






APPENDIX A









Environment Designation Maps

City of Arlington
Shoreline Master Plan
**Environment
Designations**

Legend

Environment Designations

-  Natural
-  Historic Shoreline Business District
-  Urban Conservancy - Low Intensity
-  Urban Conservancy - Open Space
-  Ordinary High Water Mark (OHWM)
All areas waterward of the ordinary high water mark have an Aquatic Designation.

-  City Limits
-  City UGA
-  Local roads
-  Airport
-  Rail line
-  Streams
-  Rivers
-  Ponds

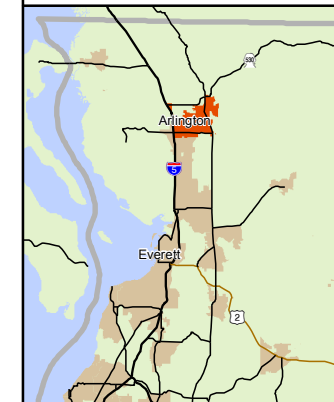
Streams and waterbodies courtesy of Snohomish County Dept of Information Systems, June 2009.

Topography provided by Puget Sound LiDAR Consortium, downloaded summer 2009.

Date: 12/08/2011

File: EnvironDesign_11x17_10.mxd

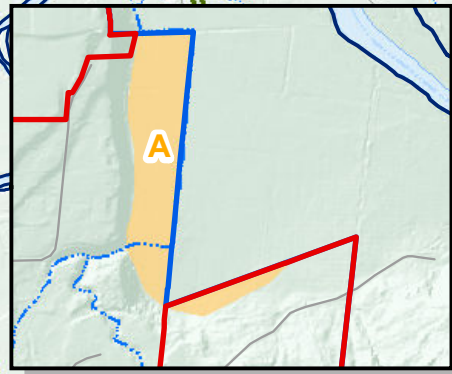
Cartographer: kdk/th



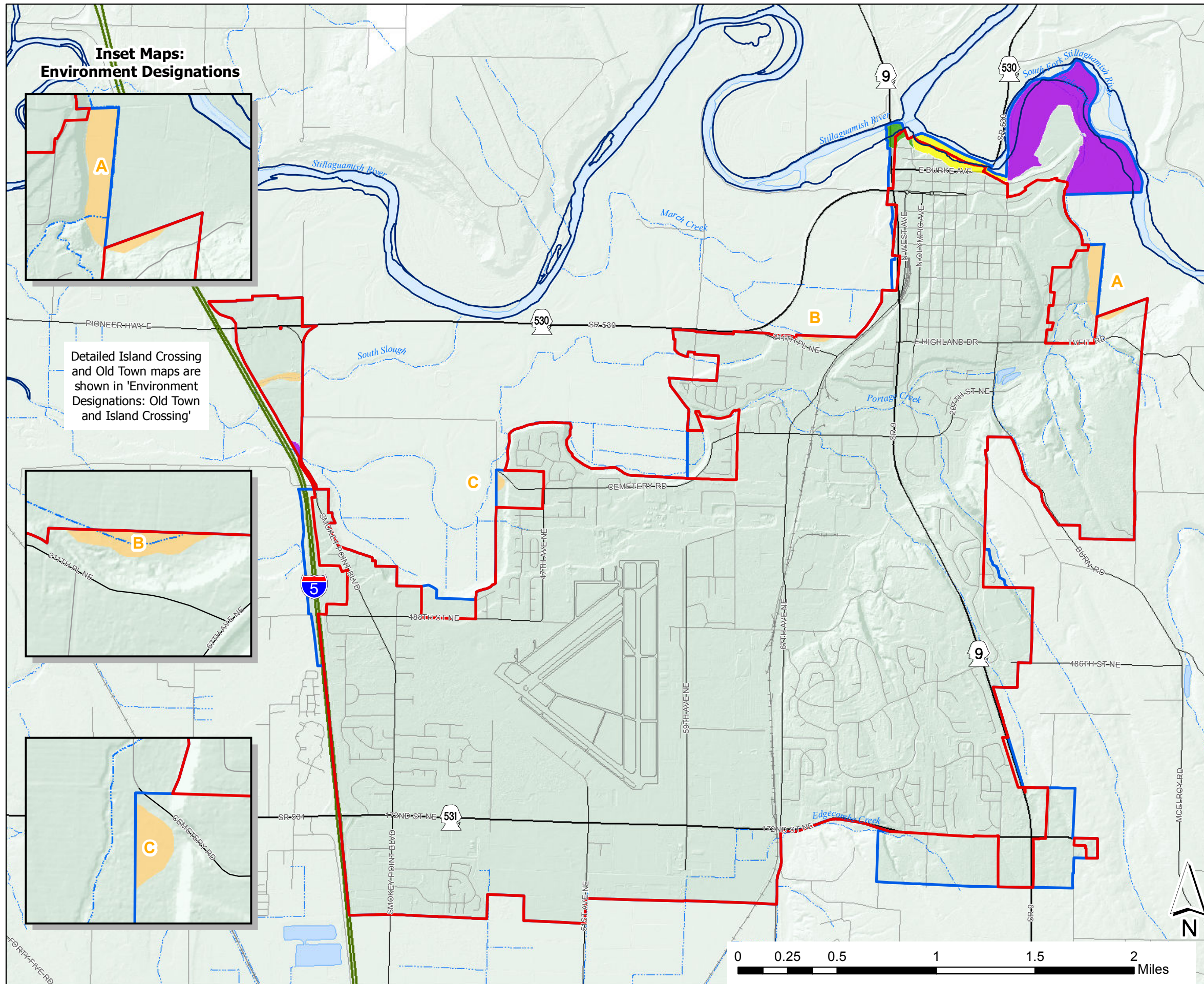
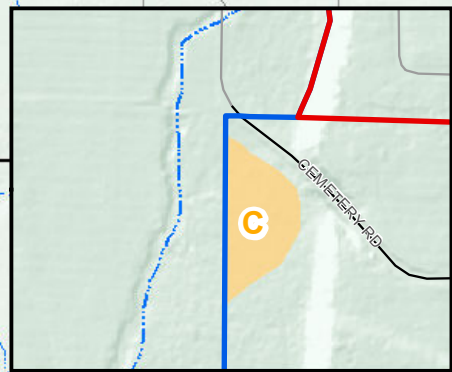
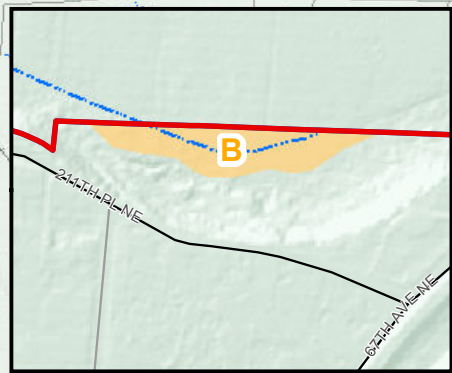
Maps and GIS data are distributed "AS-IS" without warranties of any kind, either express or implied, including but not limited to warranties of suitability for a particular purpose or use. Map data are compiled from a variety of sources which may contain errors and users who rely upon the information do so at their own risk. Users agree to indemnify, defend, and hold harmless the City of Arlington for any and all liability of any nature arising out of or resulting from the lack of accuracy or correctness of the data, or the use of the data presented in the maps.



**Inset Maps:
Environment Designations**



Detailed Island Crossing and Old Town maps are shown in 'Environment Designations: Old Town and Island Crossing'














*City of Arlington
Shoreline Master Plan*

**Environment Designations:
Old Town and Island Crossing**

Legend

Environment Designations

-  Natural
-  Historic Shoreline Business District
-  Urban Conservancy - Low Intensity
-  Urban Conservancy - Open Space
-  Ordinary High Water Mark (OHWM)
All areas waterward of the ordinary high water mark have an Aquatic Designation.

-  City Limits
-  City UGA
-  Local roads
-  Streams
-  Rivers
-  Ponds

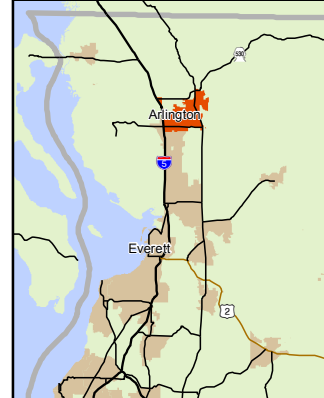
Streams and waterbodies courtesy of Snohomish County
Dept of Information Systems, June 2009.

Aerials taken in June 2009.

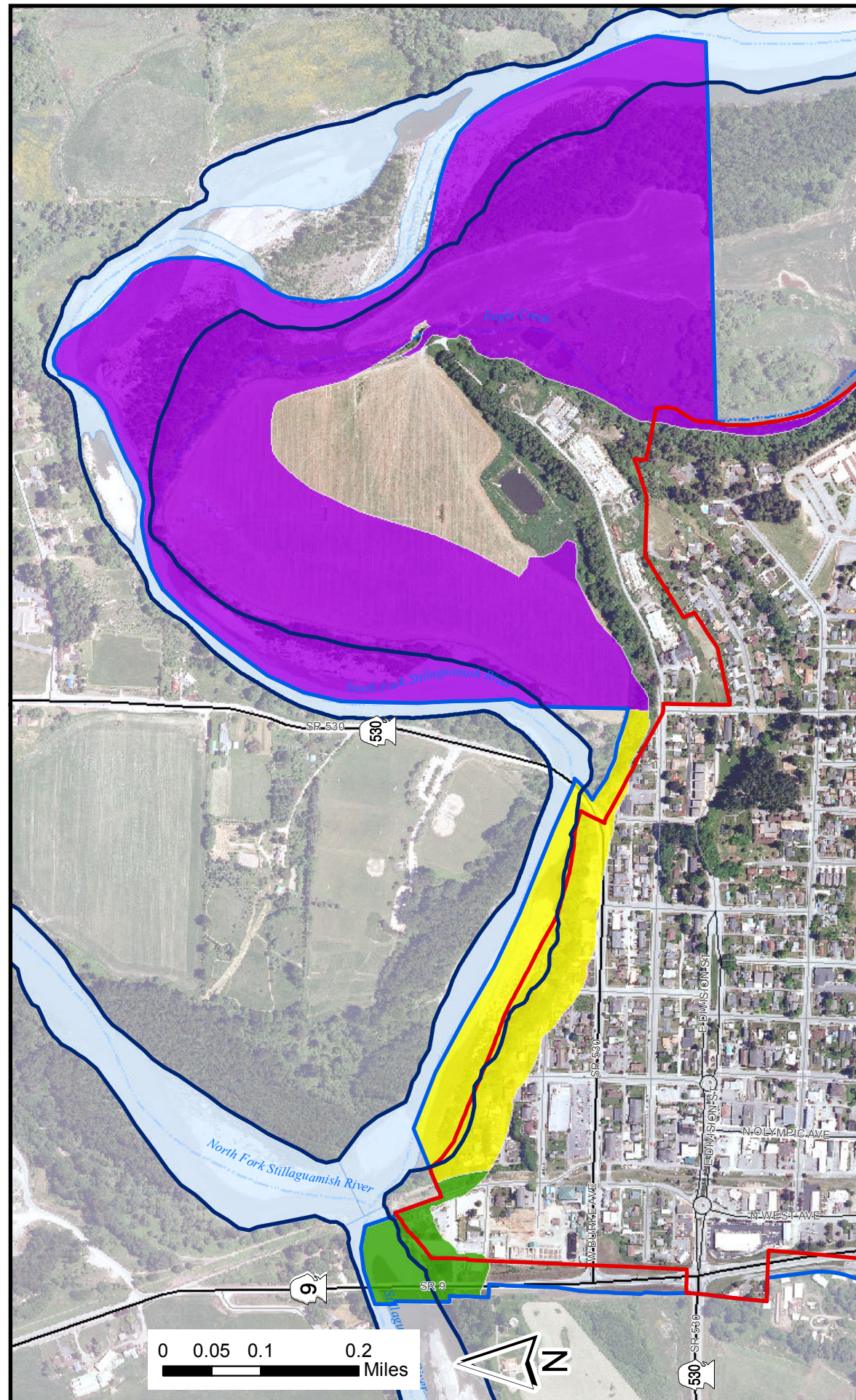
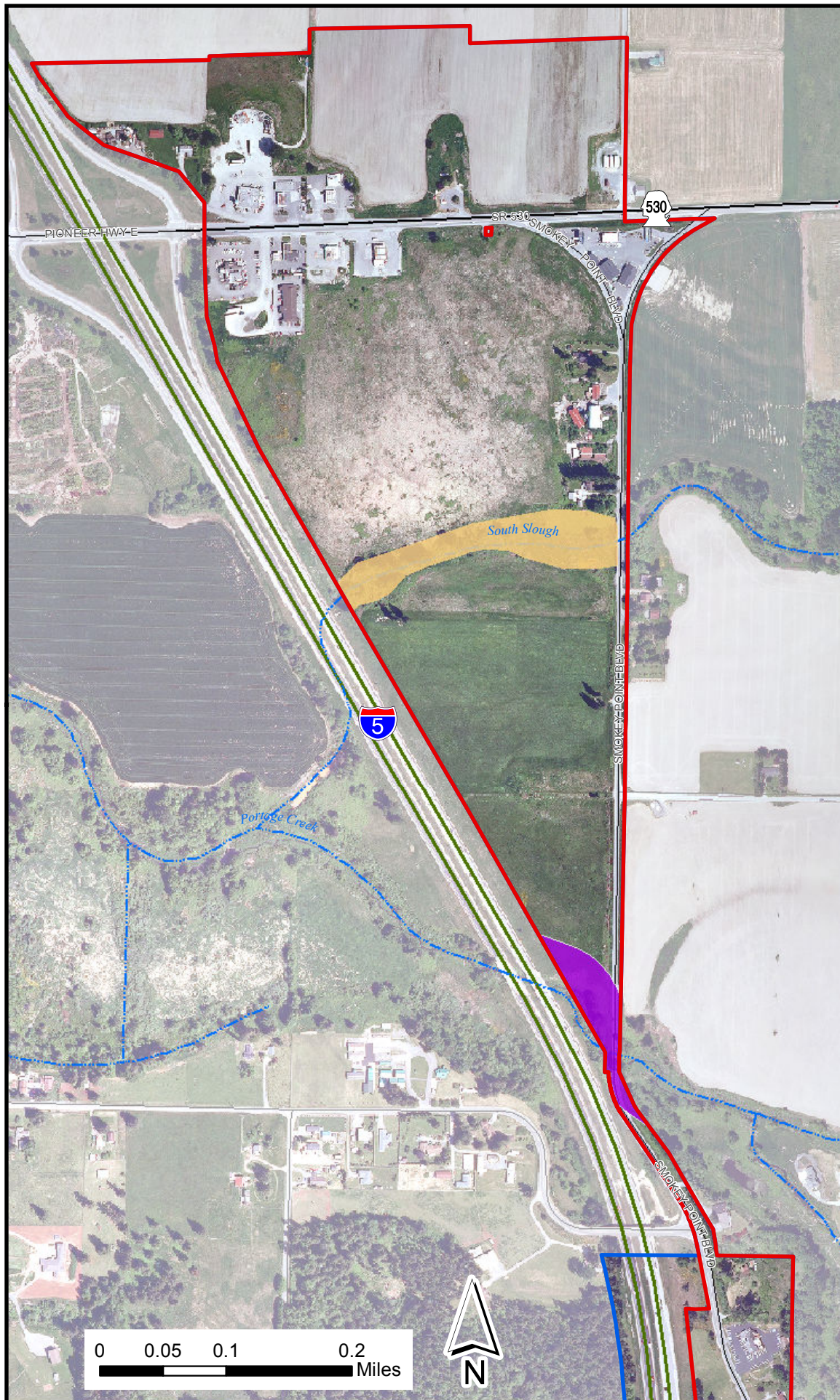
Date: 12/08/2011

File: EnvironDesignOTIC_11x17_10.mxd

Cartographer: kdk/th



Maps and GIS data are distributed "AS-IS" without warranties of any kind, either express or implied, including but not limited to warranties of suitability for a particular purpose or use. Map data are compiled from a variety of sources which may contain errors and users who rely upon the information do so at their own risk. Users agree to indemnify, defend, and hold harmless the City of Arlington for any and all liability of any nature arising out of or resulting from the lack of accuracy or correctness of the data, or the use of the data presented in the maps.



APPENDIX B

Shoreline Environmentally Critical Areas

ORDINANCE NO. 2011-029

AN ORDINANCE OF THE CITY OF ARLINGTON, WASHINGTON, ADDING A NEW CHAPTER 20.93 OF THE ARLINGTON MUNICIPAL CODE RELATING TO ENVIRONMENTALLY CRITICAL AREAS, AND REPEALING CHAPTER 20.92

WHEREAS, the City of Arlington has the authority to regulate land uses within the City; and

WHEREAS, the City of Arlington has adopted a Shoreline Master Plan; and

WHEREAS, the city wishes to amend provisions of the land use code relating to shoreline management and critical areas; and

WHEREAS, environmental review has been completed as required by SEPA and consistent with the requirements of the State Growth Management Act;

WHEREAS, the City Planning Commission considered these amendments at their October 4, 2011 public hearing and the City Council considered the same, along with the Planning Commission recommendations, at a public hearing conducted on November 7, 2011 and determined approving the amendments was in the best interest of the City and its citizens;

NOW, THEREFORE, the City Council of the City of Arlington do hereby ordain as follows:

Section 1. A new Chapter 20.93 of the Arlington Municipal Code is hereby adopted to read as follows:

CHAPTER 20.93 ENVIRONMENTALLY CRITICAL AREAS

Sections:

Part I. Purpose and Intent

20.93.010 Purpose and Intent.

Part II. Definitions

20.93.100 Definitions.

Part III. General Provisions

20.93.200 Applicability.

20.93.210 Regulated Activities.

20.93.220 Allowed Activities.

20.93.230 Compliance.

20.93.240 Classification as an Environmentally Critical Area.

20.93.250 Procedures.

20.93.260 Submittal Requirements.

20.93.270 Site/Resource Specific Reports.

- 20.93.280 Maps and Inventory.
- 20.93.290 Dedication of Environmentally Critical Area Easements.
- 20.93.300 Dedication of Land and/or Easements in Lieu of Required Parks or Open Space.
- 20.93.310 Increased Buffer Widths
- 20.93.320 Buffer Width Averaging.
- 20.93.330 Buffers to be Retained in Natural Condition
- 20.93.340 Building Setbacks from Buffers
- 20.93.350 Special Conditions for Possible Reductions in Buffer Width
- 20.93.370 Non-Conforming Activities.
- 20.93.380 Assessment Relief.
- 20.93.390 Mitigation Plan Requirements.

