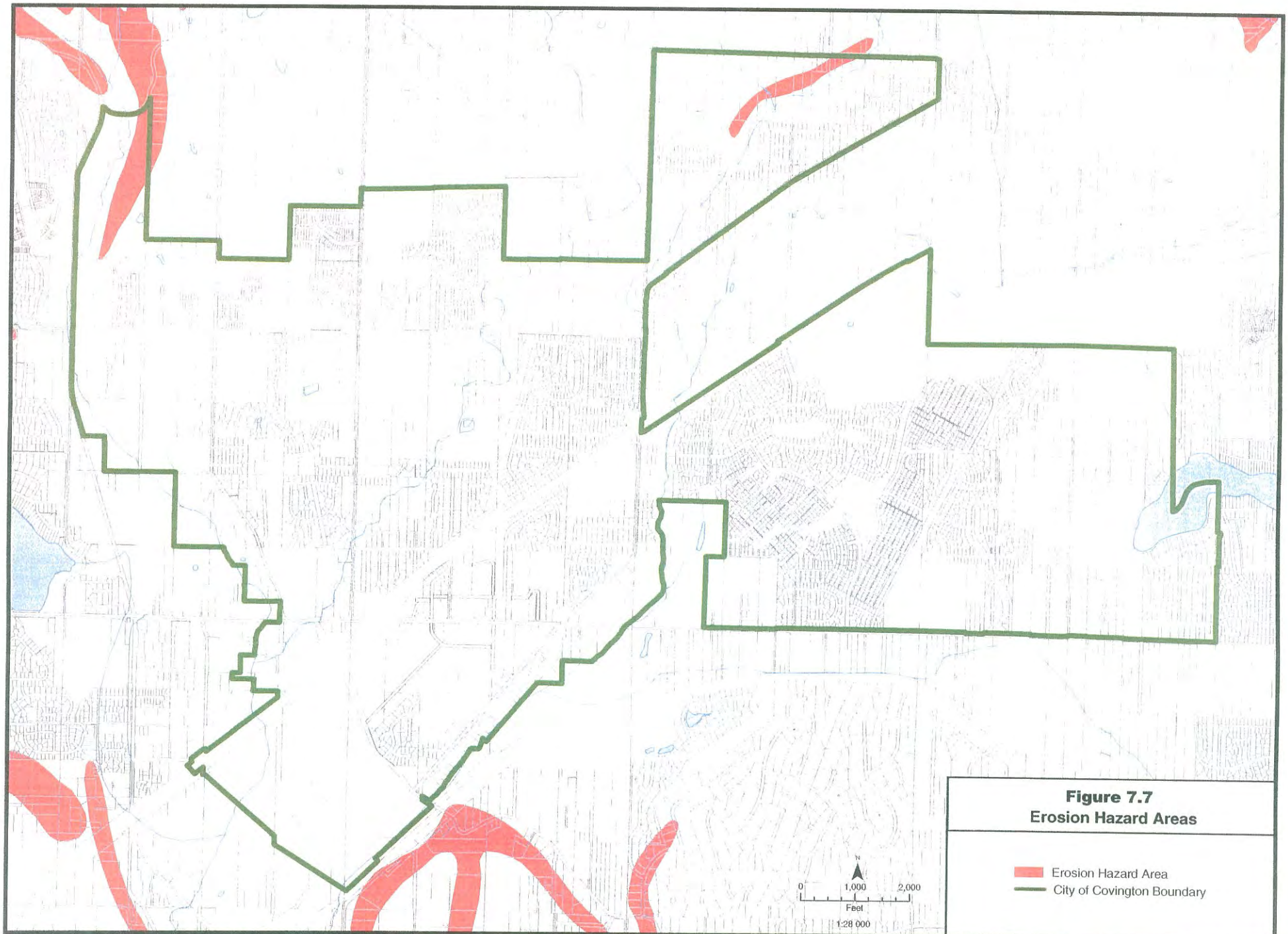

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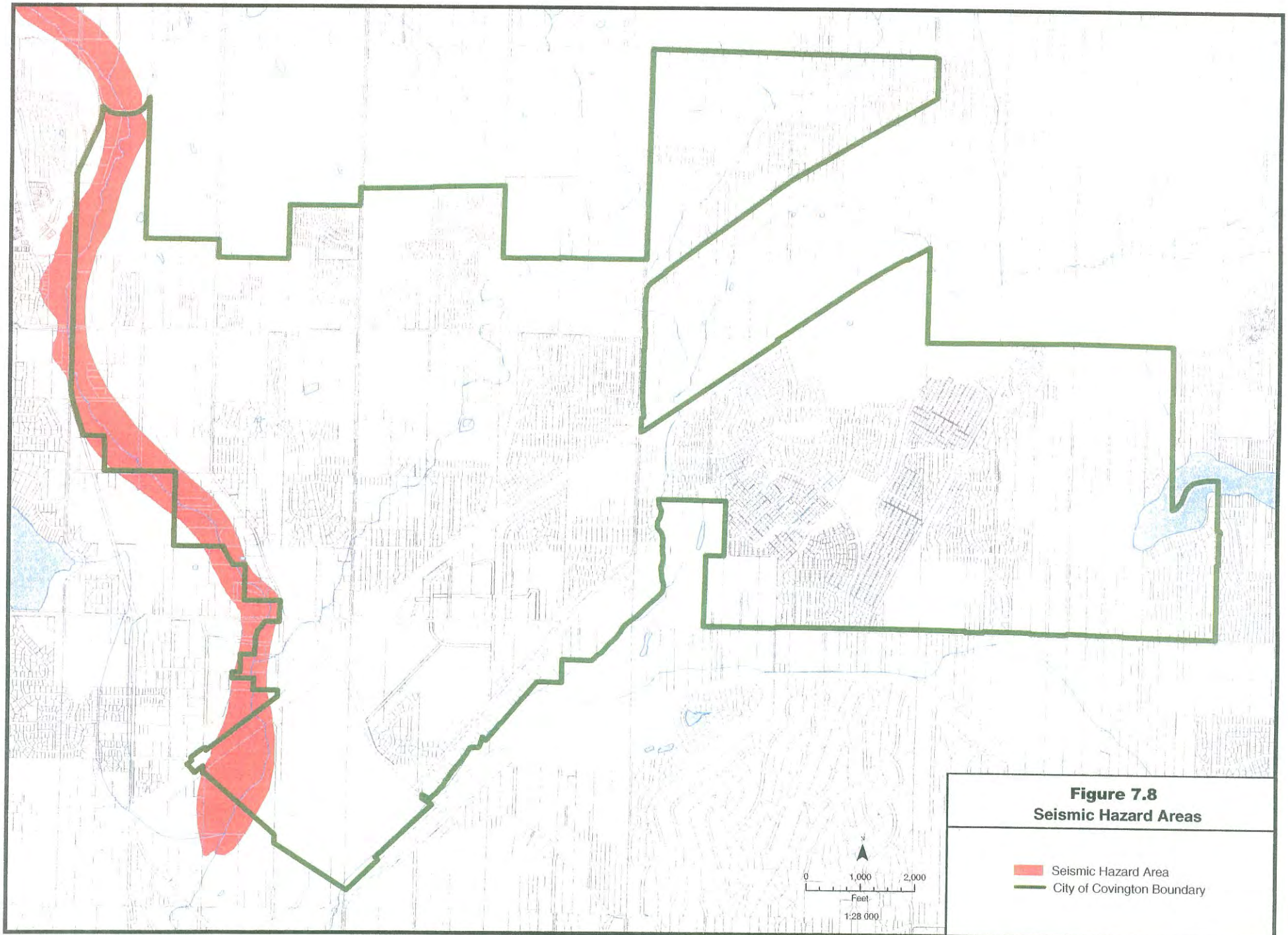

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7.4.4 Potentially Constrained Lands

There is a significant amount of land within Covington's UGA that is potentially unsuitable for future development. It is important to understand how potential development constraints may impact future growth and development patterns. This Comprehensive Plan defines Potentially Constrained Lands as the geographic union of floodplains, wetlands and associated buffers, stream buffers, landslide hazard areas, seismic hazard areas, erosion hazard areas, power line easements, and gas line easements. Potentially Constrained Lands within the City of Covington are shown in Figure 7.9. Approximately 800 acres (or 21 percent) of Covington's UGA are potentially constrained. Potentially Constrained Lands are only intended for a generalized analysis of impediments to future development, and are not intended to be a mapped area where development may not occur.

