Environment & Conservation

Background and Context

Anacortes' natural beauty and setting in nature, including Puget Sound vistas, mature trees, vegetation, streams, wetlands, lakes and shorelines are just some aspects of the natural environment that Anacortes citizens value. The relationships between these features, development, natural processes, and the condition of the resulting environment have profound impacts on the quality of life in Anacortes. Preserving the quality of the environment depends on government, business, and individual decisions and coordinated actions to minimize the adverse environmental impacts that can occur during development/redevelopment, or as a result of previous practices.

Environmental Setting

Anacortes has developed primarily as a residential area with an associated mix of commercial and industrial areas, parks, schools, and natural areas, including over 4.3 square miles of designated forestlands (Anacortes Community Forestlands or ACFL). Natural areas are comprised of the Puget Sound shoreline, bluffs, steep slopes, wetlands, streams, lakes, and forested areas.

Many decades before the Growth Management Act was even conceived, citizens of Anacortes recognized the need for and advantages of preserving parts of their surroundings in a wild and natural state. The first half of the 20th century, especially the period before 1930, was a time of growing civic awareness of the scenic resources of this area. As a result, numerous individuals deeded land to the City for "public park purposes", which was the beginning of the ACFL. Logging of other city-owned land was used as a source of revenue to manage ACFL for about 40-50 years. Based on public input, in 1989, the Forest Advisory Board stopped all logging activities and began pursuing other methods of funding the ACFL management program. In 1991, City Council voted to remove all references to logging from the Forest Plan and City Comprehensive Plan. In 1998 the Conservation Easement Program was initiated to protect the community forest lands from logging, mining and development while raising money to pay for management and stewardship of the ACFL.

Today, the City of Anacortes owns more than 2,800 acres (4.3 square miles) of designated forest lands within City Limits; this amounts to over fifty percent of the city's total land area, and includes Mt. Erie, Whistle Lake, Little Cranberry Lake, and 80 acres north of Heart Lake and the former State Park lands. This is in addition to the several hundred acres of parkland, including Washington Park which is approximately ninety percent natural forest, and the Cap Sante area which is again primarily natural forest.

The community forest lands contain some of the most unique and complex living environments in the Puget Sound. Few cities are so fortunate to have such a resource, coupled with the broad-based desire of its citizens to conserve and responsibly use these resources. To date, over ____ acres of the ACFL have been placed under conservation easement, which are held and administered by the Skagit Land Trust. While the public is permitted to venture into the ACFL on a managed network of trails, few other activities are allowed. In effect, the ACFL is ninety-nine percent a natural habitat with a wide variety of plant and animal life, lakes, ponds, wetlands, and small streams, old growth timber, and geologic features.

(MAP TO BE PROVIDED)

The Community Forestlands are designated as Fish and Wildlife Conservation Areas in the Critical Areas Regulations, and provide significant habitat for both imperilded and commonplace species. While there are still a few small remiaining

habitat areas present in the developed areas of Anacortes, the City's primary emphasis is on protecting the large ACFL forestland and park tracts, as they represent the best, largest, and most valuable habitat in the City.

With its location on Fidalgo Island, Anacortes is surrounded by waterbodies on three sides, including Burrows Bay to the west, Guemes Channel to the north and Fidalgo Bay to the east, including over 27 miles of shoreline. Development of the City's shorelines (areas within "shoreline jurisdiction" or within 200' of the Ordinary High Water Mark) is regulated by the Shoreline Master Program, which implements the Shoreline Management Act of 1971. Within the Anacortes shoreline jurisdiction, the waters of Puget Sound and Strait of Juan de Fuca lying seaward from the line of extreme low tide are designated as Shorelines of Statewide Significance. Padilla Bay, from March Point to William Point, is identified as a specific estuarine areas and is considersed a Shoreline of Statewide Significance waterward from OHWM and all associated shorelands.

Elements of the Environment

Vegetation Protection

Forested open space, wetlands, and native vegetation found on steep slopes and near shorelines are important resources that should be preserved. Trees help stabilize soils on steep slopes, and act as barriers to wind and sound. Plants replenish the soil with nutrients, generate oxygen, and clean pollutants from the air. Native vegetation provides habitat for wildlife. Wetlands and riparian vegetation provide surface water storage to help clean surface water of pollutants and sediment.