Part IV. Fish and Wildlife Conservation Areas

- 20.93.400 Classification.
- 20.93.410 Determination of Boundary.
- 20.93.420 Species/Habitats of Local Importance.
- 20.93.430 Allowed Activities.
- 20.93.440 Requirements.
- 20.93.450 Mitigation.

Part V. Frequently Flooded Areas

- 20.93.500 Classification.
- 20.93.510 Determination of Boundary.
- 20.93.520 Allowed Activities.
- 20.93.530 Requirements.
- 20.93.540 Mitigation.

Part VI. Geologically Hazardous Areas

- 20.93.600 Classification.
- 20.93.610 Determination of Boundary.
- 20.93.620 Allowed Activities.
- 20.93.630 Requirements.
- 20.93.640 Mitigation.

Part VII. Streams, Creeks, Rivers, Lakes and Other Surface Water

- 20.93.700 Classification.
- 20.93.710 Determination of Boundary.
- 20.93.720 Allowed Activities.
- 20.93.730 Requirements.
- 20.93.740 Mitigation.

Part VIII. Wetlands

- 20.93.800 Classification.
- 20.93.810 Determination of Boundary.
- 20.93.820 Allowed Activities.
- 20.93.830 Requirements.
- 20.93.840 Mitigation.

Part IX. Aquifer Recharge Areas

- 20.93.900 Purpose and Objectives.
- 20.93.910 Applicability.
- 20.93.920 Information Required Upon Application.

- 20.93.930 Hydrogeologic Site Evaluations.
- 20.93.940 Best Management Practices (BMP) Plans.
- 20.93.950 Mitigation Plans
- 20.93.960 Imposition of Conditions on Projects

Part X. Adoption of Plans

- 20.93.970 Shoreline Master Plan and Maps Adopted

Part I. Purpose and Intent

- 20.93.010 Purpose and Intent.

This Chapter establishes regulations for the protection of environmentally critical areas (ECAs) within the City’s shoreline jurisdiction, including critical areas, natural resource lands, and protective buffers. While it is intended that this Chapter fulfill the mandates of the Washington State Shoreline Management Act, that is not its sole purpose: Its primary purpose is to fulfill the legislative intent of the City of Arlington, which is to protect the public health, safety, and welfare of the citizens of Arlington by providing for the long-term preservation of natural systems and their functions. This is to be accomplished by establishing prohibitions, mitigation requirements, and minimum standards for the use and development of properties that contain or adjoin environmentally critical areas. Additionally, this Chapter is intended to:

(a) If at all possible, avoid impacts to environmentally critical areas. If this is not practicable, then:

1. Minimize or limit the degree or magnitude of actions and their implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts.
2. Mitigate any impacts by repairing, rehabilitating, or restoring the affected environment.
3. Reduce or eliminate any impacts over time by preservation and maintenance operations during the life of the action.
4. Compensate for unavoidable impacts by replacing, enhancing or providing substitute resources or environments through monitoring of specific and cumulative impacts.

(b) Protect the public from personal injury, loss of life, or property damage due to flooding, erosion, landslides, seismic events, or soil subsidence. (c) Protect against publicly financed expenditures due to the misuse of environmentally critical areas that cause:

1. Unnecessary maintenance and replacement of public facilities;
2. Publicly funded mitigation of avoidable impacts;
3. Cost for public emergency rescue and relief operations where the causes are avoidable;
4. Degradation of the natural environment.

(d) Protect aquatic resources.

(e) Protect unique, fragile, and valuable elements of the environment, including wildlife and its habitat.

(f) Alert appraisers, assessors, owners, potential buyers, or lessees to the development limitations of environmentally critical areas;

(g) Provide City officials with sufficient information to adequately protect environmentally critical areas when approving, conditioning, or denying applications for public or private development proposals.

(h) Give guidance to the development of Comprehensive Plan policies in regard to the natural systems and environment of the Arlington Watershed(s);

(i) Provide property owners and developers with succinct information regarding the City's requirements for property development, thus rationalizing and accelerating the development permit application process.

Part II. Definitions

20.93.100 Definitions.

For the purposes of this Chapter, the following definitions shall apply:

Alteration(s). A change or rearrangement of the structural parts of existing facilities or an enlargement by extending the side or increasing the height or depth or the moving from one location to another.

AMC. The Arlington Municipal Code.

Applicant. A person who applies for any permit or approval to do anything governed by this code and who is either the owner of the subject property, the authorized agent of the owner, or the City.

Classes. Taxonomic classification system of the United States Fish and Wildlife Service (Cowardin, et al 1978).

Commercial. Activity with goods, merchandise, or services for sale or rent.

Compensation. In-kind replacement of damaged wetlands with substitute wetlands whose characteristics closely approximate those destroyed or degraded by a regulated activity. It does not mean replacement —in-category. When compensatory measures are appropriate pursuant to the mitigation priority sequence above, preferential consideration shall be given to measures that replace the impacted functions directly and in the immediate vicinity of the impact. However, alternative compensatory mitigation within the watershed sub-basin that addresses limiting factors or identified critical needs for shoreline resource conservation based on watershed or comprehensive resource management plans applicable to the area of impact may be authorized. If there are no previously identified mitigation opportunities in the impacted sub-basin identified in local watershed or comprehensive plans the applicant will use a watershed approach in selecting mitigation sites utilizing *Selecting Wetland Mitigation Sites Using a Watershed Approach (Western Washington)* (Publication #09-06-32)

Critical Areas. Fish and wildlife habitat conservation areas, Streams, Wetlands, areas with a critical recharging effect on aquifers used for potable water, fish and wildlife habitat conservation areas, frequently flooded areas; and geologically hazardous areas.

Dedication. Deliberate appropriation of land by an owner for public use or purpose, reserving no other rights than those that are compatible with the full exercise and enjoyment of the public use or purpose to which the property has been devoted.

Degraded Wetland. A wetland in which the vegetation, soils, and/or hydrology have been adversely altered, resulting in lost or reduced functions and values.

Developable Area. Land outside of critical areas and environmentally critical area setbacks and buffers.

Development Permit. Any permit or approval under this code or the AMC that must be issued before initiating a use or development activity.

Ditch. A long narrow excavation dug in the earth for drainage with its top width less than 10 feet at design flow and that does not meet the definition of a stream. A ditch may be regulated if it conveys stream flow.

Easement. Land which has specific air, surface or subsurface rights conveyed for us by an entity other than the owner of the subject property or to benefit some property other than the subject property.

Edge. The boundary of a wetland as delineated based on the criteria contained in this Chapter.

Emergent Wetland. A wetland with at least thirty percent of its surface covered by erect, rooted, herbaceous vegetation at the uppermost vegetative strata.

Enhancement. Alteration of an existing resource to improve or increase its characteristics and processes without degrading other existing functions. Enhancements are to be distinguished from resource creation or restoration projects.

Erosion Hazard Area. A landform or soil type subject to being worn away by the action of water, wind, freeze-thaw or ice.

Exotic Species. Plants or animals that are not native to the Puget Sound Lowlands region.

Extraordinary Hardship. Prevention of all reasonable economic use of the parcel due to strict application of this Chapter and/or programs adopted to implement this Chapter.

Fish and Wildlife Habitats (of Local Importance). A seasonal range or habitat element with which a given species has a primary association, and which, if altered, may reduce the likelihood that the species will maintain and reproduce over the long-term. These might include areas of relative density or species richness, breeding habitat, seasonal range, and movement corridors. These also include habitats of limited availability or high vulnerability to alteration, such as cliffs and wetlands.

Forested Wetland. Wetlands with at least thirty percent of the surface area covered by woody vegetation greater than twenty feet in height or \geq 3-inch diameter at breast height.

Forest Land. Land used for growing trees, not including Christmas trees, for commercial purposes (as shown by record of any income) that has long-term (six years or more) commercial significance.

Frequently Flooded Areas. Lands indicated on the most current FEMA map to be within the 100-year flood plain. These areas include, but are not limited to, streams, lakes, coastal areas, and wetlands. Local areas not identified on FEMA maps that experience frequent periods of inundation.

Functions. The beneficial roles served by critical areas including, but not limited to, water quality protection and enhancement, fish and wildlife habitat, food chain support, flood storage, conveyance and attenuation, groundwater recharge and discharge, erosion control, wave attenuation, and aesthetic value protection, and recreation. These roles are not listed in order of priority.

Geologically Hazardous Areas. Includes areas susceptible to erosion, sliding, seismic activity, or other geological events. They pose a threat to the health and safety of citizens when used as sites for incompatible commercial, residential or industrial development.

Grading. The physical manipulation of the earth's surface and/or drainage pattern in preparation of an intended use or activity.

High Quality Native Wetlands will be classified by the state wetland rating system for Western Washington. However, the following elements may be considered when identifying locally important functions of a wetland:

1. No, or isolated, human alteration of the wetland topography;
2. No human-caused alteration of the hydrology or else the wetland appears to have recovered from the alteration;
3. Low cover and frequency of exotic plant species;

4. Relatively little human-related disturbance of the native vegetation, or recovery from past disturbance;
5. If the wetland system is degraded, it still contains a viable and high quality example of a native wetland community; and
6. No known major water quality problems.

Hydric Soil. Soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. The presence of hydric soil shall be determined following the methods as defined by the National Technical Committee for Hydric Soils. The presence of hydric soil shall be determined following the methods described in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region.

Hydrophyte or Hydrophytic Vegetation. Plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. The presence of hydrophytic vegetation shall be determined following the methods described in the Washington State Wetland Delineation Manual adopted pursuant to RCW 90.58.380.

Improvement. Any structure or manmade feature.

Isolated Wetlands will be classified by the state wetland rating system for Western Washington. However, the following elements may be considered when identifying locally important functions of a wetland.

1. Are outside of and not contiguous to any wetland system of one acre or more, or the 100-year floodplain of a lake, river, creek, or stream; and,
2. Have no contiguous hydric soil or hydrophytic vegetation between the wetland and contiguous wetlands of one acre or more or any surface water.

Landslide Hazard Areas. Areas potentially subject to risk of mass movement due to a combination of factors, including historic failures.

Land Uses, High Intensity. a zone classification allowing more than one dwelling unit per acre.

Land Uses, Low Intensity. Includes land uses which are associated with low levels of human disturbance or low habitat impacts, including, but not limited to, passive recreation, open space, or those uses listed in §20.93.220 (Allowed Activities).

Land Uses, Medium Intensity. Includes land uses which are associated with moderate levels of disturbance such as open space parks with biking and jogging, etc., conversion of moderate-intensity agriculture (orchards, hay fields, etc), paved trails, gravel roads, utility corridors or right-of-way shared by several utilities including access/maintenance roads.

Mineral Resource Lands. Lands primarily devoted to the extraction of gravel, sand, other construction materials, or valuable metallic or mineral substances.

Native Vegetation. Plant species that are indigenous to the Puget Sound Lowlands region.

Natural Condition. Lands that retain native vegetation, forest duff and naturally occurring contours and drainage patterns not modified by human activity.

Natural Resource Lands. Agriculture, forest, and mineral resource lands as defined in this section.

Constructed Stormwater Wetland. A stormwater management system that is designed and built to function similar to the naturally occurring wetland including native trees and shrubs allowed to grow to maturity.

Nonconforming. Any use, structure, lot, condition, activity, or any other feature or element of private property or the use or utilization of private property that does not conform to any of the

provisions of this code or that was not approved by the city through the appropriate decision-making process required under this code.

Open Space. Land not covered by buildings, roadways, parking areas, or other surfaces through which water cannot percolate into the underlying soils.

Ordinary high water mark. As defined by RCW 90.58.030(2)(b), as now or hereafter amended.

Palustrine Wetland. Freshwater with open water, emergent herbaceous vegetation, scrub-shrub vegetation, and/or trees .

Pond. Any inland body of water, either naturally or artificially formed or increased, that has a surface area of 1,000 square feet or more, *except:* These do not include ponds deliberately designed and created from dry sites such as canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities.

Practicable Alternative. An alternative that is available and capable of being carried out after taking into consideration cost, existing technology, and logistics in light of overall project purposes, and having less impacts to environmentally critical areas. It may include an area not owned by the applicant that can reasonably be obtained, utilized, expanded, or managed in order to fulfill the basic purpose of the proposed activity.

Priority Habitats. Areas with which priority species have a primary association, as determined by the Washington Department of Fish and Wildlife. Priority habitats have one or more of the following attributes: comparatively high or significant species density or richness, significant breeding habitat, significant seasonal ranges, significant wildlife movement corridors, limited availability, and/or high vulnerability.

Priority species. Wildlife species of concern due to their population status and their sensitivity to habitat alteration.

Riparian Habitat. An ecosystem that occurs in the transition zone between aquatic and upland environments.

Scrub-shrub Wetlands. A wetland with at least thirty percent of its surface area covered with woody vegetation less than twenty feet in height or \leq 3-inch diameter at breast height.

Seismic Hazard Areas. Areas subject to the risk of damage as a result of earthquake induced ground shaking, slope failure, settlement, soil liquefaction or surface faulting. Ground shaking is a primary risk, followed by some unstable slopes causing damage below them.

Slope. See §20.93.600 (Geological Hazardous Areas—Classification).

Sphagnum. Any of a large genus of mosses that grows only in wet acidic soils and whose remains become compacted with other plant debris to form peat.

Streams. Those areas where surface waters flow sufficiently to produce a defined channel or bed. A defined channel or bed is indicated by hydraulically sorted sediments or the removal of vegetative litter or loosely rooted vegetation by the action of moving water. The channel or bed need not contain water year-round. This includes DNR Stream Types S, F, F-ESA, Np, Ns (WAC 222-16-030, or as amended hereafter). This definition is not meant to include irrigation ditches, canals, stormwater runoff devices or other entirely artificial watercourses unless they are used to convey any stream naturally occurring prior to construction. Those topographic features that resemble streams but have no defined channels (i.e. swales) shall be considered streams when hydrologic and hydraulic analyses done pursuant to a development proposal predict formation of a defined channel after development.

Steep Slope. See §20.93.600 (Geological Hazardous Areas—Classification).

Structure. Anything which is built or constructed; an edifice or building of any kind, or any piece of work artificially built-up or composed of parts joined together in some definite manner.

Not included are fences less than six feet in height, retaining wall, rockeries, and similar improvements of a minor character less than three feet in height.

Unavoidable. Impacts that remain after a person proposing to alter environmentally critical areas has demonstrated that no practicable alternative exists for the proposed project.

Use. "Development" as that term is defined in Chapter 90.58 RCW. Also means the nature of the activities taking place on private property or within structures thereon.

Water-Dependent. A use for which the use of surface water would be essential in fulfilling the purpose of the proposed project.

Wetlands. "Wetland" or "wetlands" means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands.

Part III. General Provisions

20.93.200 Applicability.

This Chapter applies to environmentally critical areas within the City's shoreline jurisdiction. The maps adopted in AMC 20.93.970 show the general location of the City's shoreline jurisdiction; however, whether an environmentally critical area is within shoreline jurisdiction shall be determined by the Shoreline Administrator. No action shall be taken by any person that results in any alteration of any environmentally critical area or their buffers except as consistent with the purposes, objectives, and goals of this Chapter.

20.93.210 Regulated Activities.

(a) All land use and/or development activities on lands containing environmentally critical areas or affecting off-site environmentally critical areas are subject to this Chapter and are prohibited unless:

1. The use or activity is found to be exempt by the Community Development Director per the Allowed Uses sections of this Chapter; or,
2. The use or activity meets the performance standards found in the Requirements sections of this Chapter.

(b) Land use and development activities include, but are not limited to, the following activities:

1. The removal, excavation, grading, or dredging of soil, sand, gravel, minerals, organic matter, or material of any kind.
2. The dumping, discharging, or filling with any material.
3. The draining, flooding, or disturbing of the water level or water table.

4. The driving of pilings.
5. The placing of obstructions.
6. The construction, reconstruction, demolition, or expansion of any structure.
7. The destruction or alteration of vegetation in an environmentally critical area through clearing, harvesting, shading, intentional burning, or planting of vegetation that would alter the character and function of an environmentally critical area.
8. Activities that result in a significant change of water temperature, a significant change of physical or chemical characteristics of water sources, including quantity, or the introduction of pollutants.

20.93.220 Allowed Activities.

Unless specifically prohibited elsewhere in this Chapter, or unless the use affects a critical area structure, function or value, the following uses are allowed in any environmentally critical area:

1. Conservation or preservation of soil, water, vegetation, fish, shellfish, and other wildlife.
2. Outdoor recreational activities (including fishing, bird watching, hiking, boating, swimming, canoeing, etc.) and aquatic recreation facilities authorized by this 20.93 (unless otherwise prohibited from a particular area because of site-specific issues.
3. When approval is granted by the City, the recreational harvesting of wild crops in a manner that is not injurious to natural reproduction of such crops and provided the harvesting does not require killing the plant, tilling of soil, planting of crops, or alteration of a wetland by changing existing topography, water conditions or water sources.
4. Education, scientific research, and use of nature trails.
5. Navigation aids and boundary markers.
6. Site investigative work necessary for land use application submittals such as surveys, soil logs, percolation tests and other related activities. In every case, impacts shall be minimized and disturbed areas shall be immediately restored.
7. Normal maintenance, repair, or operation of existing structures, facilities, or improved areas.
8. Environmentally critical area restoration work or relocation work which would improve the function of the environmentally critical area, when done pursuant to a plan approved by the City.