7.4.5 Opportunities

King County offers surface water management advice, training, technical assistance and grant sponsorship to help communities monitor and manage lakes in King County. For example, surface water runoff and pollution can be maintained by establishing buffers of filtering native plants around lakes' shorelines and along banks of inflowing streams. Plants also prevent shoreline erosion, and improve fish and wildlife habitat. Developing adequate land clearing, grading, buffering and sensitive areas regulations which protect these resources will be a key challenge to the Comprehensive Plan.

7.5 Goals and Policies

7.5.1 Incentives, Planning and Regulations

EVG 1.0 Foster recognition of the significant role played by natural features and systems in determining the overall environmental quality and livability of the community.

EVP 1.1 Protect and enhance environmentally sensitive areas via the adoption of City regulations and programs that encourage well-designed land-use patterns such as clustering and planned unit development. Use such land-use patterns to concentrate higher urban land-use densities and intensity of uses in specified areas in order to preserve natural features such as large wetlands, streams, steep slopes, and wooded areas.

EVP 1.2 *Ensure that the City's environmental policies and regulations comply with state and federal environmental protection regulations regarding air and water quality, hazardous materials, noise and wildlife and fisheries resources and habitat protection. In particular, the City shall include best available science in developing policies and development regulations to protect the functions and values of critical areas consistent with RCW 36.70A.172.*

EVP 1.3 *Demonstrate support for environmental quality in land-use plans, capital improvement programs, code enforcement, implementation programs, development regulations, and site plan review to ensure that local land-use management is consistent with the City's overall natural resource goals.*

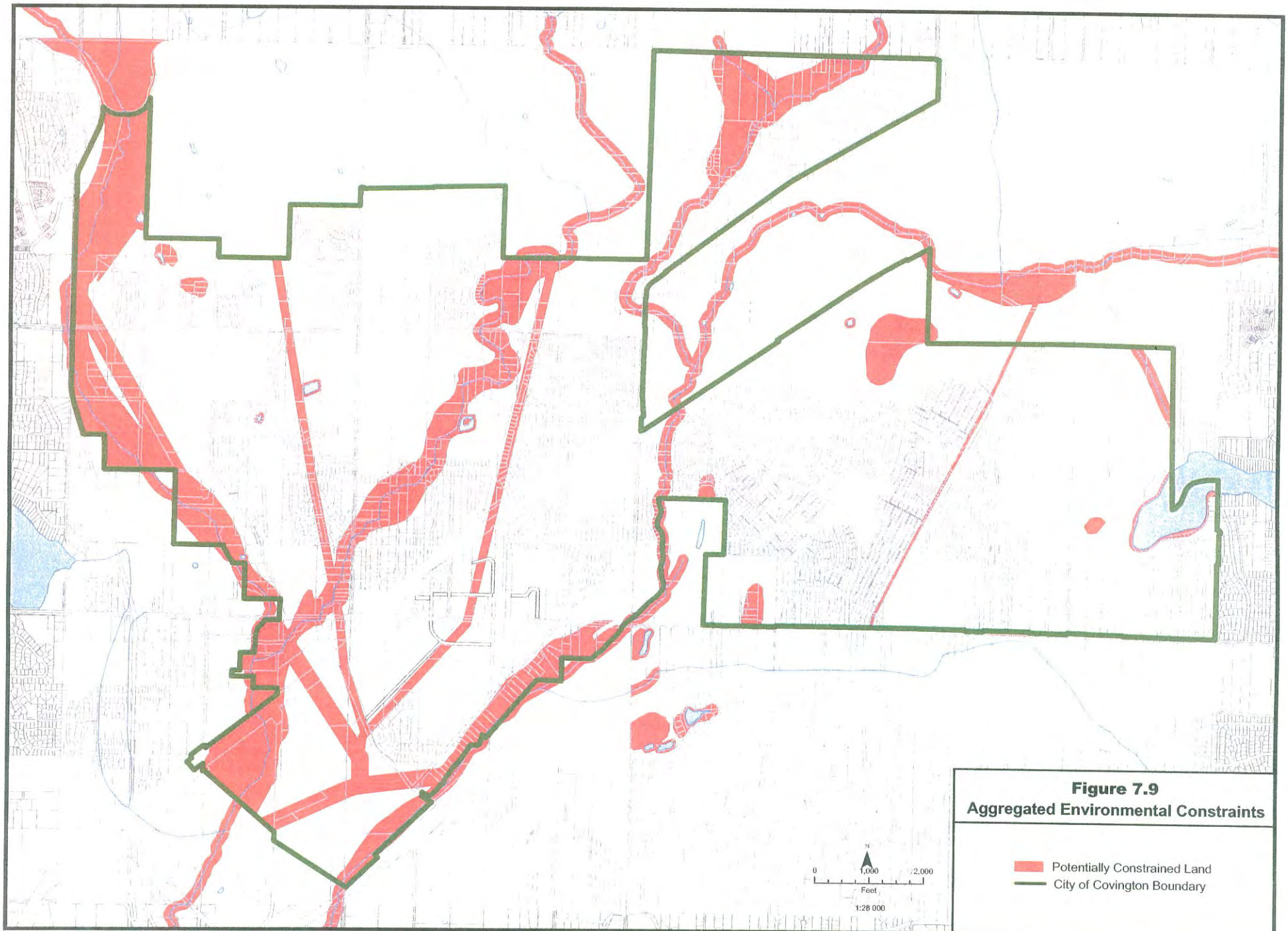
EVP 1.4 *Support waste reduction and recycling programs in City facilities and in the city at large.*