The preservation of vegetation, especially significant trees, has been a priority for the city for some time, as evidenced by the City's tree preservation ordinance and vegetation preservation standards for shoreline areas as outlined in the Shoreline Master Program. The city has been recognized as a Tree City USA annually since 2001. The largest, most contiguous areas of native vegetation are primarily found in the Anacortes Community Forest Lands and Parks, for which the City has also developed forest and fauna management plans. These areas contain the highest quality of wildlife habitat found in the city. However, areas of less intensive residential development also contain mature trees and other native vegetation, which provide secondary wildlife habitat and substantially contribute to the quality of life in Anacortes. Native vegetation in residential areas that may be subdivided or otherwise more intensely developed is at the greatest risk of being lost.

Regulations governing vegetation preservation and enhancement are found in the tree preservation, landscaping, land clearing, and critical areas provisions of the Anacortes Municipal Code (AMC 16.50, 17.41, 17.54 and 17.70), as well as the Shoreline Master Program.

Fish & Wildlife Habitat Protection

The process of urbanization can result in the conversion of wildlife habitat to other uses. The loss of certain types of habitat can have significant, adverse effects on the health of certain species. Fish and wildlife habitat conservation is the management of land for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created. Designated habitats are those areas with which federal or state-designated endangered, threatened, and sensitive species have a primary association, state priority habitats and areas associated with state priority species; habitats and species of local importance; commercial and recreations shellfish areas; kelp and eelgrass beds; mudflats and marshes; herring, surf smelt and sand lance spawning areas; naturally occurring ponds under twenty acres but larger than 2,500 square feet; streams and buffers; waters of the state; lakes, ponds, streams and rivers planted with game fish by a governmental or tribal entity; State Natural Area Preserves and Natural Resource Conservation Areas; Areas of Rare Plant Species and High Quality Ecosystems; and land useful or essential for preserving connections between habitat blocks and open spaces.

The City of Anacortes contains many of these areas. Multiple streams pass through the City, discharging into Puget Sound; several of these streams are known to support fish use. Some of the larger Puget Sound tributaries include Clyde Creek, Cranberry Creek, Beaver Creek, Ace of Hearts Creek, Happy Valley Stream, and Whistle Creek. WDFW mapping of Priority Habitat and Species indicates presence of many fish, shell fish and bird and mammal species within the city, especially along the shorelines and within Anacortes Community Forest Lands.

WDFW provides management recommendations for priority species and habitats that are intended to assist landowners, users, and managers in conducting land use activities in a manner that incorporates the needs of fish and wildlife. The City has reviewed PHS management recommendations developed by WDFW for species identified in Anacortes, and used them to guide the development of critical areas regulations that fit the existing conditions and limitation of Anacortes' unique environment.

Regulations governing fish and wildlife habitat conservation can be found in the critical areas provisions of the Anacortes Municipal Code (AMC 17.70), as well as the Shoreline Master Program.

Wetlands

Wetlands are fragile ecosystems that serve a number of important beneficial functions, including providing habitat areas for fish, wildlife, and vegetation; water quality maintenance and pollution control; flood control; shoreline erosion control; natural resource education; scientific study; open space; and recreation opportunities. A number of these important natural resources have been lost or impaired by draining, dredging, filling, excavating, building, pollution and other acts.

The City has mapped potential wetlands based on a field reconnaissance and aerial photo interpretation conducted in 2005. Shoreline associated wetlands exist along the Guemes Channel near the Washington State Ferry Terminal, along the west and south boundaries of Fidalgo Bay, and near the eastern City limits at the south end of Padilla Bay. Other wetlands are palustrine systems (freshwater). The largest palustrine system is south of Cranberry Lake, other large wetlands include _____, as well as numerous smaller undocumented wetlands. Most wetlands in the City are relatively isolated systems and surrounded by development.