20.93.230 Compliance.

All land uses or development applications shall be reviewed to determine whether an environmentally critical area exists on the property for which the application is filed, what the action's impacts to any existing environmentally critical area would be, and what actions are required for compliance with this Chapter. No construction activity, including land clearing or grading, shall be permitted until the information required by this Section is reviewed and the City approves a plan.

20.93.240 Classification as an Environmentally Critical Area.

Criteria for classification as an environmentally critical area will be listed under the pertinent sections of this Chapter.

20.93.250 Procedures.

The City of Arlington shall not grant any approval or permission to conduct development or use in an environmentally critical area prior to the applicant's fulfillment of the requirements of this Chapter. The Community Development Director is authorized to adopt administrative procedures for the purpose of carrying out the provisions of this Chapter.

20.93.260 Submittal Requirements.

To enable the City to determine compliance with this Chapter, at the time of application submittal the applicant shall file a SEPA Environmental Checklist (if use is subject to SEPA), site/resource specific reports as specified in §20.93.270 (General Provisions—Site/Resource Specific Reports), and any other pertinent information requested by the Department of Community Development. The Community Development Director may waive any of these submittal requirements if it is deemed unnecessary to make a compliance determination.

20.93.270 Site/Resource Specific Reports.

Unless waived per §20.93.260 (General Provisions—Submittal Requirements), all applications for land use or development permits proposed on properties containing or adjacent to environmentally critical areas or their defined buffers (see section specific requirements) shall include site/resource specific reports prepared to describe the environmental limitations of the site. These reports shall conform in format and content to guidelines prepared by the Department of Community Development, which is hereby authorized to do so.

20.93.280 Maps and Inventory.

The approximate location and extent of environmentally critical areas in the City are displayed on various inventory maps available at the Department of Community Development. More data will be included as inventories are completed in compliance with the requirements of the Growth Management Act. Maps and inventory lists are guides to the general location and extent of environmentally critical areas. Environmentally critical areas not shown are presumed to exist in the City and are protected under all the provisions of this Chapter. The Shoreline Jurisdiction Areas are identified in the adopted Shoreline maps (AMC 20.93.970). In the event that any of the designations shown on the maps or inventory lists conflict with the criteria set forth in this Chapter, the criteria and site specific conditions shall control.

20.93.290 Dedication of Environmentally Critical Area Easements.

(a) In order to protect environmentally critical areas, Environmentally Critical Area easements or tracts, where proposed as mitigation, shall be marked as such and dedicated to the City and recorded with Snohomish County. Appropriate demarcation methods shall be as set forth in the Public Works Construction Standards and Specifications, and include appropriate permanent fencing and signage unless otherwise determined by the Natural Resources Manager. Fencing or demarcation method must be built of materials that are permanent in nature. Fencing may not be required if the site is a known migration route for wildlife and due to other constraints such as roadways or buildings a fence would prevent migration of those species. Alternative methods of demarcation will be required to replace signage when determined that effectiveness of signage may be limited.

(b) Anyone may offer to dedicate an Environmentally Critical Area easement or tract and its buffer to the City even if not proposed as mitigation.

(c) Such easements or tracts shall cover the environmentally critical area as delineated by their defined boundaries and their buffers.

(d) The basic controlling language for such easements shall be as follows, though site/resource specific modifications may be made:

"Critical Area Protection Easement: This open space tract is intended to protect <<< *insert ECA type and native vegetation* >>> and shall preclude: grading or any recontouring of the land; placement of structures, wells, leach fields, utility lines and/or easements, and any other thing; vehicle activity; grazing; dumping; and the addition or removal of vegetation, except pursuant to an approved restoration plan, and except that vegetation may be selectively removed and/or pervious trails and/or utility lines compatible with native tree and shrub vegetation may be placed in the buffer areas in locations approved by the Director of Planning and Community Development."

20.93.300 Dedication of Land and/or Easements in Lieu of Required Parks or Open Space.

The dedication of environmentally critical areas and their buffers may not be used for satisfying the park or open space requirements of AMC Chapter 20.52 (Recreational Facilities & Open Space).

20.93.310 Increased Buffer Widths

The permit-issuing authority shall require increased standard buffer zone widths on a case-by-case basis when a larger buffer is necessary to protect environmentally critical area functions and values based on local conditions. This determination shall be supported by appropriate documentation showing that it is reasonably related to protection of the functions and values of the regulated environmentally critical area. Such determination shall be attached as a permit condition and shall demonstrate that:

- (a) A larger buffer is necessary to maintain viable populations of existing species; or
- (b) The environmentally critical area is used by species proposed or listed by the federal government or the state as endangered, threatened, sensitive, candidate, or monitor, critical or outstanding potential habitat for those species or has unusual nesting or resting sites such as heron rookeries or raptor nesting trees; or
- (c) The adjacent land has minimal vegetative cover or slopes greater than 15 percent and is therefore susceptible to severe erosion, and erosion control measures will not effectively prevent adverse environmentally critical area impacts.
- (d) The recommended widths for buffers are based on the assumption that the buffer is vegetated with a native plant community appropriate for the ecoregion or with one that performs similar functions. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer should either be planted to create the appropriate plant community or the buffer should be widened to ensure that adequate functions of the buffer are provided. Generally, improving the vegetation will be more effective than widening the buffer.

20.93.320 Buffer Width Averaging.

Buffer widths may be modified by averaging. In no instance shall the buffer width be reduced by more than 25% of the standard buffer unless specifically identified in other sections of the 20.93.

Buffer width averaging shall be allowed only where the applicant demonstrates all of the following:

- (a) That averaging is necessary to avoid an extraordinary hardship to the applicant caused by circumstances peculiar to the property or that there would be a benefit to the Environmentally Critical Area;
- (b) That the least impactful aspects of the proposed land use would be located adjacent to areas where the buffer width is reduced;
- (c) That width averaging will not adversely impact the environmentally critical area functional values; and
- (d) That the total area contained within the buffer after averaging is no less than that contained within the standard buffer prior to averaging.

20.93.330 Buffers to be Retained in Natural Condition

Except as otherwise specified, all buffers shall be retained in their natural condition. Where buffer disturbance may or has occurred during construction, revegetation with native vegetation will be required.

20.93.340 Building Setbacks from Buffers

A building setback of 15 feet is required from the edge of any critical area buffer, as defined in subsequent sections of this Chapter. Minor structural intrusions into the area of the building setback may be allowed if the permit-issuing authority determines that such intrusions will not negatively impact the environmentally critical area or cause the buffer vegetation to be trimmed or removed. The setback shall be identified on the site plan.

20.93.360. Reserved

20.93.370 Non-Conforming Activities.

Except for cases of discontinuance as part of normal agricultural practices, non-conforming uses shall be governed by Part VI of this Chapter 20.93 and AMC Chapter 20.32 (Nonconforming Situations).

20.93.380 Assessment Relief.

The Snohomish County Assessor's office considers environmentally critical area regulations in determining the fair market value of land. Any owner of an undeveloped critical area who has dedicated an easement or entered into a perpetual conservation restriction with the City of Arlington or a qualified nonprofit organization to permanently control some or all regulated activities in that portion of land assessed consistent with these restrictions shall be considered for exemption from special assessments to defray the cost of municipal improvements such as sanitary sewers, storm sewers, and water mains.

20.93.390 Mitigation Plan Requirements.

In the event that mitigation is required, the applicant shall be required to provide a mitigation plan for approval by the Community Development Director. The plan shall provide information on land acquisition, construction, maintenance and monitoring of the replaced critical area. All mitigation plans shall include the following submitted by the applicant or a qualified biologist, civil or geotechnical engineer:

- (a) Specific goals and objectives describing site function, target species and selection criteria;
- (b) Performance standards that shall include criteria for assessing goals and objectives;
- (c) Contingency plans that clearly define course of action or corrective measures needed if performance standards are not met;
- (d) A legal description and a survey prepared by a licensed surveyor of the proposed development site and location of the critical area(s) on the site.
- (e) The need for performance or maintenance securities.
- (f) A scaled plot plan that indicates the proposed construction in relation to zoning setback requirements and sequence of construction location in relation to zoning setback requirements and sequence of construction phases including cross-sectional details, topographic survey data (including percent slope, existing and finished grade elevations) and other technical information as required in sufficient detail to explain, illustrate and provide for:
 - 1. Soil and substrate conditions, topographic elevations, scope of grading and excavation proposal, erosion and sediment treatment and source controls needed for critical area construction and maintenance;
 - 2. Planting plans specifying plant species, types, quantities, location, size spacing, or density. The planting season or timing, watering schedule, and nutrient requirements for planting, and where appropriate, measures to protect plants from destruction; and
 - 3. Contingency or mid-course corrections plan and a minimum five year monitoring and replacement plan establishing responsibility for removal of exotic and nuisance vegetation and permanent establishment of the critical area and all component parts.
- (g) A clearly defined approach to assess progress of the project.
- (h) The plan must indicate ownership, size, type, and complete ecological assessment including flora, fauna, hydrology, functions, etc., of the critical area being restored or created; and
- (i) The plan must also provide information on the natural suitability of the proposed site for establishing the replaced critical area, including water source and drainage patterns, topographic position, wildlife habitat opportunities, value of existing area to be converted, etc.
- (j) Once the plan is implemented, as-builts shall also be submitted pursuant to Department of Public Works requirements.

Part IV. Fish and Wildlife Conservation Areas

20.93.400 Classification.

Fish and Wildlife Conservation Areas include:

- (a) Lands containing priority habitats and species, including plant and/or animal species listed on Federal or State threatened or endangered species lists.
- (b) Ponds and their submerged aquatic beds that provide fish or wildlife habitat.
 - 1. "Type S" waters of the state as defined in WAC 222-16-030, which includes all waters, within their ordinary high-water mark, as inventoried as "shorelines of the state" under

Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW, but not including those waters' associated wetlands as defined in Chapter 90.58 RCW.

(c) Segments of natural waters and periodically inundated areas of their associated wetlands that are used by salmonids for off-channel habitat. These areas are critical to the maintenance of optimum survival of juvenile salmonids. This habitat shall be identified based on the following criteria:

1. The site must be connected to a stream bearing salmonids and accessible during some period of the year; and
2. The off-channel water must be accessible to juvenile salmonids through drainage with less than a 5% gradient.

(d) Lakes, ponds, and streams planted with game fish (defined at RCW 77.09.020), including those planted under the auspices of a federal, state, local, or tribal programs, or which support priority fish species as identified by the Department of Fish and Wildlife.

(e) State natural area preserves and natural resource conservation areas.

(f) Habitats or species of local importance. Such habitats or species may be locally listed per the process elucidated in §20.93.420 (Species/Habitats of Local Importance).

20.93.410 Determination of Boundary.

The Community Development Director shall determine the boundaries of Fish and Wildlife Conservation Areas. In doing so he may rely on information from qualified federal, state, county, or tribal agencies or on a biological resources survey prepared by a qualified wildlife biologist per the Department's Biological Resources Survey Guidelines. Such reports or information may be required to be provided by an applicant for an activity or permit at the request of the City. In the location of shoreline jurisdiction the adopted Shoreline designation maps establish the boundary. When a project is at or below OHWM and within shoreline setbacks, the OHWM shall be determined by a site-specific investigation using field indicators.

20.93.420 Species/Habitats of Local Importance.

(a) Species or habitats may be listed as a species or habitat of local importance by the City Council according to the following process:

1. An individual or organization must:
 - a. Demonstrate a need for special consideration based on: (i) declining populations, (ii) sensitivity to habitat manipulation; or (iii) commercial or game value, or other special value, such as flood refugia or public appeal.
 - b. Propose relevant management strategies considered effective and within the scope of this Chapter.
 - c. Provide species habitat location(s) on a map.
2. Submitted proposals will be reviewed by the Community Development Director and forwarded to the Departments of Fish and Wildlife and Natural Resources, and/or other local, state, federal, or tribal agencies or experts for comment and recommendation regarding accuracy of data and effectiveness of proposed management strategies.
3. The City Council will hold a public hearing for proposals found to be complete, accurate, potentially effective, and within the scope of this Chapter. Approved nominations will become designated a "Species or Habitat of Local Importance" and will be subject to the provisions of this Chapter.

(b) Species or Habitats of Local Importance include:

1. None adopted as of December 5, 2012.

20.93.430 Allowed Activities.

Except where regulated by other sections of this or any other Title or law, the following uses shall be allowed within Fish and Wildlife Conservation Areas when the requirements of §20.93.440 (Fish and Wildlife Conservation Areas—Requirements) have been met and mitigation adequate to alleviate any other impacts has been proposed:

- (a) Those activities listed in §20.93.220 (General Provisions—Allowed Activities)
- (b) Activities consistent with the species located there and all applicable state and federal regulations regarding the species, as determined by the Community Development Director, who will consult with other resource agencies including Tribes as to their recommendations based on adopted standards or guidance.
- (c) Within the 50-foot management zone of the buffer required pursuant to §20.93.440 (Fish & Wildlife Conservation Areas--Requirements) the following uses are allowed as long as 65% of native tree cover is established and maintained and the Total Effective Impervious Area (TIA) remains below 3%:

- 1. When the 50-foot management zone is in an already developed state including buildings, parking lots, lawn or ornamental landscaping stormwater management systems designed to blend into the natural landscape allowing full mature growth of native trees and shrubs, and provide the same or greater functional habitat that would occur in a naturally vegetated buffer. Specifically, this does not include buried vaults, ecology block or grass-lined ponds or swales (though ponds or swales planted with native vegetation may be allowed). Such systems are required to provide diffuse effluent point(s) to the immediate edge of the no-touch buffer to allow infiltration and polishing. Walkways and trails, provided that those pathways are limited to minor crossings having no adverse impact on water quality. They should be generally parallel to the perimeter of the wetland, located only in the outer twenty-five percent (25%) of the wetland buffer area, and located to avoid removal of significant trees. They should be limited to pervious surfaces no more than five (5) feet in width for pedestrian use only. Raised boardwalks utilizing non-treated pilings may be acceptable.
- 2. Utility easements and access routes that are built so as to not affect the lateral or vertical hydrology of the system, and are compatible with full maturity of native tree and shrub species.
- 3. Other uses as may be approved by the City's Natural Resources Manager as recommended in a local, state or federal watershed management plan or low impact development regulations.

20.93.440 Requirements.

(a) Except as provided in Subsections (b) and (c):

- 1. For endangered or threatened salmonid Fish and Wildlife Conservation Areas, a 150-foot buffer shall be required for all regulated activities adjacent to the Fish and Wildlife Conservation Areas. This buffer shall consist of a 100-foot area closest to the stream or river being designated a Native Growth Protection Easement in which no human activities may be allowed (except as provided by §20.93.430 (Fish and Wildlife Conservation Areas—Allowed Activities), and the remaining 50-foot zone being

designated a management zone, in which vegetation may be managed solely for public health and safety reasons that may threaten structures or public infrastructure. The Natural Resource may require a landowner to have an assessment performed by a professional arborist to determine if a tree is hazardous. If found hazardous the methods of removal will utilize options that will result in some level of habitat function (i.e. snag, nurse log, etc). Buffers for salmonid Fish and Wildlife Conservation Areas shall be measured pursuant to §20.93.730 (Streams, Creeks, Lakes, & Other Surface Water--Requirements).

2. For all other Fish and Wildlife Conservation Areas, the applicant shall have a habitat protection plan prepared by a qualified biologist, in which appropriate buffers and other protection shall be identified based on the best available science and/or standards promulgated by the state or federal agency with jurisdiction for the identified species being protected. Buffers shall be measured from the Fish and Wildlife Conservation Areas boundary as surveyed in the field.

(b) Buffer widths may be increased based on recommendations by the state or federal agency with jurisdiction.

(c) Buffer widths from Fish and Wildlife Conservation Areas may be decreased in areas where specific project recommendations can be found in section 20.93 320 of this chapter, local watershed recovery plans, the Shoreline Master Program has identified allowed uses, a habitat protection plan, or either a property-specific or programmatic biological assessment showing that the proposal would have negligible adverse impact on the protected species or habitat (with or without mitigation) has been approved by the state or federal agency with jurisdiction. Said biological assessments would be prepared by the applicant in a format approved by the agency with jurisdiction. The width of the buffer would be determined through this biological assessment approval process but could in no case be reduced to less than that required for the underlying environmentally critical areas by other sections of this chapter.

(d) For streams upstream from an endangered or threatened salmonid Fish and Wildlife Conservation Area, if requested by the City, applicants shall have prepared a report analyzing potential downstream impacts to the FWCA and propose appropriate measures to mitigate any identified significant impacts. Such reports shall be prepared by a qualified biologist.

(e) The applicant shall dedicate a functionally exclusive Environmentally Critical Area easement for the protection of wildlife and/or habitat over the Fish and Wildlife Conservation Areas and its buffer, as determined above. Where such requirement leads to, or would in the opinion of the permit-issuing authority lead to, a court finding of a taking mitigation as described in §20.93.450 (Fish and Wildlife Conservation Areas—Mitigation) may be considered.

20.93.450 Mitigation.

In order to avoid significant environmental impacts and, if in the opinion of the permit-issuing authority the requirements listed in §20.93.440 (Fish and Wildlife Conservation Areas—Requirements) do not adequately mitigate impacts, the applicant for a land use activity or development permit may consider performing the following actions, listed in order of preference. What is considered adequate mitigation will depend on the nature and magnitude of the potential impact. Specific mitigation requirements are outlined in the Shoreline Master Program regulations.

(a) Where on-site protection is not possible, dedicate a functionally exclusive easement for the protection of equivalent (in type and value) wildlife and/or habitat over Fish and Wildlife

Conservation Areas and a 150-foot buffer on off-site Fish and Wildlife Conservation Areas at a minimum 2:1 ratio (2 offsite areas for every 1 onsite area impacted) on property that would likely not be required to dedicate such an easement were it to undergo a permitting process. If functionally equivalent habitat is not available, then a higher ratio may be considered to compensate. The location of any off-site Fish and Wildlife Conservation Areas shall be located as near to the site as possible, following this preferred order: i) hydrologically connected to the impacted Fish and Wildlife Conservation Areas or via an intact habitat corridor, ii) elsewhere within the City, iii) within the Arlington UGA, iv) within the sub-basin, and v) watershed.