EVP 1.5 *Ensure that decisions regarding fundamental site design are made prior to the initiation of land surface modifications.*

EVP 1.6 *Start site restoration if land surface modification violates adopted policy or if development does not ensure within a reasonable period of time.*

EVP 1.7 *Provide incentives for environmental protection and compliance with environmental regulations. Foster greater cooperation and education among City staff, developers, and other citizens. Determine the effectiveness of incentives by establishing monitoring programs.*

EVP 1.8 *Protect and enhance environmental quality via maintenance of accurate and up-to-date environmental data, and by City support of environmental management programs, park master programs, and environmental education and incentive programs.*



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EVP 1.9 *Provide to property owners and prospective property owners general information concerning natural resources, hazard areas, and associated regulations. Ensure developers provide site-specific environmental information to identify possible on- and off-site constraints and special development procedures.*

EVP 1.10 *To the extent possible or feasible, require that developers and property owners provide to the City accurate and valid environmental information.*

EVP 1.11 *Use incentives to protect or enhance the natural environment whenever practicable. Incentives may include buffer averaging, density bonuses, lower tax assessment for land preserved in open space (King County Public Benefit Rating System), and appropriate non-regulatory measures.*

EVP 1.12 *Use acquisition, enhancement, incentive programs, and appropriate regulations to preserve critical areas as permanent open space where development may pose hazards to health, property, important ecological functions, or environmental quality.*

EVP 1.13 *Establish regulations to prevent unmitigated significant adverse impacts on natural features shall be based on the importance of their functions and values as well as their sensitivity to human activity.*

EVP 1.14 *Assign zoning designations which will protect natural resources and environmentally sensitive areas to any additional land annexed to the City.*

EVP 1.15 *Maintain current versions of critical areas maps and potentially constrained lands maps.*

EVP 1.16 *Develop appropriate regulations to protect those productive agricultural uses which the City Council has designated as having long-term commercial significance for agricultural production.*

EVP 1.17 Conduct a detailed review of the King County Chapter of Environmentally Sensitive Areas and the County Shoreline Plan, both currently adopted by the City, to assure they meet current standards. In addition, the City will develop a wellhead protection ordinance.

7.5.2 General Water Resources Protection

EVG 2.0 Insure that land-use development policies protect the City's water quality.

EVP 2.1 Reduce the environmentally detrimental effects of present and future runoff in order to maintain or improve stream habitat wetlands, particularly water quality, and protected water-related uses.

EVP 2.2 Integrate the management of surface water with other agencies who provide the City's drinking water and wastewater treatment in order to provide a comprehensive, efficient water resource system. This shall include playing a role in the Countywide effort to protect and enhance surface waters on a watershed basis by working with the State Department of Fish and Wildlife, City of Kent, Covington Water District and King County Water District #111 to analyze water quality and quantity problems and their impacts on fish and wildlife habitat, as well as to control stormwater runoff problems in local watersheds.

EVP 2.3 Work cooperatively with King County Surface Water Management Division, the Washington Department of Ecology, and other affected jurisdictions and tribes to implement water quality management strategies and to comply with Municipal National Pollutant Discharge Elimination System regulations to address non-point pollution.