Under the Anacortes Municipal Code, wetlands are designated using a tiered classification system based on the Washington State Wetland Rating System for Western Washington, as revised by the Department of Ecology. All wetlands, regardless of size, are regulated under the Anacortes Municipal Code. When development is proposed on a site with known or suspected wetlands, a wetland evaluations are required to verify and classify wetlands and delineate boundaries and buffer areas. Ecology mandates minimum wetland buffer areas based on typology and other factors.

Regulations governing wetlands can be found in the critical areas provisions of the Anacortes Municipal Code (AMC 17.70), as well as the Shoreline Master Program.

Lakes

There are three freshwater lakes within the City limits, including Whistle, Heart and Cranberry Lake, as well as a portion of the northeast shoreline of Lake Erie. All of the lakes are within the City's Community Forest Lands and within shoreline jurisdiction. Public access to the lakes is mostly passive recreation trails, with one public parking area along Heart Lake, was well as a small boat ramp for boats with non-combustion engines. The forested shoreline environment of the lakes and removed proximity from development helps to maintain very good water quality and habitat.

In addition to critical areas regulations and Shoreline Master Program regulations, the City protects water quality and quantity through the drainage requirements and regulations outlined in AMC Ch. 13.36. The City's adopted Stormwater Management Plan also identifies local stormwater quantity and quality problems and methods to address identified issues.

Streams and Creeks

Numerous small streams and creeks are found within and adjacent to the City. The following streams have been designated as Fish and Wildlife Habitat Conservation Areas and are subject to 50' buffers in most cases: Whistle Creek, Happy Valley Stream, Ace of Hearts Creek, Beaver Brook, Cranberry Creek, Clyde Creek, Anaco Bourn, Morrison Run, Cedar Springs, Weaverling Rill, Miller Creek, Aqua Creek, Howard Creek, Summit Creek, and March's Run. Many of the streams have been placed in culverts, channels, or otherwise altered and degraded.

Provisions regulating streams are found in the critical areas regulations (AMC 17.70) and Shoreline Master Program. The regulations contain provisions to encourage daylighting of streams, where appropriate.

Groundwater

Groundwater is rainwater that has filtered into the ground and stays below the surface in zones called aquifers. The amount of groundwater available and the amount of water available to recharge groundwater is affected by precipitation, land use, population growth and water reuse. Groundwater aquifers supply water to lakes, wetlands, and streams during the dry season, and a approximately 37 private wells that provide drinking water to residences in the city. Wetlands and lakes are thought to be the main groundwater recharge areas in the City.

Provisions regulating aquifer recharge areas are located in the critical areas regulations (AMC Ch. 17.70).

Shorelines

The City of Anacortes Shoreline Master Program, adopted in 2010, regulates development of activities along Anacortes shorelines in compliance with the Shoreline Management Act of 1971. Development activities proposed within the shoreline jurisdiction must comply with the policies and development regulations established in the SMP. Goals and Policies of the SMP are considered a part of this Comprehensive Plan (RCW 36.70A.480).

Surface water, aquatic resources and habitat

Drainage in the city consists of five separate major drainage basins which flow to five major water bodies: Guemes Channel, Burrows Bay, Fidalgo Bay, Padilla Bay, and Similk Bay.

Development in the Fidalgo Bay drainage basin is mainly in the northern section of the basin, where part of the Downtown commercial area lies. There are 31 storm drainage outfalls to Fidalgo Bay. Shorelines have been altered by dredging, filling and over-water construction. Habitat ranges from deep-water habitat to near-shore subtidal habitat, such as mud bottoms, gravel or cobble substrates and hard bottom areas. Eelgrass forms nearly continuous meadows over the broad flats of the central and inner bay. Species within the bay include surf smelt, herring, sand lance, Chinook salmon, bald eagle, peregrine falcon, and blue heron.

Development in the Guemes Channel drainage basin consists of the remainder of the downtown area with high density residential nearby. The areas along the Channel are developed as medium density residential. There are 19 storm drainage outfalls to Guemes Channel. Guemes channel has been altered by dredging and filling activities and has both deep and shallow water habitat. Habitat along the channel, particularly near the Port of Anacortes has been modified by riprap and placement of piling for pier and moorage structures. Guemes Channel is a migratory pathway for salmon, perhaps for herring and other forage fish, and Dungeness crab.