Part V. Frequently Flooded Areas

20.93.500 Classification.

Classification for Flood Zones shall be consistent with the 100-year floodway and floodplain designations as adopted by the City, or where the City has not adopted such a designation, by the 100-year flood zone designation of the Federal Emergency Management Agency and the National Flood Insurance Program. Any such designations adopted by the City shall consider the following criteria if and when designating and classifying these areas:

- (a) Flooding impact to human health, safety, and welfare and to public facilities and services; and,
- (b) Documentation including federal, state and local laws, regulations and programs, local maps and federally subsidized flood insurance programs; and,
- (c) The future floodplain defined as a channel of the stream and that portion of the adjoining floodplain which is necessary to contain and discharge the base flood flow at build-out without any measurable increase in flood heights.

20.93.510 Determination of Boundary.

The boundary of a Flood Zone shall be contiguous with the 100-year floodway and floodplain designations as adopted by the City, or where such a designation has not been adopted by the City, the 100-year floodplain designation of the Federal Emergency Management Agency (FEMA) and the National Flood Insurance Program where it has been delineated (shown on Flood Insurance Rate Maps (FIRM)). Where this information does not exist, the boundary determination shall be made by a licensed engineer and based upon the same criteria used by FEMA including the consideration of the Channel Migration Zone. The Flood Plain Administrator shall confirm this determination.

20.93.520 Allowed Activities.

Except where regulated by other sections of this or any other Title or law, the following uses shall be allowed within floodways or flood plains when the requirements of §20.93.530 (Frequently Flooded Areas—Requirements) have been met and mitigation adequate to alleviate any other impacts has been proposed:

(a) Floodways

1. Those activities allowed per the Shoreline Master Program regulations and §20.93.220 (General Provisions—Allowed Activities).
2. Outdoor recreational activities (including fishing, bird watching, hiking, boating, swimming, canoeing, bicycling, etc.) and aquatic recreation facilities authorized by this 20.93.

3. Those uses allowed by §20.64.150 (Permissible Uses Within Floodways).

(b) Floodplains

1. All those activities allowed in floodways

2. Recreational Fields

3. Those uses allowed by and consistent with the regulations of Chapter 20.64 (Floodways, Floodplains, Drainage, and Erosion).

20.93.530 Requirements.

All land uses and development proposals shall comply with the regulations for general and specific flood hazard protection (see Chapter 20.64, Floodways, Floodplains, Drainage, and Erosion). Development shall not reduce the effective base flood storage volume. Reduction of the floodwater storage volume effectiveness due to grading, construction, or other regulated activities shall be compensated for by creating on- or off-site detention and/or retention ponds. Effective storage capacity must be maintained. Base flood data and flood hazard notes shall be on the face of any recorded plat or site plan including, but not limited to, base flood elevations, flood protection elevation, boundary of floodplain and zero rise floodway.

20.93.540 Mitigation.

If potential flooding impacts cannot be avoided by design or by providing on- or off-site detention and/or retention ponds, other forms of mitigation may be considered in order to avoid significant environmental impacts. Applicants must provide mitigation plans exploring and analyzing any proposed mitigation measures, which must be consistent with the Shoreline Master Program and the regulations of AMC Chapter 20.64 (Floodways, Floodplains, Drainage, and Erosion).

Part VI. Geologically Hazardous Areas

20.93.600 Classification.

(a) Geologically Hazardous Areas include areas susceptible to erosion, sliding, earthquakes, liquefaction, or other geological events. Geologically Hazardous Areas shall be classified based upon the history or existence of landslides, unstable soils, steep slopes, high erosion potential or seismic hazards. In determining the significance of a geologically hazardous area the following criteria shall be used:

1. Potential economic, health, safety, and environmental impact related to construction in the area;
2. Soil type, slope, vegetative cover, and climate of the area;
3. Available documentation of history of soil movement, the presence of mass wastage, debris flow, rapid stream incision, stream bank erosion or undercutting by wave action, or the presence of an alluvial fan which may be subject to inundation, debris flows, or deposition of stream-transported sediments.

(b) The different types of Geologically Hazardous Areas are defined as follows:

1. Erosion hazard areas are as defined by the USDA Soil Conservation Service, United States Geologic Survey, or by the Department of Ecology Coastal Zone Atlas. The following classes are high erosion hazard areas.

- a. Class 3, class U (unstable) includes severe erosion hazards and rapid surface runoff areas;

- b. Class 4, class UOS (unstable old slides) includes areas having severe limitations due to slope; and,
 - c. Class 5, class URS (unstable recent slides).
2. Landslide hazard areas shall include areas subject to severe risk of landslide based on a combination of geologic, topographic and hydrologic factors. Some of these areas may be identified in the Department of Ecology Coastal Zone Atlas, or through site-specific criteria. Landslide hazard areas include any of the following:
- a. Areas characterized by slopes greater than 15 percent and impermeable soils (typically silt and clay) frequently interbedded with permeable granular soils (predominantly sand and gravel) or impermeable soils overlain with permeable soils or springs or groundwater seepage.
 - b. Any area that has exhibited movement during the Holocene epoch (from 10,000 years ago to present) or which is underlain by mass wastage debris of that epoch;
 - c. Any area potentially unstable due to rapid stream incision, stream bank erosion or undercutting by wave action.
 - d. Any area located on an alluvial fan presently subject to or potentially subject to inundation by debris flows or deposition of stream-transported sediments;
 - e. Any area with a slope of 33 percent or greater and with a vertical relief of ten or more feet except areas composed of consolidated rock;
 - f. Any area with slope defined by the United States Department of Agriculture Soil Conservation Service as having a severe limitation for building site development; and
 - g. Any shoreline designated or mapped as class U, UOS, or URS by the Department of Ecology Coastal Zone Atlas.
3. Slopes:
- a. Moderate slopes shall include any slope greater than or equal to 15 percent and less than 33 percent.
 - b. Steep slopes shall include any slope greater than or equal to 33 percent.
4. Seismic hazard areas shall include areas subject to severe risk of earthquake damage as a result of seismic induced settlement, shaking, slope failure or soil liquefaction. These conditions occur in areas underlain by cohesion less soils of low density usually in association with a shallow groundwater table.

20.93.610 Determination of Boundary.

The Community Development Director, relying on a geotechnical or similar technical report and other information where available and pertinent, shall make determination of a boundary of a Geologically Hazardous Area. Such reports or information shall be provided by an applicant for an activity or permit at the request of the City.

20.93.620 Allowed Activities.

Except where regulated by other sections of this or any other Title or law, the following uses shall be allowed within Geologically Hazardous Areas when the requirements of §20.93.630 (Geologically Hazardous Areas—Requirements) have been met and mitigation adequate to alleviate any other impacts has been proposed:

- (a) Those activities allowed per §20.93.220 (General Provisions—Allowed Activities).

(b) Any other use allowed per the zone and Shoreline Master Program, provided that it meets the requirements of §20.93.630 (Geologically Hazardous Areas—Requirements) and will not have a detrimental impact on the health, safety, and welfare of the public, or will not negatively impact neighboring properties.

(c) Recontouring of land to eliminate geologically hazardous areas, including steep slopes, is expressly prohibited unless otherwise approved through the land use permit process (not the construction plan review process). The permit issuing authority may approve recontouring to eliminate geological hazardous areas only upon finding that such action would serve the health, safety, and welfare of the general public and not just a particular development proposal.

20.93.630 Requirements.

(a) Erosion Hazard Areas: All development proposals on sites containing erosion hazard areas shall comply with the following requirements:

1. Erosion control plan: The applicant shall submit an erosion control plan prior to the approval of any permit. Plans shall be consistent with the guidelines set forth in the Uniform Building Code (UBC) grading section and the Department of Public Works' Construction Standards and Specifications.

2. Alteration: All authorized clearing for roads, utilities, etc., shall be limited to the minimum necessary to accomplish the engineering design. Alterations of erosion hazard sites shall meet the requirements of AMC Chapter 20.44, Part II (Land Clearing, Grading, Filling, and Excavation).

(b) Landslide Hazard Areas: All development proposals on sites containing landslide hazard areas shall comply with the following requirements:

1. Alterations: Landslide hazard areas located on slopes 33 percent or greater shall be altered only as allowed under standards for steep slopes set forth in this section.

Landslide hazard areas and land adjacent to such a hazard area located on slopes less than 33 percent may be altered if:

a. The proposal will not increase surface water discharge or sedimentation and will not decrease adjacent property slope stability; and

b. It can be demonstrated through geotechnical analysis that there is no significant risk to the development proposal or adjacent properties or that the proposal can be designed so that the landslide hazard is significantly eliminated or mitigated such that the site and adjacent property are rendered as safe as an area without landslide hazards.

2. Buffers: Unless the alteration is approved under the provisions in Subsection 1 above (Alterations), a minimum buffer of 50 feet shall be provided from the edges of all landslide hazard areas regardless of slope. The buffer may be extended beyond these limits to mitigate erosion hazards.

3. Building Setback Lines: All buildings are required to be set back a minimum of 15 feet from the buffer or landslide hazard area.

(c) Slopes: Grading, vegetation removal, and other site disturbances on slopes can lead to erosion or landslides. If the amount of the slope disturbed is decreased, then the risk of erosion and landslides decreases. The risk is also less on slopes that are less steep. Therefore, all site disturbances on moderate and steep slopes and their buffers shall be reviewed and certain standards are required to be met depending on the percent of slope.

1. The maximum slope and buffer disturbance allowed, unless restricted for other reasons, is:

Table 20.93-2: Slope Disturbance Allowed	Disturbance Allowed
Slope	
1 - 14%	100%
15 - 24%	60%
25 – 32%	45%
33% or greater	0%

2. Development on moderate and steep slopes shall meet the following standards:

- a. Development must be located to minimize disturbance and removal of vegetation and also to protect most critical areas and retain open space.
- b. Structures must be located or clustered where possible to reduce disturbance and maintain natural topographic character.
- c. Grading shall be minimized;
- d. Structures should conform to the natural contour of the slope, with foundations tiered where possible to conform to existing topography of site.
- e. Natural surface or sub-surface drainage courses shall be preserved.
- f. All development proposals shall be designed to minimize the footprint of building and other disturbed areas. Common access drives and utility corridors are encouraged.
- g. All development shall be designed to minimize impervious lot coverage and should incorporate under- or over-structure parking and multi-level structures.
- h. Roads, walkways and parking areas should be designed to parallel the natural contours.
- i. Access shall be in the least critical area of the site.

3. Additional standards for steep slopes: All proposed development on steep slopes shall be avoided if possible. Alterations are allowed in only the following instances provided that the standards in 1 and 2, above, can be met; and, where it has been demonstrated through a soils report prepared by a geotechnical engineer that no adverse impact will result from the proposal and where approved surface water conveyance will result in minimum slope and vegetation disturbance:

- a. The construction of approved public or private trails provided they are constructed in a manner that is not detrimental to surface water runoff control (e.g., cable lift access); and
- b. The construction of public or private utility corridors in accordance with 20.93 regulations provided it has been demonstrated that such alterations will not increase landslide or erosion risks.

4. In all other cases, no disturbance is allowed on a steep slope and a minimum 15-foot vegetated buffer shall be established from the top, toe and along all sides of the slope. The buffer may be extended beyond these limits on a case-by-case basis to mitigate landslide and erosion hazards.

(d) Seismic Hazard Areas: Standards for development in seismic hazard areas shall be in accordance with the provisions in the IBC , as adopted by the City of Arlington.

(e) For all Geological Hazardous Areas on which development is not permitted by the above regulations, the applicant shall dedicate to the City an exclusive Environmentally Critical Area easement for the protection of Geological Hazardous Areas over the Environmentally Critical Area and a buffer consistent with the standards listed above.

20.93.640 Mitigation.

If potential geologic impacts cannot be avoided by adhering to the above requirements, other forms of mitigation may be considered. Applicants must provide mitigation plans exploring and analyzing any proposed mitigation measures. What is considered adequate mitigation will depend on the nature and magnitude of the potential impact to the Shoreline and an ecological function. For example, some potential risk due to construction in geologically hazardous areas may be reduced through retention of existing vegetation.

Part VII. Streams, Creeks, Rivers, Lakes and Other Surface Water

20.93.700 Classification.

(a) The City hereby adopts the stream classification system of the state, as specified in WAC 222-16-030, as may be amended. Briefly, these are as follows (see WAC 222-16-030 for complete definitions of Types):

- a. Type S Water means all the waters, within their ordinary high-water mark, as inventoried as —shorelines of the state under Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW, but not including those waters' associated wetlands as defined in Chapter 90.58 RCW.
- b. Type F-ESA Water means all the waters meeting the criteria of Type F stream, but has been identified as having presumed use by ESA listed fish species.

(b) "Type F Water" shall mean segments of natural waters that are not classified as Type 1 Water and have a substantial fish, wildlife, or human use. These are segments of natural waters and periodically inundated areas of their associated wetlands, which:

1. Are diverted for domestic use by more than 100 residential or camping units or by a public accommodation facility licensed by the State to serve more than 100 persons, where such diversion is determined by the Washington State Department of Ecology to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type 2 Water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less;
2. Are within a federal, state, local, or private campground having more than 30 camping units: Provided, that the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement;
3. Are used by substantial numbers of anadromous or resident game fish for spawning, rearing or migration. Waters having the following characteristics are presumed to have highly significant fish populations:
 - a. Stream segments having a defined channel 20 feet or greater in width between the ordinary high-water marks and having a gradient of less than 4 percent.
 - b. Lakes, ponds, or impoundments having a surface area of 1 acre or greater at seasonal low water; or

4. Are used by salmonids for off-channel habitat. These areas are critical to the maintenance of optimum survival of juvenile salmonids. This habitat shall be identified based on the following criteria:

- a. The site must be connected to a stream bearing salmonids and accessible during some period of the year; and
- b. The off-channel water must be accessible to juvenile salmonids through drainage with less than a 5% gradient.
- c. Ponds or impoundments having a surface area of less than 0.5 acre at seasonal low water and having an outlet to an anadromous fish stream.

5. Are highly significant for protection of downstream water quality. Tributaries which contribute greater than 20 percent of the flow to a Type S or F Water are presumed to be significant for 1,500 feet from their confluence with the Type S or F Water or until their drainage area is less than 50 percent of their drainage area at the point of confluence, whichever is less.

(c) Type Np Water

Segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are waters that do not go dry any time of the year of normal rainfall. However, for the purpose of water typing, Type Np waters include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow. Np waters begin downstream of the point along the channel where the contributing basin area is at least 52 acres in size.

(d) Type Ns Water shall be

Segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np water. Ns waters must be physically connected by an above-ground channel system to Type S, F, or Np waters.

(e) Non-natural water course means constructed vegetated swales and ditches that are designed and installed for the express purpose of periodically moving storm water not associated with naturally occurring streams.

20.93.710 Determination of Boundary.

The Community Development Director, relying on delineation by a licensed engineer or other comparable expert, shall determine the boundary of the creek, stream, river, lake, or other surface water. For ravines with banks greater than ten (10) feet in depth the boundary shall be contiguous with the top of the bank. Where there is no ravine or the bank is less than ten (10) feet in depth, the boundary shall be contiguous with the Ordinary High Water Mark. In case of disagreement as to its location, the ultimate decision on the OHWM shall rest with Ecology.

20.93.720 Allowed Activities.

Except where regulated by other sections of this, Shoreline Master Program or any other Title or law (e.g., see Part IV of this Chapter, Fish and Wildlife Conservation Areas), the following uses shall be allowed within streams, creeks, rivers, lakes, and other surface waters when the requirements of §20.93.730 (Streams, Creeks, Rivers, Lakes and Other Surface Water—Requirements) have been met and mitigation adequate to alleviate any other impacts has been proposed:

- (a) Those activities allowed under §20.93.220 (General Provisions—Allowed Activities).
- (b) Bridges and other crossings for public and private rights-of-way where no other feasible means on ingress and egress to a parcel is available.

20.93.730 Requirements.

(a) To retain the natural functions of streams and stream corridors, and unless modified by Part IV (Fish & Wildlife Habitat), the streamside buffers listed in Table 20.93-3: Non-ESA Stream Buffer Width shall be maintained on both sides of the Environmentally Critical Area. All existing native vegetation within these buffers shall be preserved. (Note also that buffer averaging may be allowed pursuant to §20.93.320 (General Provisions—Buffer Width Averaging.)

(b) To protect the natural functions and aesthetic qualities of a stream and stream buffer, a detailed temporary erosion control plan that identifies the specific mitigating measures to be implemented during construction to protect the water from vegetation removal, erosion, siltation, landslides and hazardous construction materials shall be required. The City of Arlington shall review and approve the plan with the appropriate state, federal and tribal agencies, and any adjacent jurisdiction.

(c) In accordance with the Shoreline Master Plan the buffer set-back in the Historic Shoreline Business District is 30 feet landward from the OHWM or Top of Slope whichever is most protective of the shoreline, and those activities that are allowed under AMC 20.64 Floodplains.

Table 20.93-3: Non-ESA Stream Buffer Width Stream

Type	Standard Buffer
S	150 feet
F-ESA	150 feet
F	100 feet
Np	50 feet
Ns	50 feet
Non-natural	None

- c. The applicant shall dedicate to the City an exclusive Environmentally Critical Area easement for the protection of creeks, streams, rivers, lakes, or other surface water over the Environmentally Critical Area and a buffer consistent with the standards listed in Subsection (a).

20.93.740 Mitigation.

(a) In order to avoid significant environmental impacts for those activities not regulated by the Shoreline Master Program and allowed pursuant to §20.93.720 (Streams, Creeks, Rivers, Lakes and Other Surface Water—Allowed Activities), the applicant for a land use or development permit will select one or more of the following mitigation action, listed in order of preference.

What is considered adequate mitigation will depend on the nature and magnitude of the potential impact.