EVP 2.4 Use incentives, regulations, and programs to manage water resources (groundwater, streams, lakes, and wetlands) and to protect and enhance their multiple beneficial uses,

including flood and erosion hazard reduction, aesthetics, recreation, water supply, gardening, and fish and wildlife habitat.

EVP 2.5 *Regulate development in a manner that maintains the ecological and hydrologic function of water resources based on pre-development quality and quantity measurements. This includes avoiding negative adverse impacts on water quality or water quantity. Surface water management facilities that use natural streams and lakes for storage should ensure that those natural features are not adversely impacted by their inclusion in the surface water system.*

EVP 2.6 *Actively promote conservation measures (e.g. low-flow shower heads, lawn watering schedules) of water resources in cooperation with schools, business owners, residents, adjacent jurisdictions and water purveyors whose water source and service area are linked to the regional aquifer.*

EVP 2.7 *Utilize erosion control measures and appropriate mitigation measures for grading and any work in or adjacent to wetlands, streams or lakes and their associated buffers.*

EVP 2.8 *Protect aquifers by ensuring that development is adequately mitigated with regard to pollutant infiltration.*

7.5.3 Groundwater

EVG 3.0 Protect the quality and quantity of groundwater used for public water supplies in cooperative efforts with the City of Kent, Soos Creek Water and Sewer District, Covington Water District and King County Water District #111.

EVP 3.1 *Develop a City of Covington Hazard Area Development Limitations Map based on existing information contained in the Wellhead Protection Plans of the City of Kent, Covington Water District and King County Water District #111, and as new*

information about recharge areas and wellhead protection areas becomes available.

EVP 3.2 *Ensure that uses, densities, and development patterns support the goals and policies of the Green-Duwamish Watershed Nonpoint Action Plan.*

EVP 3.3 *Account for the potential impacts of land-use actions on aquifers that serve as potable water supplies in order to avoid the depletion or degradation of aquifers needed for potable water supply. The potential for aquifer contamination shall be identified, and a detailed mitigation plan shall be developed and implemented to compensate for the potential lost supply. Water contamination potential will be determined through coordination with the King County Water and Land Resources Division's clean water program.*

EVP 3.4 *Protect groundwater recharge quality by working with groundwater users and purveyors (including the County and neighboring jurisdictions) to implement appropriate wellhead protection ordinances and programs.*

EVP 3.5 *Protect groundwater recharge quantity by promoting methods that infiltrate runoff where site conditions permit, except where potential groundwater contamination cannot be prevented by pollution source controls and stormwater pretreatment.*

EVP 3.6 *Protect regional groundwater quality by requiring the use of Best Management Practices (BMPs) for future residential, commercial and industrial development within designated wellhead protection areas.*

EVP 3.7 *Protect regional groundwater quality by requiring stormwater treatment facilities to meet or exceed Department of Ecology and King County Surface Water Design Manual standards.*

EVP 3.8 *Recognizing existing stormwater regulations do not require aquifer recharge, Covington will protect regional groundwater quantity by developing stormwater management and groundwater protection policy in cooperation with the City of Kent, City of Maple Valley, Covington Water District and King County Water District #111. This policy will require all future development within the designated wellhead protection area to maintain aquifer levels through stormwater infiltration and other BMPs that ensure recharge to the aquifer.*

7.5.4 Streams and Lakes

EVG 4.0 Develop and implement a comprehensive water quality plan that will protect and restore stream habitats, and other surface and groundwater resources. The intent is to protect and enhance water resources for multiple benefits, including recreation, fish and wildlife resources and habitat, flood protection, water supply, and open space

EVP 4.1 *Maintain major and minor streams in their natural state. Rehabilitate degraded channels and banks via public programs and in conjunction with proposed new development.*

EVP 4.2 *Evaluate the adequacy of the existing building setback and stream buffer requirements in relation to goals for water resource and fisheries and wildlife resource protection. When necessary, modify the requirements to achieve goals.*

EVP 4.3 *Protect and restore stream channels for their hydraulic and ecological functions, as well as their aesthetic value as discussed in the Stormwater Management Plan. Diversion of stream channels through culverts should be discouraged. Stream channels shall not be diverted through culverts when there are reasonable alternatives and subject to approval of appropriate jurisdictions. Where culverts are used, the installation and type of culvert*

should allow passage by, and not be injurious to, migratory fish.