Development in the Burrows Bay drainage basin is primarily medium density residential. There are 13 storm drainage outfalls to Burrows Bay. Much of the Burrows Bay shoreline is modified with armoring and contains intertidal, estuarine and subtidal habitats including documented sand lance and surf smelt spawning habitat and forage fish spawning habitat and juvenile salmon habitat.

The Padilla Bay drainage basin development is mainly in the northern section of the basin. Padilla bay is considered a National Estuarine Research Reserve and provides 11,000 acres of protected estuarine habitats. It contains both subtidal and intertidal habitats and extensive eelgrass beds, supporting migrating juvenile Chinook and Chum salmon.

The Similk Bay drainage basin is approximately 120 acres, with only a small portion within the City. The bay is a commercial shellfish growing area.

The Shoreline Master Program regulates development within shoreline jurisdiction. The City's adopted Stormwater Management Plan also identifies local stormwater quantity and quality problems and methods to address identified issues.

Air Quality

A basic characteristic of a livable city is clean air. Numerous federal, state, regional and local agencies enact and enforce legislation to protect air quality. Good air quality in Anacortes, and in the region, requires controlling emissions from all sources, including: internal combustion engines, industrial operations, indoor and outdoor burning, and wind-borne particles from land clearing and development. Local and regional components must be integrated in a comprehensive strategy designed to improve air quality through transportation system improvements, vehicle emissions reductions, and demand management strategies.

Air quality is measured by the concentration of chemical compounds and particulate matter in the air outside of buildings. Air that contains carbon monoxide, ozone, and particulate matter can degrade the health of humans, animals, and plants. Human health risks from poor air quality range in severity from headaches and dizziness to cancer, respiratory disease, other serious illness, and even premature death. Potential ecological impacts include damage to trees and other types of vegetation. Quality of life concerns include degradation of visibility, and deposition of soot and other particulate matter on homes and property.

The City seeks long-term strategies to address air quality problems, not only on the local level, but in the context of the entire Puget Sound Basin, with coordination and major direction from the Northwest Clean Air Agency. Ch. 17.54.020 regulates air pollutants by referencing applicable Northwest [Air Pollution Authority] Clean Air Agency regulations.

Flood Hazard Areas

The boundaries of the 100-year flood plain essentially encompass the Anacortes shoreline. The Federal Emergency Management Agency (FEMA) highly recommends against the placement of any structure in the 100-year floodplain. Any structure built within the floodplain's boundaries must provide for adequate protection against the 100-year flood (i.e. structures within the floodplain are constructed at a minimum of one foot above the floodplain elevation). The 100-year floodplain does not cover all areas subject to localized flooding. Conveyance and detention facilities may be undersized or not maintained leading to flooding problems in areas other than the designated floodplain.

Regulations for flood hazard protection are found in AMC 17.70 and the Shoreline Master Program.

Geologic Hazard Areas

Geologically hazardous areas are areas that because of their susceptibility to erosion, sliding, earthquakes, or other geological events are not suited to siting commercial, residential or industrial development consistent with public health or safety concerns. Steep bluffs, identified "unstable" areas by the Coastal Zone Atlas, line the north Anacortes shoreline along Guemes Channel for about two miles. Unstable slopes are considered unstable because of geology, groundwater, slope and/or erosional factors.

Areas classified as "Modified" include much of Skyline, the Washington State Ferry Terminal, the northeast Guemes Channel Shoreline, and the west shoreline of Fidalgo Bay. Modified slopes are highly modified by human activity and

include areas of significant excavation or filling. Slope response to a combination of natural processes and human activities may be unpredictable.

Most of the shoreline surrounding March Point is considered “stable”, with pockets of “modified” areas.

The Anacortes Municipal Code (Ch. 17.70) and Shoreline Master Program regulate and categorize geologic hazard areas as Erosion Hazard Areas, Landslide Hazard Areas, Seismic Hazard Areas, Mine Hazard Areas, Volcanic Hazard Areas, Tsunami Hazard Areas and Other Hazard Areas. For new development, a qualified professional is required to submit a report categorizing the hazard area type and evaluating the proposed development for consistency with the city’s regulations.