1. On-Site Environmentally Critical Area Restoration/Improvement—Restoration or improvement in functional value of degraded on-site waterways and/or their buffers at a 2:1 ratio (2 square feet for every 1 square foot impacted).
2. On-Site ECA/ Creation—Creation of on-site waterways and their buffers at a 2:1 ratio (2 square feet for every 1 square foot impacted).
3. On-Site ECA Buffer Restoration—Restoration or improvement in functional value of degraded on-site waterway buffers at a ratio of 6:1.

(b) All ECA restoration, creation and/or enhancement projects required pursuant to this Chapter either as a permit condition or as the result of an enforcement action shall follow a mitigation plan prepared in conformance to the requirements of §20.93.390 (Mitigation Plan Requirements).

Part VIII. Wetlands

20.93.800 Classification.

(a) Wetlands shall be rated according to the Washington State wetland rating system for; *Washington State Wetland Rating System for Western Washington - Revised*, Ecology Publication #04-06-025) or as revised by Ecology. Wetland rating categories shall be applied as the wetland exists at the time of the adoption of this Title or as it exists at the time of an associated permit application. Wetland rating categories shall not change due to illegal modifications. Wetlands identified as having local significance in hydrologic and habitat functions may be rated higher based on importance.

(b) Wetland Types.

1. **Category I.** Category I wetlands are: 1) relatively undisturbed estuarine wetlands larger than 1 acre; 2) wetlands that are identified by scientists of the Washington Natural Heritage Program/DNR as high quality wetlands; 3) bogs; 4) mature and old-growth forested wetlands larger than 1 acre; 5) wetlands in coastal lagoons; or 6) wetlands that perform many functions well and score 70 or above.

Category I wetlands represent a unique or rare wetland type, are more sensitive to disturbance than most wetlands, are relatively undisturbed and contain some ecological attributes that are impossible to replace within a human lifetime, or provide a very high level of functions.

2. **Category II.** Category II wetlands are: 1) estuarine wetlands smaller than 1 acre, or disturbed estuarine wetlands larger than 1 acre; 2) a wetland identified by the Washington State Department of Natural Resources as containing “sensitive” plant species; 3) a bog between $\frac{1}{4}$ and $\frac{1}{2}$ acre in size; 4) an interdunal wetland larger than 1 acre; or 5) wetlands with a moderately high level of functions. Wetland scoring between 51 and 69 points. Wetlands identified as having local significance in reducing flooding or providing habitat.

Category II wetlands are difficult, though not impossible, to replace, and provide high levels of some functions. These wetlands occur more commonly than Category I wetlands, but they still need a relatively high level of protection.

3. **Category III.** Category III wetlands are: 1) wetlands with a moderate level of functions scoring between 30 and 50 points; or 2) interdunal wetlands between 0.1 and 1 acre in size. Generally, wetlands in this category may have been disturbed in some way and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.

4. **Category IV.** Category IV wetlands have the lowest levels of functions scoring less than 30 points and are often heavily disturbed. These are wetlands that should be replaceable, and in some cases may be improved. However, experience has shown that replacement cannot be guaranteed in any specific case. These wetlands may provide some important functions and should be protected to some degree.

20.93.810 Determination of Boundary.

- (a) The Community Development Director, relying on a field investigation supplied by an applicant, and applying the wetland definition provided in this Chapter shall determine the location of the wetland boundary. Qualified professional and technical scientists shall perform wetland delineations. Identification of wetlands and delineation of their boundaries pursuant to this Chapter shall be done in accordance with the approved federal wetland delineation manual and applicable regional supplements. All areas within the City meeting the wetland designation criteria in that procedure are hereby designated critical areas and are subject to the provisions of this Chapter. Criteria to be included in required wetland identification reports may be found in §20.93.390 Mitigation Plan Requirements). The applicant is required to show the location of the wetland boundary on a scaled drawing as a part of the permit application.

1. **Designating, Defining, and Identifying Wetlands.** Wetlands are those areas, identified in accordance with RCW 90.58.030: "Wetlands" means areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands. All areas within the [city/county] meeting the criteria in the wetland definition regardless of whether these areas have previously been identified or mapped, are hereby designated critical areas and are subject to the provisions of this Title.

2. **Mapping.**

- (a) The approximate location and extent of wetlands are shown on the critical area(s) maps adopted in the City of Arlington Comprehensive Plan. Additionally, soil maps produced by U.S. Department of Agriculture Natural Resources Conservation Service may be useful in helping to identify potential wetland areas. These

maps are to be used as a guide for the city, project applicants, and/or property owners to identify potential wetland areas that may be subject to the provisions of this Title.

(b) It is the actual presence of wetlands on a parcel, as delineated by the requirements of the methods in the approved federal wetland delineation manual and applicable regional supplements in accordance with WAC 173-22-035, that establishes duties under this chapter. The exact location of a wetland's boundary shall be determined through the performance of a field delineation by a qualified wetlands professional, applying the approved federal wetland delineation manual and applicable regional supplements in accordance with WAC 173-22-035.

(b) Where the applicant has provided a delineation of the wetland boundary, the Community Development Director shall verify the accuracy of, and may render adjustments to, the boundary delineation. In the event the applicant contests the adjusted boundary delineation, the Community Development Director shall, at the applicant's expense, obtain expert services to render a final delineation.

(c) When agreed to by the applicant, the Community Development Director may waive the requirement that the applicant provide the delineation of boundary and rely on staff delineation. The Community Development Director shall consult with qualified professional scientists and technical experts or other experts as needed to perform the delineation. The applicant will be charged for the costs incurred. Where the Community Development Director performs a wetland delineation at the request of the applicant, such delineation shall be considered a final determination.

20.93.820 Allowed Activities.

Except where regulated by other sections of this, Shoreline Master Program or any other Title or law, and provided they are conducted using best management practices, the following uses shall be allowed within wetlands and their buffers when the requirements of §20.93.830 (Wetlands—Requirements) and 20.93.840 (Wetlands—Mitigation) have been met, state and federal approvals have been granted when required, and mitigation adequate to alleviate any other impacts has been proposed:

Generally uses will be required to avoid and minimize impacts, and compensate for the impact that may reduce the functions of the wetland or its buffers:

(a) Those uses listed in §20.93.220 (General Provisions—Allowed Activities).

(b) In Class III and Class IV wetlands only, access to developable portions of legal lots where:

1. there is no other feasible method of accessing the property,
2. altering the terrain would not cause drainage impacts to neighboring properties, and
3. not more than 2,500 square feet of wetland is impacted, and mitigated.

(c) Permitted Uses in a Wetland Buffer—Regulated activities shall not be allowed in a buffer except for the following:

1. Activities having minimal adverse impacts on buffers and no adverse impacts on regulated wetlands. These may include low intensity, passive recreational activities such as low impact trails in the outer 25%, non-permanent wildlife watching blinds, short-term scientific or educational activities, and sports fishing;
2. With respect to category III and IV wetlands, stormwater management facilities having no reasonable alternative on-site location; or

3. With respect to category III and IV wetlands, development having no feasible alternative location when the following conditions have been met: Impacts are the minimum necessary; Buffer impacts are mitigated through buffer averaging.

(d) Those activities and uses conducted pursuant to the Washington State Forest Practices Act and its rules and regulations, WAC 222-12-030, where state law specifically exempts local authority, except those developments requiring local approval for Class 4 – General Forest Practice Permits (conversions) as defined in RCW 76.09 and WAC 222-12:

1. Conservation or preservation of soil, water, vegetation, fish, shellfish, and/or other wildlife that does not entail changing the structure or functions of the existing wetland.
2. The harvesting of wild crops in a manner that is not injurious to natural reproduction of such crops and provided the harvesting does not require tilling of soil, planting of crops, chemical applications, or alteration of the wetland by changing existing topography, water conditions, or water sources.

3. Drilling for utilities/utility corridors under a wetland, with entrance/exit portals located completely outside of the wetland buffer, provided that the drilling does not interrupt the ground water connection to the wetland or percolation of surface water down through the soil column. Specific studies by a hydrologist are necessary to determine whether the ground water connection to the wetland or percolation of surface water down through the soil column will be disturbed.

4. Enhancement of a wetland through the removal of non-native invasive plant species. Removal of invasive plant species shall be restricted to hand removal unless permits from the appropriate regulatory agencies have been obtained for approved biological or chemical treatments. All removed plant material shall be taken away from the site and appropriately disposed of. Plants that appear on the Washington State Noxious Weed Control Board list of noxious weeds must be handled and disposed of according to a noxious weed control plan appropriate to that species. Re-vegetation with appropriate native species at natural densities is allowed in conjunction with removal of invasive plant species.

5. Educational and scientific research activities.

6. Normal and routine maintenance and repair of any existing public or private facilities within an existing right-of-way, provided that the maintenance or repair does not expand the footprint of the facility or right-of-way and impacts are mitigated.

7. Stormwater management facilities. Stormwater management facilities are limited to stormwater dispersion outfalls and bioswales. They may be allowed within the outer twenty-five percent (25%) of 50-foot management zone, whichever is most protective, of Category II, III or IV wetlands buffer when the 50-foot management zone is in an already developed state including buildings, parking lots, lawn or ornamental landscaping stormwater management systems designed to blend into the natural landscape allowing full mature growth of native trees and shrubs, and provide the same or greater functional habitat that would occur in a naturally vegetated buffer. Specifically, this does not include buried vaults, ecology block or grass-lined ponds or swales (though ponds or swales planted with native vegetation may be allowed). Such systems are required to provide diffuse effluent point(s) to the immediate edge of the no-touch buffer to allow infiltration and polishing, provided that:

a. No other location is feasible; and

- b. The location of such facilities will not degrade the functions or values of the wetland; and
- c. Stormwater management facilities are not allowed in intact buffers of Category I wetlands.

8. Non-Conforming Uses. Repair and maintenance of non-conforming uses or structures, where legally established within the buffer, provided they do not increase the degree of nonconformity.

20.93.830 Requirements.

- (a) Buffers—ECA buffers shall be required for all regulated activities adjacent to regulated wetlands as provided in Table 20.93-4, below, unless modified per Subsection (b). Any wetland created, restored, or enhanced as compensation for approved wetland alterations shall also include the standard buffer required for the category of the created, restored, or enhanced wetland. All buffers shall be measured from the wetland boundary as determined pursuant to §20.93.810 (Wetlands—Determination of Boundary). The width of the wetland buffer zone shall be determined according to wetland category and the proposed land use. These buffers have been established to reflect the impact of land use intensity on wetland functions and values.
- (b) The standard buffer widths in Table 20.93-4 have been established in accordance with the best available science. They are based on the category of wetland and the habitat score as determined by a qualified wetland professional using the Washington state wetland rating system for Western Washington.
 - 1. The use of the standard buffer width requires the implementation of the measures in Table 20.93-5, where applicable, to minimize the impacts of the adjacent land uses.
 - 2. If an applicant chooses not to apply the mitigation measures in Table 20.93-5 or other sections of this document, then a 33% increase in the width of all buffers is required. For example, a 75-foot buffer with the mitigation measures would be a 100-foot buffer without them.
 - 3. The standard buffer widths assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer should either be planted to create the appropriate plant community or the buffer should be widened to ensure that adequate functions of the buffer are provided.
 - 4. Additional buffer widths are added to the standard buffer widths as indicated in Table 20.93 – 4.
- (c) The applicant shall dedicate to the City an exclusive Environmentally Critical Area easement for the protection of wetlands over the Environmentally Critical Area and a buffer consistent with the standards listed in Subsection (a).

Table 20.93-4 – Wetland Buffer Requirements for Western Washington

Wetland Category	Standard Buffer Width	Additional buffer width if wetland scores 21 – 25 habitat	Additional buffer width if wetland scores 26 – 29 habitat	Additional buffer width if wetland scores 30 – 36 habitat

		points	points	points
Category I: based on total score	75 ft	Add 30 ft	Add 90 ft	Add 150 ft
Category I: Bogs	190 ft	NA	NA	Add 35 ft
Category I: Natural Heritage Wetlands	190 ft	NA	NA	Add 35 ft
Category I: Forested	75 ft	Add 30 ft	Add 90 ft	Add 150 ft
Category II: Based on Score	75 ft	Add 30 ft	Add 90 ft	Add 150 ft
Category III: (all)	60 ft	Add 45 ft	Add 105 ft	NA
Category IV: (all)	40 ft	NA	NA	NA

Table 20.93-5. Examples of Required Measures to Minimize Impacts (This is not a complete list of measures.)

Examples of Disturbance	Activities and Uses that Cause Disturbances	Examples of Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> • Parking lots • Warehouses • Manufacturing • Residential • Parks 	<ul style="list-style-type: none"> • Direct lights away from critical areas and buffers • Day use only regulations preventing the need for lights • Timer on lights
Noise	<ul style="list-style-type: none"> • Manufacturing • Residential 	<ul style="list-style-type: none"> • Locate activity that generates noise away from wetlands • Seasonal limitations on hours of operation
Toxic runoff*	<ul style="list-style-type: none"> • Parking lots • Roads • Manufacturing • Residential areas • Application of agricultural pesticides • Landscaping 	<ul style="list-style-type: none"> • Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 ft of critical area or buffer • Apply integrated pest management
Stormwater runoff	<ul style="list-style-type: none"> • Parking lots • Roads • Manufacturing • Residential areas • Commercial • Landscaping 	<ul style="list-style-type: none"> • Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters the buffer
Change in water regime	<ul style="list-style-type: none"> • Impermeable surfaces • Lawns 	<ul style="list-style-type: none"> • Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces

	<ul style="list-style-type: none"> • Tilling • Forest and forest duff removal 	<ul style="list-style-type: none"> and new lawns • Retain minimum forest and forest duff
Pets and human disturbance	<ul style="list-style-type: none"> • Residential areas • Parks 	<ul style="list-style-type: none"> • Use privacy fencing; plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion; place wetland and its buffer in a separate tract
Dust	<ul style="list-style-type: none"> • Construction sites 	<ul style="list-style-type: none"> • Use best management practices to control dust
Disruption of corridors or connections	<ul style="list-style-type: none"> • Roads • Residential • Commercial • Manufacturing • Landscaping • Stormwater 	<ul style="list-style-type: none"> • Maintain connection to offsite areas that are undisturbed • Restore corridors or connections to offsite habitats by replanting
<p>* These examples are not necessarily adequate for minimizing toxic runoff if threatened or endangered species are present at the site.</p>		

20.93.840 Mitigation.

(a) In order to avoid significant environmental impacts, the applicant for a land use or development permit shall compensate for unavoidable wetland impacts, listed in order of preference and in accordance with section 4.2 of the Shoreline Master Plan. What is considered adequate mitigation will depend on the nature and magnitude of the potential impact, or specifically identified in the Shoreline Master Program as required mitigation.

1. On-Site Wetlands Restoration/ Improvement—Restoration or improvement in functional value of degraded on-site wetlands and/or their buffers at the ratio listed in Table 20.93-6 according to the wetland type.
2. On-Site Wetlands Creation—Creation of on-site wetlands and their buffers at the ratio listed in Table 20.93-6 according to the wetland type.
3. On-Site Wetlands Buffer Restoration—Restoration or improvement in functional value of degraded on-site wetland buffers at the ratio listed in Table 20.93-6 according to the wetland type.
4. Off-Site Wetlands Protection—Where on-site protection is not possible, dedicate an exclusive easement for the protection of equivalent (in ecological type and function) wetland and its buffer on an off-site wetland at the ratio listed in Table 20.93-6 according to the wetland type. The location of any off-site wetland mitigation area shall be located within the same watershed as the impact and as near to the site as possible, following this preferred order: (i) contiguous to the impacted wetland, (ii) within the same drainage basin where it would best provide the same function as the impacted wetland, and (iii) elsewhere within the City.

(b) All wetland restoration, creation and/or enhancement projects required pursuant to this Chapter either as a permit condition or as the result of an enforcement action shall follow a mitigation plan prepared in conformance to the requirements of §20.93.390 (Mitigation Plan Requirements).

(c) Location of mitigation. When compensatory measures are appropriate pursuant to the mitigation priority sequence above, preferential consideration shall be given to measures that replace the impacted functions directly and in the immediate vicinity of the impact. However, alternative compensatory mitigation within the watershed sub-basin that addresses limiting factors or identified critical needs for shoreline resource conservation based on watershed or comprehensive resource management plans applicable to the area of impact may be authorized. If there are no previously identified mitigation opportunities in the impacted sub-basin identified in local watershed or comprehensive plans the applicant will use a watershed approach in selecting mitigation sites utilizing *Selecting Wetland Mitigation Sites Using a Watershed Approach (Western Washington)* (Publication #09-06-32). Authorization of compensatory mitigation measures may require appropriate safeguards, terms, or conditions as necessary to ensure no net loss of ecological functions. (WAC 173-26-201(2)(e)(ii)(B))

(c) Mitigation ratios for the replacement of impacted wetlands shall be as listed in Table 20.93-6.

Table 20.93 - 6

Category and Type of Wetland	Creation or Re-establishment	Rehabilitation	Enhancement	Preservation
Category I: Bog, Natural Heritage site	Not considered possible	6:1	Case by case	10:1
Category I: Mature Forested	6:1	12:1	24:1	24:1
Category I: Based on functions	4:1	8:1	16:1	20:1
Category II	3:1	6:1	12:1	20:1
Category III	2:1	4:1	8:1	15:1
Category IV	1.5:1	3:1	6:1	10:1

20.93 850 Monitoring

1. For projects that include native vegetation, a detailed five-year or ten-year vegetation maintenance and monitoring program to include the following:

- (a) Goals and objectives of the shoreline stabilization plan;
- (b) Success criteria by which the implemented plan will be assessed;
- (c) A Ten (10) year maintenance and monitoring plan for wetland projects with trees and shrubs , consisting of site visits done in years 1, 2, 5, 7 and 10 by a qualified professional, with progress reports submitted to the Shoreline Administrator and all other agencies with jurisdiction following the site visits ; and,

a maintenance and monitoring plan for Compensatory mitigation projects which shall be monitored for a minimum of five years with monitoring plans submitted for 0, 1, 2, 3 and 5 years.

(d) A contingency plan in case of failure.