EVP 4.4 *In partnership with King County and other jurisdictions, promote restoration of stream channels and associated riparian areas to enhance water quality and fish and wildlife habitat and to mitigate flooding and erosion. The City shall encourage such restoration as a condition of development adjacent to streams.*

EVP 4.5 *Comply with the standards set forth in the 1998 King County Surface Water Design Manual. These standards should be implemented in a way most suited to the local environment to protect the biological health and diversity of the Cedar River and Soos Creek Basins.*

EVP 4.6 *Protect and enhance lakes by proper management of watersheds and shorelines, by improvements in water quality, by removal of invasive plant species, and by restoration of fish and wildlife habitat.*

7.5.5 Endangered Species Act Compliance

EVG 5.0 Comply with the requirements of the Endangered Species Act through adoption of land-use policies and infrastructure maintenance protocols designed to promote recovery of Chinook salmon.

EVP 5.1 *Protect the City from citizen lawsuits for non-compliance with the ESA through adoption of rules and practices consistent with ESA Section 4(d) Rules promulgated by the National Marine Fisheries Service.*

EVP 5.2 *Develop Inter-Local Agreements with neighboring cities and King County to promote salmon recovery on a watershed scale and county-wide basis.*

EVP 5.3 *Maintain or improve water quality and Chinook salmon habitat in Covington streams through acquisition and restoration of riparian and in-stream areas within its jurisdiction.*

7.5.6 Wetlands

EVG 6.0 Protect wetlands with a standard of no net loss of wetland functions or values within each drainage basin. Wetland functions are natural processes performed by wetlands. Wetlands promote food chain production, provide fish and wildlife habitat, maintain and improve water quality, retain water for recharge and discharge into groundwater aquifers, moderate surface water and storm water flows. Other functions include, but are not limited to those discussed in U.S. Army Corps of Engineers regulations (33 CFR 320.4(b)(2), 1988). Wetland values are estimates, usually subjective, of the benefits of wetlands to society, and include aesthetics, education, scientific research, and recreation.

EVP 6.1 *Maintain the quantity and quality of wetlands via current land-use regulation and review; and increase the quality and quantity of the City's wetlands resource base via incentives and advance planning.*

EVP 6.2 *Protect wetlands not as isolated units, but as ecosystems, and essential elements of watersheds. Base protection measures wetland functions and values, and the effects of on-site and off-site activities.*

EVP 6.3 *Coordinate wetland protection and enhancement plans and actions with adjacent jurisdictions and the Muckleshoot Indian Tribe when jurisdictional boundaries are involved*

EVP 6.4 *Work with King County, the State, and other jurisdictions, tribes and citizen groups to utilize the most current and appropriate Countywide wetlands policies and classification system. Standards for delineating wetlands shall use scientifically accepted technical criteria and field indicators which meet, at minimum, the 1987 Federal Manual for Identifying and Delineating Jurisdictional Wetlands.*

EVP 6.5 *Utilize acquisition, enhancement, and incentive programs independently or in combination to designate wetlands as permanent open space, and to protect and to enhance wetland functions.*

EVP 6.6 *Locate development adjacent to wetlands such that wetland functions are protected, an adequate buffer around the wetlands is provided, and significant adverse impacts to wetlands are prevented.*

EVP 6.7 *Allow alterations to wetlands where necessary to:*

a. *Accomplish a public agency or utility development, utilizing the necessary mitigation measures as detailed in the agency's or utility's Best Management Practices Plan;*

b. *Provide necessary utility and road crossings, utilizing the necessary mitigation measures as detailed in the agency's or utility's Best Management Practices Plan; or*

c. *Avoid denial of reasonable use of the property, provided that all wetland functions are evaluated, the least harmful reasonable alternatives are pursued, and affected significant functions are appropriately mitigated.*

EVP 6.8 *Allow public access to wetlands for scientific, educational, and recreational use, provided the public access trails are carefully sited, sensitive habitats and species are protected, and hydrologic continuity is maintained.*

EVP 6.9 *Protect areas of native vegetation that connect wetland systems, preferably through incentives and appropriate non-regulatory mechanisms.*

EVP 6.10 *Utilize mitigation proposals for wetland functions lost due to development to replace or enhance the lost functions. The goal for these mitigation projects shall be no net loss of wetland functions per drainage basin. Mitigation sites shall be located strategically to alleviate habitat fragmentation.*

EVP 6.11 *Utilize mitigation projects to contribute to an existing wetland system or restore an*

area that was historically a wetland. Where restoration or enhancement of an existing degraded wetland system is proposed, it must result in a net improvement to the functions of the wetland system.