Wildland Fire

Wildland fires can be caused by lightning strike or human error, and spread to homes and businesses, block roads, and create significant economic and environmental damage if fuel loads and vegetation are not properly maintained. Anacortes has large expanses of community forestlands which are highly vegetated and have limited ingress and egress for emergency vehicles, with residential housing in very close proximity, which may be of concern.

Hazardous Material

Several major rights-of-way traverse Anacortes and are used to transport hazardous material. These are the BNSF railroad, which is located in the eastern portion of the City; SR20 spur, which provides access to the Washington State Ferry terminal at Ship Harbor; and R Avenue, which provides access to the Port of Anacortes Pier 1 marine terminal facility.

Tsunami

Tsunamis affecting Washington State may be induced by an earthquake of local origin, or they may be caused by earthquakes at a considerable distance, such as Alaska or Japan. The City has developed an action plan that identifies tsunami inundation zones using a computer prediction model. Predicted areas of inundation include properties located in Skyline Marina, Ship Harbor, Eastern Guemes Channel, Cap Sante Marina and Fidalgo Bay and March’s Point. In the case of a tsunami, the City will, if deemed appropriate, utilize the Community Alert Network system to notify affected residents to seek higher ground.

Climate Change

In November, 2006 a Greenhouse Gas Inventory and Proposed Climate Action Plan was prepared for the City of Anacortes by ICLEI – Local Governments for Sustainability. The Plan identifies several potential local climate change impacts:

- Sea level rise is likely to occur faster than global averages and earlier snowmelt may cause changes in river and stream flows. Sea level rise and increased seasonal flooding could incur considerable costs as these phenomena pose risks to property, infrastructure and human life.
- Water quality and quantity may be at risk as a result of changing temperatures, with more winter participation in the form of rain instead of snow, shortening the snowfall season and accelerating the rate at which the snow pack melts in spring. This may increase spring flooding and decrease the storage of the natural water tower in the Cascades, meaning less water will be available for agricultural irrigation, hydro-electric generation and general needs of a growth population.
- Local native plants and animals may be at risk as temperatures rise, with increased temperatures providing a foothold for invasive species of weeks, insects and other non-native threats.

- Coastal wetlands and salt marshes are at risk of being inundated by rising sea levels. Increased flow and salinity of water resources would affect food web and mating conditions for fish populations.
- The natural cycle of flowering and pollination, and temperature conditions necessary for a thriving locally adapted agriculture would be altered, challenging perennial crops.
- Increased temperatures and precipitation can have public health impacts, including encouraging mosquito-breeding, thus engendering vector-borne diseases, and increasing heat-stroke risks for various populations. Increased temperatures also increases ozone levels and air pollution toxicity, which are tied to increased rates of asthma and other pulmonary diseases.

The Report found that the major stationary source of emissions in Anacortes are residential, commercial, and industrial sectors' use of electricity. Natural gas usage is the second largest. Transportation emissions is responsible for the greatest proportion of emissions by one sector, although as a percentage of total emissions, transportation emissions have dropped in percentage, while the number of vehicle miles traveled continues to increase.

The City has undertaken, and has plans to continue to implement, many projects recommended in the Plan that achieve greenhouse gas emission reductions. These include, but are not limited to, creating a Resource Manager position to implement energy efficiency measures in government facilities and operations as well as encourage public participation in energy-reducing activities; replaced citywide CRT computer monitors with energy efficient LCD and LED monitors; purchase of hybrid fleet vehicles; replaced citywide streetlights with LED bulbs; and expansion of the municipal recycling program.

Energy Consumption Reduction

The City of Anacortes Community Energy Plan was completed in November, 2014. The Plan was developed as part of the City's participation in the Georgetown University Energy Price (GUEP), a competition to reduce the nation's energy consumption. The plan outlines methods to achieve the City's overarching goal to become a leader in innovative energy efficiency and reduction strategies.