2. Monitoring of Fish and Wildlife populations may be required.

Part IX. Aquifer Recharge Areas

20.93.900 Purpose and Objectives.

(a) The purpose of this Part is to protect public aquifer recharge areas. Additionally, it is the intent of this Part to adopt development regulations, as required in RCW 36.70A.060, that preclude land uses or development that is incompatible with critical areas designated under RCW 36.70A.170.

(b) The objectives of this Part are to:

1. Protect human life and health;
2. Assure the long-term conservation of resources;
3. Protect groundwater; and,
4. Further the public interest in the conservation and wise use of lands.

20.93.910 Applicability.

(a) All development except those exempted in Subsection (b) is subject to the regulations of this Part.

(b) The following uses are exempt from this Part:

1. Uses legally existing on any parcel prior to these regulations' adoption.

20.93.920 Information Required Upon Application.

All land use permit applications for development subject to these regulations shall include the information specified in Table 20.93-6, Groundwater Protection Administration Guidance Chart.

20.93.930 Hydrogeologic Site Evaluations.

Hydrogeologic site evaluations shall address the following:

- (a) Soil texture, permeability, and contaminant attenuation properties;
- (b) Characteristics of the unsaturated top layer of soil, the vadose zone, and geologic material, including permeability and attenuation properties;
- (c) Depth to groundwater and/or impermeable soil layer;
- (d) Aquifer properties such as hydraulic conductivity and gradients.
- (e) Potential impacts to the aquifer or groundwater.

20.93.940 Best Management Practices (BMP) Plans.

Best Management Practices (BMP) Plans shall detail what actions or operations may harm the aquifer if not performed or managed properly and how such actions or operations shall be performed or managed so as to avoid impacts. Permit applications may be conditioned on on-going adherence to the BMP Plan.

20.93.950 Mitigation Plans

(a) If the evaluation identifies significant impacts to critical public aquifer storage recharge areas, the project applicant is required to document potential impacts and provide a discussion of alternatives by which such impacts could be avoided or prevented.

(b) The applicant shall provide a detailed mitigation plan for avoiding potential impacts. The City may require that the mitigation plan include preventative measures, monitoring, process control, and remediation, as appropriate. The mitigation plan must be approved by the City and be implemented as a condition of project approval.

20.93.960 Imposition of Conditions on Projects

Based on available information, including that provided by the applicant pursuant to the requirements of Sections 20.93.920 (Aquifer Recharge Areas—Information Required Upon Application), the permit-issuing authority shall impose conditions designed to prevent degradation of groundwater quality or quantity. Such conditions may include determining background water quality and quantity prior to development, determining groundwater levels, monitoring of those levels, mitigation plans including prevention, and development of groundwater quality or quantity management plans. All conditions on permits shall be based on known, available, and reasonable methods of prevention, control, and treatment.

Table 20.93-6: Groundwater Protection Administration Guidance Chart Project

Use Type	Information Required with Application
1. Underground Storage Tanks (USTs) as defined by Chapter 173-360 WAC	A Best Management Practices Plan is required, as is proof of compliance with Department of Ecology regulations and the license number of the installer. A mitigation plan may be required.
2. Commercial, industrial, institutional, or other facilities that store, use, handle, or produce hazardous substances or waste products (as defined by WAC 173-303-101)	A Best Management Practices Plan is required. A mitigation plan may be required.
3. On-site sewage disposal systems serving large developments, or any single use generating sufficient effluent over three thousand five hundred (3,500) gallons per day, require approval of their plans by the Department of Health under Chapter 246-272 WAC or the Department of Ecology under Chapter 173-240 WAC	Proof of compliance with Department of Ecology and/or Snohomish County Health District requirements. A mitigation plan may be required.
4. Petroleum pipelines	Both a Hydrologic Site Evaluation and a Best Management Practices Plan are required. A mitigation plan may be required.
5. Solid waste facilities	Both a Hydrologic Site Evaluation and a Best Management Practices Plan are required. A mitigation plan may be required.

6. Land application of sewage sludge from sewage treatment works which combine industrial waste and/or commercial waste with domestic waste or any sewage sludge application exceeding two (2) acres in size	Both a Hydrologic Site Evaluation and a Best Management Practices Plan are required. These studies shall determine the application rate. A mitigation plan may be required.
7. All other development.	Determination of whether the project lies within a public groundwater recharge area or whether any wells are located within 100 feet of the project. If either of these criteria is met, the applicant must show how all applicable regulations, including but not limited to those of the Department of Ecology and/or Snohomish County Health District, are met. A mitigation plan may be required.

Part X. Adoption of Plans

20.93.970 Shoreline Master Plan and Maps Adopted.

The City hereby adopts and incorporates by reference herein the “City of Arlington Shoreline Master Program”, September 2011 draft, prepared by the Watershed Company, as its Shoreline Master Plan, including the Maps reflecting Environment Designations contained in Appendix A thereto.


Section 2. Chapter 20.92 of the Arlington Municipal Code shall be and hereby is repealed.

Section 3. Severability. If any provision, section, or part of this ordinance shall be adjudged to be invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any section, provision or part thereof not adjudged invalid or unconstitutional.

Section 4. Effective Date. The title of this Ordinance, which summarizes the contents of this ordinance, shall be published in the official newspaper of the City. The Ordinance shall take effect and be in full force five (5) days after the date of publication.

PASSED BY the City Council and APPROVED by the Mayor this 5th day of December, 2011.


CITY OF ARLINGTON


Margaret Larson, Mayor

Attest:


Kristin Banfield, City Clerk

Approved as to form:


Steven J. Peiffe
City Attorney

CERTIFICATION OF ORDINANCE

I, Kristin Banfield, being the duly appointed and acting Clerk of the City of Arlington, Washington, a municipal corporation, do hereby certify that the following Ordinance #2011-029 was approved at the December 5, 2011 City Council meeting.


ORDINANCE #2011-029

“AN ORDINANCE OF THE CITY OF ARLINGTON, WASHINGTON, ADDING A NEW CHAPTER 20.93 OF THE ARLINGTON MUNICIPAL CODE RELATING TO ENVIRONMENTALLY CRITICAL AREAS, AND REPEALING CHAPTER 20.92”

A true and correct copy of the original ordinance is attached.

Dated this 6th day of December, 2011.




Kristin Banfield
City Clerk for the City of Arlington

APPENDIX C

Restoration Plan

FINAL

CITY OF ARLINGTON
GRANT No.G1000035

SHORELINE RESTORATION PLAN
**for the City of Arlington's Shoreline: South Fork and
Mainstem Stillaguamish River and Portage Creek**

Prepared for:



City of Arlington
238 North Olympic Avenue
Arlington, WA 28223

Prepared by:



750 Sixth Street South
Kirkland, WA 98033

p 425.822.5242
f 425.827.8136
watershedco.com

and



City of Arlington
238 North Olympic Avenue
Arlington, WA 28223

October 2011

**The Watershed Company
Reference Number:**

090105



This report was funded
in part through a grant
from the Washington
Department of Ecology

**The Watershed Company Project Manager:
Dan Nickel**

**City of Arlington Project Manager:
Bill Blake**

Cite this document as:

The Watershed Company. October 2011. Final Shoreline Restoration Plan for the City of
Arlington's Shoreline: South Fork and Mainstem Stillaguamish River and Portage Creek.
Prepared for the City of Arlington, Arlington, WA.

Table of Contents

<u>Section</u>		<u>Page</u>
1	Introduction	1
2	Shoreline Inventory Summary	3
2.1	Introduction	3
2.2	Shoreline Jurisdiction	3
2.3	Inventory and Analysis	4
2.3.1	Land Use and Physical Conditions	5
2.3.2	Biological Resources and Critical Areas	9
3	Restoration Goals and Objectives.....	10
4	Existing and Ongoing Projects and Programs	14
4.1	City of Arlington.....	14
4.1.1	Comprehensive Plan	14
4.1.2	Environmentally Critical Areas Regulations.....	16
4.1.3	Stormwater Projects and Programs	16
4.1.4	Capital Projects	17
4.2	Stillaguamish Watershed Council.....	18
4.3	Snohomish County.....	22
4.3.1	Stillaguamish River Comprehensive Flood Hazard Management Plan.....	22
4.3.2	Critical Areas Monitoring and Adaptive Management Program	23
4.4	Snohomish Conservation District	24
4.5	Washington State Department of Ecology	24
5	Involvement of Other Agencies and Entities	25
5.1	Puget Sound Partnership	25
6	Strategies to Achieve Local Restoration Goals.....	26
6.1	Capital Facilities Program	26
6.2	Development Opportunities.....	27
6.3	Development Incentives	27
6.4	Tax Relief / Fee System	27
6.5	Resource Directory	28
6.6	Volunteer Coordination.....	28
6.7	Regional Coordination.....	29
7	Proposed Implementation Targets and Monitoring Methods	29
7.1	Project Evaluation	29
7.2	Monitoring and Adaptive Management	30
7.3	Reporting	32
8	References.....	34
9	List of Acronyms and Abbreviations	35

List of Tables

Table 2-1. Summary of Proposed Shoreline Jurisdiction.....4
Table 2-2. Current Land Uses in the Stillaguamish River – City Reach.6
Table 2-3. Current Land Uses in the South Fork Stillaguamish River – UGA Reach.7
Table 2-4. Current Land Uses in the Portage Creek Reach.....8
Table 2-5. Zoning Designations by Shoreline Reach.8
Table 2-6. Impervious Surface and Vegetated Area by Shoreline Reach.8
Table 2-7. Extent of Wetlands by Shoreline Reach.9
Table 2-8. Stream Outfalls by Shoreline Reach.....10
Table 3-1. Restoration Goals and Objectives Addressing Ecological Functions in the City.....12
Table 4-1. Projects to Be Implemented with Environmental Restoration Components in or Impacting Shoreline Areas.17
Table 4-2. Relationship of Chinook Salmon Habitat Protection to Limiting Factors.19
Table 4-3. Existing and Future City Projects or Programs that Assist in the Implementation of the Chinook Plan.....21
Table 4-4. Recommended Actions in the Snohomish Surface Water Management Flood Hazard Management Plan that involve the City and May Achieve Restoration Objectives.23
Table 7-1. Implementation Schedule and Funding for Restoration Projects, Programs and Plans.....32

List of Figures

Figure 2-1. Shoreline Reaches.5

SHORELINE RESTORATION PLAN

CITY OF ARLINGTON'S SHORELINE: SOUTH FORK AND MAINSTEM STILLAGUAMISH RIVER AND PORTAGE CREEK

1 INTRODUCTION

The City of Arlington's (City's) Shoreline Master Program (SMP) applies to activities in the City's shoreline jurisdiction. Activities that have adverse affects on the ecological functions and values of the shoreline must be mitigated. By law, the proponent of an activity is required to return the subject shoreline to a condition equivalent to the baseline level at the time the activity takes place. It is understood that some uses and developments cannot always be mitigated fully, resulting in incremental and unavoidable degradation of the baseline condition. The subsequent challenge is to improve the shoreline over time in areas where the baseline condition is degraded, severely or marginally.

WAC Section 173-26-201(2)(f) of the Shoreline Master Program Guidelines (Guidelines)¹ says:

Master programs shall include goals and policies that provide for restoration of such impaired ecological functions. These master program provisions shall identify existing policies and programs that contribute to planned restoration goals and identify any additional policies and programs that local government will implement to achieve its goals. These master program elements regarding restoration should make real and meaningful use of established or funded nonregulatory policies and programs that contribute to restoration of ecological functions, and should appropriately consider the direct or indirect effects of other regulatory or nonregulatory programs under other local, state, and federal laws, as well as any restoration effects that may flow indirectly from shoreline development regulations and mitigation standards.

Degraded shorelines are not just a result of pre-SMP activities, but also of unregulated activities and exempt development. The Guidelines also require that "[l]ocal master programs shall include regulations ensuring that exempt development in the aggregate

¹ The Guidelines were prepared by the Washington Department of Ecology and codified as WAC 173-26, Part III. The Guidelines translate the broad policies of the Shoreline Management Act (RCW 90.58.020) into standards for regulation of shoreline uses. See <http://www.ecy.wa.gov/programs/sea/sma/guidelines/index.html> for more background.

will not cause a net loss of ecological functions of the shoreline.” While some actions within shoreline jurisdiction are exempt from a permit, the SMP should clearly state that those actions are not exempt from compliance with the Shoreline Management Act (SMA) or the local SMP. Because the shoreline environment is also affected by activities taking place outside of a specific local master program’s jurisdiction (e.g., outside of city limits, outside of the shoreline area within the city), assembly of out-of-jurisdiction actions, programs, and policies can be essential for understanding how the City fits into the larger watershed context. The latter is critical when establishing realistic goals and objectives for dynamic and highly inter-connected environments.

Restoration of shoreline areas, in relation to shoreline processes and functions, commonly refers to methods such as re-vegetation, removal of invasive species or toxic materials, and removal of bulkhead structures, piers, and docks. Consistent with the Washington State Department of Ecology’s (Ecology’s) definition, use of the word “restore,” or any variations, in this document is not intended to encompass actions that reestablish historic conditions. Instead, it encompasses a suite of strategies that can be approximately delineated into four categories:

- Creation (of a new resource)
- Restoration (of a converted or substantially degraded resource)
- Enhancement (of an existing degraded resource)
- Protection (of an existing high-quality resource)

As directed by the Guidelines, the following discussions provide a summary of baseline shoreline conditions, list restoration goals and objectives, and discuss existing or potential programs and projects that positively impact the shoreline environment. In total, implementation of the SMP (with mitigation of project-related impacts) in combination with this Restoration Plan (for restoration of lost ecological functions that occurred prior to a specific project) should result in a net improvement in the City’s shoreline environment in the long term.

In addition to meeting the requirements of the Guidelines, this Restoration Plan is also intended to support the City’s or other non-governmental organizations’ applications for grant funding, and to provide the interested public with contact information for the various entities working within the City to enhance the environment.

2 SHORELINE INVENTORY SUMMARY

2.1 Introduction

The original SMP for the City was approved in 1974 and has not had a major update in over 10 years. The current SMP process represents an effort to update to the City's existing SMP. Much has changed along the City's shorelines since the existing SMP was adopted. The existing SMP consists of the goals and policies in the city's Comprehensive Plan and provisions in the Arlington Municipal Code.

In January 2011 the City completed a comprehensive inventory and analysis of its shorelines as an element of its SMP update. The purpose of the shoreline inventory and analysis was to gain a greater understanding of the existing condition of the City's shoreline environment to ensure the updated SMP policies and regulations are well-suited in protecting ecological processes and functions. The document describes existing physical and biological conditions in the shoreline zones within City limits and includes recommendations for restoration of ecological functions where they are degraded. The inventory and analysis, titled *Shoreline Analysis Report for the City of Arlington's Shoreline: South Fork and Mainstem Stillaguamish River and Portage Creek* (TWC 2011), is summarized below.

2.2 Shoreline Jurisdiction

As defined by the SMA, shorelines include certain waters of the state plus their associated "shorelands." At a minimum, the waterbodies designated as shorelines of the state are streams whose mean annual flow is 20 cubic feet per second (cfs) or greater. Shorelands are defined as:

"those lands extending landward for 200 feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward 200 feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of this chapter...Any county or city may determine that portion of a one-hundred-year-floodplain to be included in its master program as long as such portion includes, as a minimum, the floodway and the adjacent land extending landward two hundred feet therefrom... Any city or county may also include in its master program land necessary for buffers for critical areas (RCW 90.58.030)"

The entirety of the South Fork and mainstem Stillaguamish River within City limits and the urban growth area (UGA) is a regulated Shoreline and is considered a Shoreline of Statewide Significance ($\geq 1,000$ cubic feet per second). Additionally, Portage Creek is also considered a shoreline stream. Associated wetlands, floodway, and contiguous floodplains are also considered within shoreline jurisdiction.

Note that the City’s existing shoreline management area includes only the shorelines of the South Fork and mainstem Stillaguamish River. This shoreline management area has been adjusted to include Portage Creek (subject to City Council and Ecology approval) concurrent with this SMP update. A detailed discussion of the entire jurisdiction assessment and determination process can be reviewed in full in the *Shoreline Analysis Report for City of Arlington’s Shoreline – Appendix C (TWC 2011)*.

2.3 Inventory and Analysis

The shoreline inventory and analysis includes all land within the City’s proposed shoreline jurisdiction (see the *Shoreline Analysis Report for City of Arlington’s Shoreline – Appendix C (TWC 2011)*). The total area subject to the City’s updated SMP, not including aquatic area, is approximately 198.43 acres (0.31 square miles), and encompasses approximately 9,808 linear feet of shoreline.