EVP 6.12 Develop special regulations for wetlands created as a result of a surface or stormwater detention facility which are considered wetlands for regulatory purposes.

EVP 6.13 Utilize flexible wetland mitigation requirements to allow for protection of systems or corridors of connected wetlands. A tradeoff of small, isolated wetlands in exchange for a larger connected wetland system can achieve greater resource protection and reduce isolation and fragmentation of wetland habitat.

EVP 6.14 Require developers of projects for which wetland mitigation is required to provide monitoring and maintenance until the success of the site is established. Land used for wetland mitigation shall be preserved in perpetuity. If conditions change such that wetlands can no longer be maintained on the land, it shall be preserved as open space.

7.5.7 Floodplains

EVG 7.0 Preserve the existing hydraulic (flood storage and conveyance) and ecological functions of floodplains, associated with streams, lakes and wetlands to minimize future flood hazards. Where possible, these floodplain areas shall be enhanced or restored.

EVP 7.1 Any floodplain land use and floodplain management activities shall be carried out in accordance with the King County Flood Hazard Reduction Plan or its successor.

7.5.8 Stormwater Management

EVG 8.0 Manage stormwater runoff through a variety of methods, including seasonal clearing restrictions, retention/detention, discharge and infiltration standards, and BMPs, as set forth in The 1998 King County Surface Water Design Manual. Infiltration of

stormwater shall be encouraged where feasible, given geological, engineering, and water quality constraints. Surface water management methods which are land consumptive will need to be balanced with the need to protect the supply of developable land.

EVP 8.1 *Initiate a periodic storm drainage/environmental inspection program to ensure constant maintenance and upkeep of storm systems and ongoing compliance with general environmental processes.*

EVP 8.2 *Manage stormwater runoff caused by development to prevent unmitigated significant adverse impacts to water resources and downstream properties caused by flow rates, flow volumes, or pollutants. Non-structural methods of stormwater runoff control should be encouraged wherever possible. City stormwater management regulations shall include provisions to:*

a. *Preserve water quality, and protect or enhance the hydraulic and habitat functions of the natural drainage system;*

b. *Control peak runoff rate and quantity of discharges from new development to approximate predevelopment levels; and*

c. *Maintain stable stream channels and adequate low flows, and reduce future storm flows, erosion, and sedimentation. Stormwater runoff from development which is situated on or adjacent to steep hillsides or adjacent to ravines shall be routed so that it does not cause gully erosion, lead to mass wasting, or create erosion at the bottom of the slope.*

EVP 8.3 *Develop and adopt a Stormwater Management Plan that details specific strategies for managing stormwater throughout the City, particularly in those areas where the level of service requirements of the 1998 King County Surface Water Design Manual may not provide sufficient protection for public safety, the environment, or private property.*

7.5.9 Vegetation

EVG 9.0 Minimize the loss of vegetation as new development occurs. Continue to recognize the value of trees and other vegetation in increasing the livability of the City of Covington.

EVP 9.1 *Promote and support a systematic approach to enhancing the City through carefully-planned plantings and ongoing maintenance of street trees, public landscaping, and public greenbelts.*

EVP 9.2 *Require protection of valuable vegetation, when possible, during all phases of land-use development. In cases where development necessitates the removal of vegetation, require an appropriate amount of landscaping to replace trees, shrubs, and ground cover which were removed during development.*

EVP 9.3 *Establish protected and recorded greenbelts to preserve existing natural vegetation on steep hillsides, along stream banks and other habitat areas, and where visual buffers between uses or activities are desirable.*

EVP 9.4 *Utilize regulations, incentives and non-regulatory means to preserve, replace, or enhance native vegetation that contributes to the City's scenic beauty.*

EVP 9.5 *Encourage the incorporation of native plant communities into development proposals where possible.*

EVP 9.6 *Actively encourage the use of environmentally safe methods of vegetation control. Herbicide use shall be minimized.*

EVP 9.7 *Encourage the use of native plants in landscaping requirements and erosion control projects, and in the restoration of stream banks, lakes, shorelines, and wetlands.*

7.5.10 Fish and Wildlife Habitat

EVG 10.0 Adhere to the intent of the ESA Section 4(d) rules as they evolve in order to preserve and recover

"threatened" Chinook salmon, which are present in the Soos Creek Watershed. These conservation efforts may eventually be extended to protect coho salmon, which are "candidate species" for listing protection under the ESA. If coho are listed, conservation efforts would be extended to the Jenkins Creek Watershed as well.