In order to break down the shoreline into manageable units and to help evaluate differences between discrete shoreline areas, the City’s shorelines have been divided into assessment units based on biological character, dominant land use, and location within City limits or the UGA, as follows:

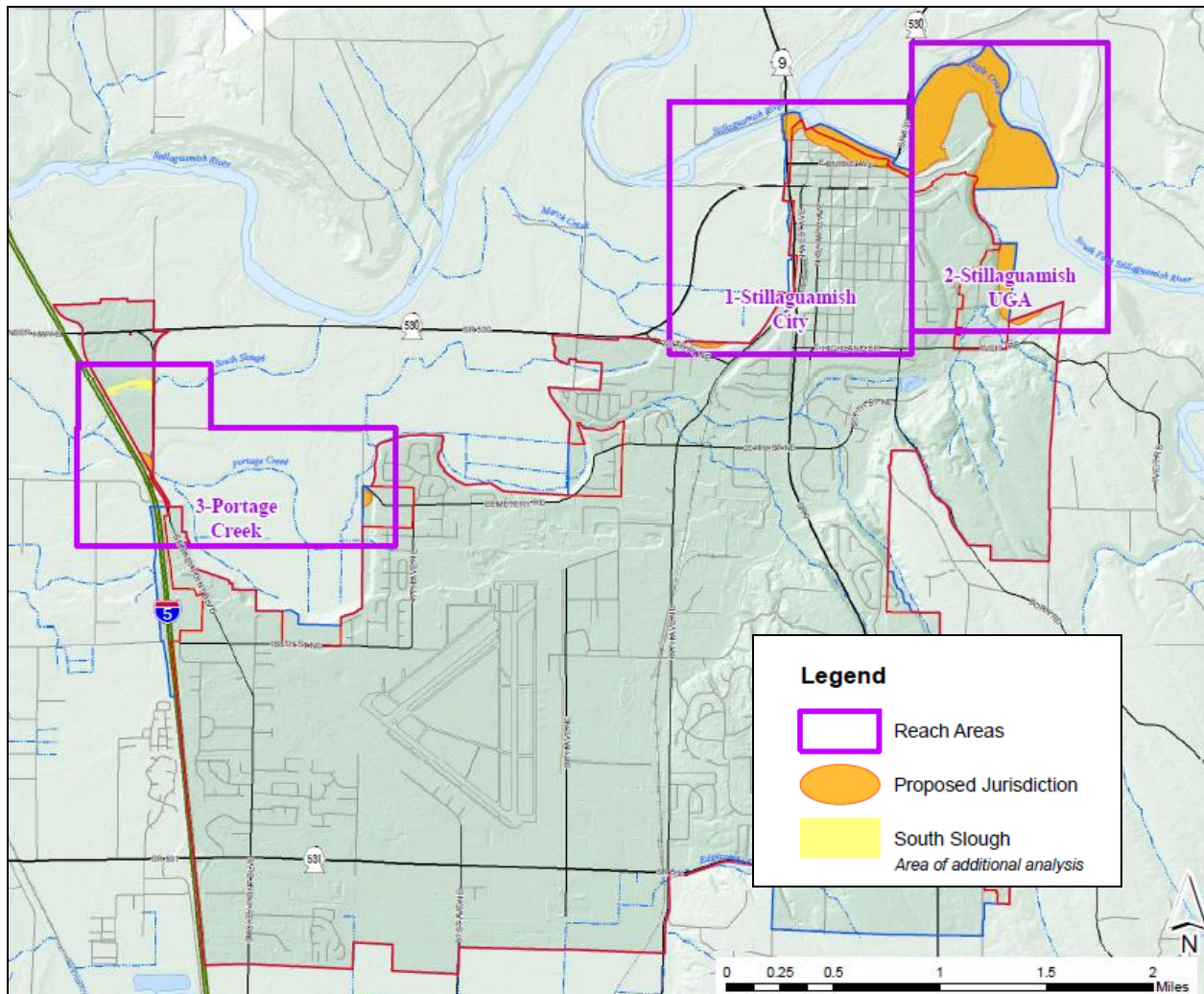
- Stillaguamish River – City
- South Fork Stillaguamish River – UGA
- Portage Creek

Table 2-1, below, shows the breakdown of jurisdictional dimensions for each shoreline reach. Figure 2-1, below, depicts the shoreline reaches.

Table 2-1. Summary of Proposed Shoreline Jurisdiction.

Shoreline Reach	Total Jurisdictional Area (acres)	Total Jurisdictional Area (square miles)	Total Jurisdictional Area (linear feet)
South Fork and mainstem Stilliguamish (City)	30.25	0.05	2,885
Mainstem Stilliguamish (UGA)	159.78	0.25	6,849
Portage Creek	8.40	0.01	74
Total	198.43	0.31	9,808

Figure 2-1. Shoreline Reaches.



2.3.1 Land Use and Physical Conditions

The City of Arlington is located in Snohomish County in the Puget Sound Region, and contains freshwater shorelines associated with Washington State’s Water Resource Inventory Area (WRIA) 5 - Stillaguamish. The Stillaguamish River Basin includes more than 4,618 miles of streams and rivers (Stillaguamish Technical Advisory Group (STAG) 2000) and drains an area of 684 square miles, making it the fifth largest basin draining to Puget Sound. It extends from the Cascade Mountains along the eastern boundary to Port Susan (Puget Sound) near Stanwood in the west. Elevations within the watershed range from sea level at Stanwood to 6,854 feet at the summit of Three Fingers. Unlike most eastside Puget Sound river basins, the Stillaguamish Basin does not extend all the way to the Cascade Crest, but is rather bordered to the east and surrounded by two other Puget Sound basins, the Snohomish and Skagit.

In the Stillaguamish River – City reach, land use was historically connected to timber-related industries. Currently, 51% of this reach is zoned Parks/Semi-Public (P/SP). The P/SP district is intended to accommodate public and semi-public uses, such as schools, government services and facilities, public utilities, community facilities, parks, etcetera, on publicly owned land. Forty-one percent of this reach is zoned Old Town Business District 3 (OTBD-3). The OTBD zones are designed to accommodate a mix of a wide variety of commercial activities and high density residential uses in a pedestrian-oriented environment. Seven percent of the reach is zoned Low to Moderate Density Residential (RLMD). RLMD-zoned areas are designed primarily to accommodate detached single-family residential development and recreational, quasi-public, and public uses that customarily serve residential development in areas served by public sewer and water facilities. Some types of two-family residences are allowed in this district on larger lots. 1% of this reach is zoned High Density Residential (RHD). RHD-zones areas are designed primarily to accommodate higher density multi-family developments and recreational, quasi-public, and public uses that customarily serve residential development in areas served by public sewer and water facilities. Only 2 or 3 small lots in this reach remain undeveloped. While the return of timber-related industry is unlikely, a canoe or kayak facility is a potential future use. The potential for future subdivisions of over four lots is very low. However, there are two lots where an old farm house and a trailer park are currently located, which may be converted into a commercial business providing some public access to the shoreline. Current land use in this reach is summarized in Table 2-2 below. Haller Park and Twin Rivers Park (in Snohomish County, across the river from the City) currently provide shoreline public access to the Stillaguamish River. Haller Park is due for upgrades to improve public access, including repair of the existing boat launch.

Table 2-2. Current Land Uses in the Stillaguamish River – City Reach.

Land Uses	Approximate Number of Parcels
Executive, Legislative & Judicial Functions	1
Four Family Residence (Four Plex)	1
Manufactured Home (Owned Site)	1
Mobile Home Park 1 – 20 Units	1
Parks – General Recreation	1
Religious Activities (Churches, Synagogues, etc.)	1
Rivers, Streams, or Creeks	4
Single Family Residence Condominium	4
Single Family Residence – Detached	16
Three Single Family Residences	1
Trails (Centennial, et al)	1
Two Family Residence (Duplex)	2
Undeveloped (Vacant) Land	10 ¹

¹ Not all parcels are developable lots due to site constraints.

When the *Shoreline Analysis Report for the City of Arlington’s Shoreline: South Fork and Mainstem Stillaguamish River and Portage Creek* (TWC 2011) was prepared, 96% of the South Fork Stillaguamish River – UGA reach was zoned Low to Moderate Density Residential (RLMD). However, the majority of this area, including the Country Charm Recreation and Conservation Area (County Charm), has had the zoning changed from RLMD to Public/Semi-Public (P/SP). Approximately two percent of this reach is currently zoned High Density Residential (RHD). However, approximately 15 acres of upland that was not purchased by the City for the County Charm Recreation and Conservation area has been pre-zoned RHD. When the rezoning process occurs, the City will consider an Urban Horticulture zoning, which may provide incubator business opportunities associated with enhanced public access. Approximately one percent of the reach is zoned Suburban Residential (SR), which is designed primarily to accommodate detached single-family residential development and recreational, quasi-public, and public uses that customarily serve residential development in areas served by public sewer and water facilities. Some types of two-family residences are allowed in this district on larger lots. Approximately one percent of the reach is zoned Moderate Density Residential (RMD), which is designed primarily to accommodate detached or attached single-family residential uses at medium densities and recreational, quasi-public, and public uses that customarily serve residential development in areas served by public sewer and water facilities. Some types of two-family residences are allowed in this district on larger lots. Current land use in this reach is summarized in Table 2-3 below. Country Charm will provide shoreline public access to the Stillaguamish River in the future.

Table 2-3. Current Land Uses in the South Fork Stillaguamish River – UGA Reach.

Land Use	Approximate Number of Parcels
Nursery, Primary & Secondary School	1
Open Space Agriculture RCW 84.34	1
Single Family Residence – Detached	4
Undeveloped (Vacant) Land	6

Seventy-nine percent of the Portage Creek reach is zoned Highway Commercial (HC). The HC zone is designed to accommodate the widest range of commercial activities. Uses allowed here include those allowed in other commercial districts, but also those that require highway access or that should be separated from residential uses. Twenty-one percent of this reach is zoned Low to Moderate Density Residential (RLMD). Land in this reach is currently used for private farm operations (including on the single vacant lot). Possible future uses for the creek buffer in this area include public viewing, stormwater management, and increased landscaping. Current land use in this reach is

summarized in Table 2-4 below. Portage Creek does not currently have public access or recreation sites within the City’s shoreline jurisdiction, though some viewing opportunities are available from the adjacent roadway.

Table 2-4. Current Land Uses in the Portage Creek Reach.

Land Use	Approximate Number of Parcels
Open Space Agriculture RCW 84.34	1
Undeveloped (Vacant) Land	1

Table 2-5 provides a breakdown by reach of zoning designations. Summary details for impervious surface and vegetative cover are shown in Table 2-6.

Table 2-5. Zoning Designations by Shoreline Reach.

Shoreline Reach	Zoning									
	Type ¹	%	Type	%	Type	%	Type	%	Type	%
Stillaguamish River – City	P/SP	51	OTBD-3	41	RLMD	7	RHD	1		
South Fork Stillaguamish River – UGA	RLMD	±8 ²	RHD	2	SR	1	RMD	<1	P/SP	±88 ³
Portage Creek	HC	79	RLMD	21						

¹ P/SP = Public/Semi-Public, OTBD = Old Town Business District, RLMD = Low/Moderate Density Residential, RHD = High Density Residential, SR = Suburban Residential, RMD = Moderate Density Residential, HC = Highway Commercial

² Percentage approximate. A rezoning since the *Shoreline Analysis Report for City of Arlington’s Shoreline* was prepared has yielded the 96% figure presented in that report obsolete.

³ Percentage approximate. A rezoning since the *Shoreline Analysis Report for City of Arlington’s Shoreline* was prepared has yielded the 1% figure presented in that report obsolete.

Table 2-6. Impervious Surface and Vegetated Area by Shoreline Reach.

Shoreline Reach	Impervious Surfaces (acres)	Impervious Surfaces (%)	Vegetation (acres)	Vegetation (%)
Stillaguamish River – City	8.47	28	2	6.6
South Fork Stillaguamish River – UGA	Approx. 1	<1	94	59
Portage Creek	0.50	6	2	24
Total	9.97	5	98	49

No reservoirs occur along either fork of the Stillaguamish River or the mainstem, and flows in the basin are essentially unregulated. While diking of the lower mainstem of the river is prevalent throughout the Stillaguamish Flood Control District, entirely west of Interstate 5, no diking is known to occur within the City’s shoreline jurisdiction. Some diking does occur in unincorporated Snohomish County along the south bank of the mainstem just downstream (west) of the City (e.g. the Dike Road/Johnson levee).

2.3.2 Biological Resources and Critical Areas

The City’s critical areas regulations include frequently flooded areas, aquifer recharge areas, geologically hazardous areas (areas susceptible to erosion, landslides, seismic events, liquification, and other geologic events), wetlands, fish and wildlife conservation areas, and streams, creeks, lakes, and other surface water. The inventory of critical areas was based on a wide range of information sources, including City GIS, critical area inventories, Washington Department of Fish and Wildlife (WDFW) databases, and other relevant maps and literature obtained from the Washington Department of Natural Resources, Ecology, National Marine Fisheries Service, and the US Fish and Wildlife Service.

The northernmost end of the City is located on the South Fork and mainstem Stillaguamish River, and Portage Creek runs through a portion of the City in the west section. Shoreline jurisdiction includes these areas, as well as associated wetlands totaling 2.01 acres along the South Fork and mainstem Stillaguamish in the City, 102.24 acres along the South Fork Stillaguamish within the UGA, and 1.77 acres along Portage Creek (Table 2-7).

Table 2-7. Extent of Wetlands by Shoreline Reach.

Shoreline Reach	Wetland Area (acres) ¹	Wetland Area as Percent of Shoreline
Stillaguamish River – City	2.01	7.6
South Fork Stillaguamish River – UGA	102.24	64.0
Portage Creek	1.77	21.1
Total	106.02	53.5

¹Wetland areas are based on GIS data and should be regarded as approximate.

Geologically hazardous areas within shoreline jurisdiction mapped by the City’s GIS include ground shake, lahars, liquification susceptibility, and landslides. Additionally, the Federal Emergency Management Agency identifies floodplains and floodways along the South Fork and mainstem Stillaguamish, and floodplain along Portage Creek.

WDFW mapping of Priority Habitat and Species indicates the presence of Fish and Wildlife Habitat Conservation Areas within and adjacent to the shoreline zone. These include winter eagle concentrations, swan winter feeding, riparian and wetland areas,

and bull trout, Chinook salmon, chum salmon, Coho salmon, cutthroat trout, pink salmon, and steelhead.

Stream outfalls are shown in Table 2-8, below.

Table 2-8. Stream Outfalls by Shoreline Reach.

Shoreline Reach	Stream Outfalls
Stillaguamish River – City	0
South Fork Stillaguamish River – UGA	1
Portage Creek	Not available
Total	1

3 RESTORATION GOALS AND OBJECTIVES

Goals for restoring the City’s shoreline are derived from analysis of watershed function, water quality, salmon recovery, habitat and other ecological studies. General goals are as follows:

- Goal 1** Where possible, allow natural ecosystem processes to occur.
- Goal 2** Where possible, restore the elements of naturally occurring landscape conditions that can mature over time.
- Goal 3** Involve landowners and volunteer groups to assist with the restoration and monitoring of shoreline conditions.
- Goal 4** Reduce the potential for pollutants to enter the Stillaguamish River and Portage Creek.

These goals provide direction and guidance for the plan’s objectives. Objectives refer to specific actions, ideally measurable, that can be taken to achieve the stated goals. For example, to meet the goal of improving water quality, an objective would be to remove creosote pilings. By translating the restoration goals into objectives, the objectives for this Restoration Plan are:

- Objective 1** Prevent the need for further armoring or diking along shoreline areas by not allowing activities that would require additional flood protection.
- Objective 2** Where possible, remove armoring to allow natural processes to occur.

- Objective 3** Protect riparian forests from further degradation so they may provide large woody debris (LWD) recruitment in the future.
- Objective 4** Do not remove LWD from shoreline areas so it can perform natural stabilization and habitat functions.
- Objective 5** Restore native vegetation where landscape is dominated by invasive species that do not allow for natural recruitment of LWD.
- Objective 6** Restore native vegetation in residential riparian areas when uses change from residential to commercial or other uses.
- Objective 7** Restore wetlands in areas where soils indicate they historically occurred.
- Objective 8** Restore small streams and side channel morphology.
- Objective 9** Restore LWD to areas within and along shorelines to expedite the return of functions needed by wildlife.
- Objective 10** Reduce the potential for outside influences such as light and noise to interfere with breeding and migration patterns.
- Objective 11** Maintain a list of restoration opportunities and invite volunteers to participate in scheduled events.
- Objective 12** Implement a landowner education program that provides private landowners along the shoreline best management practices (BMPs) specific to their location.
- Objective 13** Seek out long-term volunteers to act as adopt-a-park stewards for ongoing education, maintenance, and protection activities.
- Objective 14** Require and assist with restoration of riparian buffer functions, including the retention of forest duff for the capture and treatment of pollutants.
- Objective 15** Require that any new or re-development provide stormwater treatment as required to prevent introduction of pollutants to the Stillaguamish River or Portage Creek.
- Objective 16** Provide sufficient restroom facilities at all public or private shoreline recreation areas.
- Objective 17** Provide sufficient garbage and recycling facilities at all public and private shoreline recreation areas.

Table 3-1. Restoration Goals and Objectives Addressing Ecological Functions in the City.