EVP 10.1 Adopt a clearing and grading code to protect upland habitat as well as site designations and special restrictions relevant to Covington's construction standards and detention criteria.

EVP 10.2 Maintain habitats that support the greatest diversity of fish and wildlife species consistent with the City's land-use objectives. Fish and wildlife habitat shall be maintained through conservation and enhancement of terrestrial, air, and aquatic habitats, preferably in open spaces and sensitive areas.

EVP 10.3 Protect and preserve habitats for species which have been identified as endangered, threatened, or sensitive by the State or federal government. Where these habitats occur within a proposed development the proponent should be required to assess the impacts of the proposal on the habitat and provide measures necessary to minimize or avoid any adverse impacts on these areas. Stream and wetland buffer requirements may be widened to protect such habitats, as appropriate. Whenever possible, density transfers and/or buffer averaging shall be allowed.

EVP 10.4 Designate and protect the critical areas as mapped and adopted in the City's Comprehensive Plan, as well as coordinate with King County and adjacent cities for the long term preservation of surrounding natural areas. Public access to critical areas for scientific, educational, and recreational use is desirable provided the public access trails are carefully sited, sensitive habitats and species are protected, and hydrologic continuity is maintained.

EVP 10.5 Develop and follow a Shoreline Master Program to protect salmonid habitats. This plan will ensure that land-use and facility plans (transportation, water, sewer, electricity, gas) include, to the maximum extent practicable, riparian and stream habitat conservation measures developed by the City and/or service providers, the County, tribes, or state and federal agencies.

EVP 10.6 Coordinate with adjacent jurisdictions, the state and federal governments, and tribes to identify and protect habitat networks that cross jurisdictional lines.

EVP 10.7 Promote voluntary wildlife habitat enhancement projects by private individuals and businesses through educational and incentive programs.

7.5.11 Geologic Hazard Areas

EVG 11.0 Regulate development in environmentally critical areas such as steep slopes and landslide-prone areas to prevent harm, to protect public health and safety, and to preserve the remaining sensitive areas in the City.

EVP 11.1 Adopt zoning and building regulations to ensure that land uses on steep slopes are designed to prevent property damage and environmental degradation, and to enhance open space and wildlife habitat.

EVP 11.2 Decrease development intensity, site coverage, and vegetation removal as slope increases in order to minimize drainage problems, soil erosion, siltation, and landslides. Slopes of 40 percent or more should be retained in a natural state, free of structures and other land surface modifications.

EVP 11.3 Incorporate erosion control BMPs and other development controls as necessary to reduce sediment discharge from grading and construction activities to minimal levels. Development controls shall include seasonal restrictions on clearing and grading.

EVP 11.4 Minimize soil disturbance and maximize retention and replacement of native vegetative cover for any land uses permitted in Erosion and Landslide Hazard Areas.

EVP 11.5 Restrict development on Landslide Hazard Areas and areas with slopes of 40 percent or greater unless the risks and adverse impacts associated with such development can be reduced to a negligible level.

EVP 11.6 Encourage special building design and construction measures in areas with severe seismic hazards to minimize the risk of structural damage, fire, and injury to occupants during a seismic event and to prevent post-seismic collapse.

7.5.12 Air Quality

EVG 12.0 Insure that the City's land-use development policies protect the City's air quality.

EVP 12.1 Support regional efforts to improve outdoor and indoor air quality.

EVP 12.2 Reduce air pollution associated with land uses by:

a. Requiring measures to minimize particulate emissions associated with land clearing and construction activities;

b. Limiting the amount of aerial spraying;

c. Promoting the use of clean-burning fuels;

d. Encouraging the proper use of wood stoves and fireplaces; and

e. Promoting land-use patterns and public facility sitings that reduce the quantity and length of single-occupancy vehicle trips.