Restoration goal	Objective(s)	Ecological function(s) addressed	Potential metrics
Where possible, allow natural ecosystem processes to occur.	#1 Prevent further armoring or diking	<ul style="list-style-type: none"> ▪ Maintain flood storage ▪ Provide flood refuge for fish ▪ Provide stream bank riparian habitat conditions ▪ Allow channel migration when practical 	<ul style="list-style-type: none"> ▪ Net flood storage following development ▪ Available side channel habitat ▪ Total forested riparian area
	#2 Remove armoring	<ul style="list-style-type: none"> ▪ Allow channel migration when practical ▪ Provide stream bank riparian habitat condition 	<ul style="list-style-type: none"> ▪ Available side channel habitat ▪ Total forested riparian area
	#3 Protect riparian forests from further degradation	<ul style="list-style-type: none"> ▪ Provide LWD recruitment for fish habitat ▪ Provide natural bank stabilization ▪ Reduced overland flow of stormwater ▪ Wildlife habitat ▪ Aesthetics 	<ul style="list-style-type: none"> ▪ LWD counts along stream bank ▪ Eroding banks/landslides ▪ Riparian survey of herb, shrub, and tree cover (spherical densitometer) ▪ Wildlife use survey¹ ▪ Impervious surface monitoring
	#4 Do not remove LWD from shoreline areas	<ul style="list-style-type: none"> ▪ Provide LWD recruitment for fish habitat ▪ Provide natural bank stabilization ▪ Wildlife habitat 	<ul style="list-style-type: none"> ▪ LWD counts along stream bank ▪ LWD counts in riparian buffer ▪ Wildlife use survey¹
Where possible, restore the elements of naturally occurring landscape conditions that can mature over time.	#5 Restore native vegetation where invasive species do not allow recruitment	<ul style="list-style-type: none"> ▪ LWD recruitment ▪ Stream bank stabilization ▪ Wildlife habitat ▪ Improved water quality 	<ul style="list-style-type: none"> ▪ Riparian survey ▪ Eroding banks ▪ Wildlife use survey¹ ▪ Stream temperature
	#6 Restore native vegetation in riparian areas when uses change from residential to commercial or other uses	<ul style="list-style-type: none"> ▪ LWD recruitment ▪ Stream bank stabilization ▪ Wildlife habitat ▪ Improved water quality 	<ul style="list-style-type: none"> ▪ Riparian survey ▪ Eroding banks ▪ Wildlife use survey¹ ▪ Stream temperature

Restoration goal	Objective(s)	Ecological function(s) addressed	Potential metrics
	#7 Restore wetlands where soils indicate they historically occurred	<ul style="list-style-type: none"> ▪ Water quality treatment ▪ Water quantity storage ▪ Fish habitat ▪ Wildlife habitat ▪ Amphibian habitat 	<ul style="list-style-type: none"> ▪ Water quality sampling ▪ Area of additional water storage created ▪ Fish use monitoring ▪ Wildlife use survey¹ ▪ Amphibian pitfall trap survey
	#8 Restore small stream and side channel morphology	<ul style="list-style-type: none"> ▪ Fish flood refugia ▪ Fish migration, rearing, and spawning ▪ Sediment management ▪ Reduced flow velocities 	<ul style="list-style-type: none"> ▪ Fish use monitoring ▪ Eroding banks ▪ Restoration project totals
	#9 Restore LWD within and along shoreline areas	<ul style="list-style-type: none"> ▪ LWD recruitment ▪ Stream bank stabilization ▪ Wildlife habitat 	<ul style="list-style-type: none"> ▪ LWD counts ▪ Restoration project totals ▪ Wildlife use surveys¹ ▪ Eroding banks
	#10 Reduce outside influences such as light and noise	<ul style="list-style-type: none"> ▪ Fish and wildlife migration ▪ Wildlife reproduction ▪ Fish and wildlife juvenile rearing 	<ul style="list-style-type: none"> ▪ Fish use monitoring ▪ Wildlife monitoring ▪ Wildlife surveys¹
Involve landowners and volunteer groups to assist with the restoration and monitoring of shoreline conditions	#11 Maintain a list of restoration opportunities	<ul style="list-style-type: none"> ▪ Riparian planting and maintenance ▪ Water quality sampling ▪ Monitoring from the potential metrics 	<ul style="list-style-type: none"> ▪ Restoration project totals ▪ Water quality data ▪ Other metrics as scheduled
	#11 Invite volunteers to participate in events	<ul style="list-style-type: none"> ▪ Set up annual calendar with seasonal actions for volunteers to accomplish ▪ Set up annual calendar with seasonal actions for landowners to accomplish 	<ul style="list-style-type: none"> ▪ Metric appropriate to seasonal calendar by site ▪ Metric appropriate to specific landowner project
	#12 Implement a landowner education program	<ul style="list-style-type: none"> ▪ Provide site specific technical information and BMPs 	<ul style="list-style-type: none"> ▪ Select several sites to monitor success of protection or maintenance activity
	#13 Seek out long-term volunteers to act as adopt-a-park stewards	<ul style="list-style-type: none"> ▪ Set up annual calendar with seasonal actions 	<ul style="list-style-type: none"> ▪ Metric appropriate to seasonal calendar by site
Reduce the potential for pollutants to enter the Stillaguamish River and	#14 Require and assist with restoration of riparian functions	<ul style="list-style-type: none"> ▪ Uptake of nutrients by riparian vegetation ▪ Capture and bioremediation of urban pollutants by forest duff ▪ Storage of stormwater by vegetation and duff 	<ul style="list-style-type: none"> ▪ Riparian survey ▪ Water quality data ▪ Stream bank erosion ▪ Impervious surface monitoring

Restoration goal	Objective(s)	Ecological function(s) addressed	Potential metrics
Portage Creek.	#15 Require that new or re-development provide stormwater treatment	<ul style="list-style-type: none"> ▪ Water storage ▪ Sediment storage ▪ Toxic compound removal ▪ Nutrient removal 	<ul style="list-style-type: none"> ▪ Water quality data ▪ Impervious surface monitoring
	#16 Provide sufficient restroom facilities	<ul style="list-style-type: none"> ▪ Fecal coliform ▪ Endocrine disrupters 	<ul style="list-style-type: none"> ▪ Water quality data ▪ Soil sampling
	#17 Provide sufficient garbage and recycling facilities	<ul style="list-style-type: none"> ▪ Plastics in food chain ▪ Acute injury to people and wildlife ▪ Fecal coliform ▪ Nutrients ▪ Invasive species ▪ Toxic compounds 	<ul style="list-style-type: none"> ▪ Garbage collection totals and frequency ▪ Riparian surveys ▪ Soil sampling

[†] Wildlife surveys may include avian, mammal, insect, fish and amphibians.

4 EXISTING AND ONGOING PROJECTS AND PROGRAMS

The following series of existing and ongoing projects and programs includes those related to a variety of entities, including the City, Snohomish County, and other organizations that are active in and around the Arlington area.

4.1 City of Arlington

Several City projects and programs contribute to shoreline restoration efforts. These projects and programs include:

- Comprehensive plan
- Environmentally critical areas regulations
- Stormwater projects and programs
- Capital projects

4.1.1 Comprehensive Plan

The City of Arlington Comprehensive Plan contains several provisions applicable to shorelines. Key goals and policies are included below (City of Arlington 2005).

From Overall Goals and Policies:

- GO-2 Provide effective stewardship of the environment, protect environmentally sensitive areas and the natural wildlife that utilizes those areas, and conserve land, air, water, and energy resources for current and future generations.

From Land Use Goals and Policies, Resource Protection:

- GL-19 To safeguard community environmental conditions and resources the City shall encourage the effective stewardship of the environment and protect critical areas and conserve land, air, water and energy resources.
- PL-19.5 Use local resources whenever possible to encourage local involvement in community actions.
- PL-19.7 Protect and enhance the natural environment while planning for growth.
- PL-19.8 Maintain or restore aquatic ecosystems and associated habitats and aquifers through the development and implementation of a comprehensive protection program.
- PL-19.9 Protect and maintain elements of the environment including clean water, natural vegetation and habitat corridors through adopted development regulations and a variety of educational, voluntary, and incentive programs.

From Parks and Recreation Goals and Policies:

- GP-1 Maintain and support existing and future recreational and cultural activities.
- PP-1.10 Volunteerism is a significant source of energy and ideas. The City must continue to tap and improve existing opportunities to involve the community in its own programs. The City should formalize a volunteer program, which could include programs such as "adopt a park" and "adopt a trail."
- PP-1.11 Each community park should have restroom facilities.
- GP-5 Preserve and enhance open space, natural, and cultural resources.
- PP-5.3 Plan, locate and manage park and recreation facilities so that they enhance wildlife habitat, minimize erosional impacts, and complement natural site features.
- PP-5.9 Certain open space lands should be managed as native growth areas and kept in a natural state to maintain existing habitat value. In the case of degraded or impacted lands, these areas may be enhanced to provide a higher value.

- GP-7 Develop park and trail design and development standards.
- PP-7.4 Develop standards for delineating usable private and public property from critical areas and their buffers.
- GP-8 Remain a Tree City.
- PP-8.2 Consider implementing a voluntary neighborhood tree planting program.

4.1.2 Environmentally Critical Areas Regulations

The City's environmentally critical areas regulations are found in Arlington Municipal Code, Chapter 20.88. These regulations are based on best available science, and provide protection to environmentally critical areas in the City outside of shoreline jurisdiction, including streams, lakes, wetlands, frequently flooded areas, geologically hazardous areas, and fish and wildlife conservation areas. Management of the City's critical areas using these regulations should help ensure that ecological functions and values are not degraded and impacts to critical areas outside of shoreline jurisdiction are mitigated. These environmentally critical areas regulations are important tools that will help the City meet its restoration goals.

4.1.3 Stormwater Projects and Programs

The Stormwater Comprehensive Plan presents the current conditions of the stormwater infrastructure in the City and UGA, identifies issues and challenges facing stormwater utility management (infrastructure, operations, regulations, compatibility with landscape processes), and presents capital improvement project options for stormwater management (City of Arlington 2010).

The City Natural Resources Department included resource protection projects in the stormwater comprehensive planning process. Although not all resource projects made the final funding list, future funding possibilities will continue to be pursued.

The 2011 Stormwater Management Program addresses NPDES Phase II permit requirements. The NPDES permit requires the City to develop and implement a Stormwater Management Program that addresses permit conditions grouped according to the following components:

- Public Education and Outreach
- Public Involvement
- Illicit Discharge Detection and Elimination
- Runoff Control for New Development, Redevelopment and Construction Sites
- Pollution Prevention for Municipal Operations and Maintenance

- Total Maximum Daily Loads (TMDLs), also known as water clean-up plans (City of Arlington 2011)

Additionally, the City has a stormwater utility that provides commercial property owners the opportunity to request fee reductions based on the stormwater treatment and retention their system provides. If a business installs a stormwater system that infiltrates 100% of the stormwater flows 100% of the time, property owners can achieve up to a 50% reduction in stormwater fees.

In order to assess the appropriate fee a business is charged, the City tracks the total impervious area of commercial properties. The City can utilize this information to assess the net loss or gain of impervious area within shoreline areas with commercial properties, particularly in the Historic Shoreline Business District environment designation.

4.1.4 Capital Projects

Listed below in Table 4-1 are capital projects that are planned for implementation by the City. The projects can be grouped as follows:

- Sanitary Sewer/Reclaimed (R)
- Water (W)
- Stormwater (S).

Table 4-1. Projects to be Implemented with Environmental Restoration Components in or Impacting Shoreline Areas.

Project/Location	Environmental component(s)	Implementation status
S2 – Stillaguamish City	Stormwater trunk line improvements	Future
S3 – Stillaguamish City	Stormwater Outfall repair	Future
S4 – Stillaguamish City (future)	Old Town stormwater wetland completion	In-process
S7 – Stillaguamish City	Centennial trail storm re-direction	Future
S8 – Stillaguamish City	Haller park outfall improvements	Future
S9 – Stillaguamish City	Haller park bacterial control	Future
S20 – Portage Creek	Portage Creek WQ Investigation	Future
S20 – Portage Creek	Lower Portage Flood Mitigation	Future
S21 – Portage Creek	Lower Portage Wetland Restoration	Future
S22 – Portage Creek	Lower Portage Wetland Restoration	Future
S47 – Stillaguamish UGA	Graafstra Riparian Area	In-process
S54a – Stillaguamish UGA	Eagle Wetland #SH0888	In-process
S54b – Stillaguamish UGA	Eagle Clay Cliff Ponds #SH0860	Future
R EX7 – WWTP→WWRF Upgrade Arlington City	Improve the effluent from Sanitary sewer system being released to the Stillaguamish River	Complete

Project/Location	Environmental component(s)	Implementation status
W WM2 – Portage Creek	Water main improvement 204 th with creek crossing	Future
WM3 – Stillaguamish City	Source Water protection program	In-process
WF2 - Stillaguamish City	Utility parks building at Haller Park	In-process
WF5 - Stillaguamish City	Haller well field improvements	Future

The City’s Natural Resources Department developed a capital plan for restoration of stream and wetland areas in response to Endangered Species Act (ESA) concerns in 2000. Although the plan was never adopted, it has been utilized to prioritize and implement restoration projects in some areas of the shoreline. The Natural Resources Department also developed the ESA “Framework to Recovery.” While not yet adopted by the City Council, this document was used in the development of the Stormwater Management Plan.

4.2 Stillaguamish Watershed Council

The mission of the Stillaguamish Watershed Council (SWC) is to “maintain a healthy, functioning Stillaguamish Watershed by providing a local forum in which agencies, organizations, communities, and the public can engage in a collaborative watershed based process of decision making and coordination.” WRIA 5 participation is accomplished through the SWC.

The SWC is a non-regulatory, grassroots group currently with twenty-six members (the SWC may grow to include more stakeholders). The SWC includes the Stillaguamish Technical Advisory Group (STAG), which develops technical recommendations for salmon conservation.

The City of Arlington Natural Resources Manager has been Chair or Co-Chair of the SWC since the year 2000. Additionally, the City plays a major role in representing the Stillaguamish Watershed at the Puget Sound Salmon Recovery Council, and as the alternate representative to the Ecosystems Board that guides the Puget Sound Partnership. The City also participates in the STAG.

The Stillaguamish Implementation Review Committee (SIRC), the former name of the SWC, prepared the Stillaguamish Watershed Chinook Salmon Recovery Plan (Chinook Plan) in 2005. The purpose of the document is to provide guidance to local stakeholders in a collaborative effort to restore and protect Chinook salmon populations in the Stillaguamish River watershed (WRIA 5).

The Chinook Plan identifies six habitat limiting factors for Chinook salmon population in the Stillaguamish Watershed: riparian, estuarine, large wood, floodplain, sediment, and hydrology. The limiting factors are not prioritized as they all have significant impacts on various life stages of Chinook. The plan indicates that the City has the

opportunity to improve four of the limiting factors, as shown in the top row of Table 4-2 below.

Table 4-2. Relationship of Chinook Salmon Habitat Protection to Limiting Factors.

Jurisdiction/ Agency	Riparian	Estuary	Large Woody Debris	Floodplain	Sediment	Hydrology
City of Arlington	✓			✓	✓	✓
City of Stanwood		✓		✓		
Snohomish County	✓	✓		✓		✓
Skagit County	✓			✓		
WA State Department of Ecology		✓		✓	✓	✓
WA Department of Fish and Wildlife		✓	✓			✓
WA Department of Natural Resources	✓		✓	✓	✓	✓
US Forest Service	✓		✓	✓	✓	✓

The plan provides the following general recommendation that applies to the City:

- All cities, counties, state and federal agencies, tribes, and other stakeholder organizations in the Stillaguamish Watershed should adopt policies and objectives to protect and restore salmon habitat and watershed processes. Specific actions supporting these policies and objectives may include:
 - Support low-density/low impact land uses in rural areas outside of urban growth areas;
 - Protect and restore appropriate riparian areas;
 - Maintain and restore natural streambank conditions;
 - Protect and restore natural watershed functions in the floodplain and channel migration zone;
 - Retain large woody debris in stream to support salmon habitat and restore natural watershed processes;
 - Eliminate existing fish passage barriers such as culverts and tide gates and prevent the creation of new barriers;

- Achieve no net loss of wetland functions and values, and restore degraded wetlands where possible;
- Avoid cumulative adverse impacts to streams, riparian corridors, and wetlands throughout the watershed; and
- Address salmon habitat protection in management plans for natural areas and open spaces (SIRC 2005).

There is also a three-year work plan listing potential projects, Habitat Work Schedule, and annual Salmon Recovery Funding Board (SRFB) processes that provide opportunities for Arlington to continue to add projects for consideration of funding.

Table 4-3 below lists existing and future City projects or programs that assist in the implementation of the Chinook Plan.

Table 4-3. Existing and Future City Projects or Programs that Assist in the Implementation of the Chinook Plan.

Project Type	Project/Program	Description	Status/Funding
Protection/Acquisition	Country Charm Recreation and Conservation Area	City purchased 150 acres of floodplain farm with assistance from the SRFB to pay for buffer area (39 acres).	Purchase complete, 30-year contract
Protection/Acquisition	Rasar Island	City accepted the dedication of Rasar Island adjacent to the Country Charm from Dan Rasar.	Gift
Water quality	Upgrade wastewater plant	City upgraded the sanitary sewer system to a more modern water reclamation facility with the installation of a membrane bioreactor to improve the condition of effluent being released.	Funded through rates and Public Trust Fund Loan
Water quality	Old Town stormwater wetland	Construction of a 9-acre naturalized stormwater wetland that will treat and desynchronize 270 acres of Old Town Arlington that was developed prior to stormwater management systems.	Funded through Ecology grants and stormwater fees
Floodplain/Wetlands	Stormwater Comprehensive Plan wetland projects	There are several wetland restoration projects that are identified in the Stormwater Comprehensive Plan that were identified in the 1997 Ecology characterization.	Ongoing with some complete, and others not yet funded
Floodplain/Wetlands	South Slough	South Slough has been in a degraded state since the construction of Highway 530 and Interstate 5. It was historically a functional side channel/wetland, and the desire is to restore a portion of historic function.	Public/Private partnership being developed
Riparian	Volunteer plantings in Arlington urban growth area	The City partners with Sound Salmon Solutions, Stillaguamish Tribe Banksavers, Snohomish County Big Trees project.	SRFB and Arlington General Fund
Chapter 3 of this document lists goals and objectives that will guide shoreline restoration activity. Goals 5, 6, 7, 8, 9, 11, 12 and 14 all call for specific restoration actions to occur that will address limiting factors found in the Chinook Plan.			

The SWC is also responsible for oversight of the Stillaguamish Capacity Fund used to support activities that contribute to the implementation of habitat protection and restoration capital projects consistent with the Chinook Plan. Funds are disseminated through a criteria-based process to a wide variety of uses which may include participating members as well as community members at-large.

4.3 Snohomish County

The City coordinates with Snohomish County on shoreline management through Washington State Growth Management Act planning and the Stillaguamish Watershed Council.

Additionally, the City co-manages Twin Rivers Park (which is on the right bank of the river across from the Historic Shoreline Business District environment designation) with Snohomish County Parks and Recreation.

The Portage Creek reach has restoration opportunities that would need to be coordinated with Snohomish County as the the immediate upstream and downstream reaches are in County jurisdiction.

4.3.1 *Stillaguamish River Comprehensive Flood Hazard Management Plan*

The Stillaguamish River Comprehensive Flood Hazard Management Plan was developed by the Snohomish County Surface Water Management Division with input from the public and an advisory committee comprised of agency staff and public officials and representatives. The City had a representative on the advisory committee.

The purpose of the plan was to “identify areas that may contribute to increased flood damages and determine actions that can be taken to reduce those damages while preserving the positive environmental effects of flooding.”

Plan goals include:

1. Save lives and reduce public exposure to risk;
2. Reduce or prevent damage to public and private property;
3. Reduce historic and prevent future adverse natural resource impacts of flood hazard management;
4. Reduce the costs associate with flood hazard management; and
5. To the maximum extent possible, allow and encourage natural floodplain processes.

Chapter 7 of the plan includes recommended actions to address hazards and hazard mitigation opportunities. Table 4-4 below lists recommended actions that involve the City and may achieve restoration goals (Snohomish County 2003).

Table 4-4. Recommended Actions in the Snohomish Surface Water Management Flood Hazard Management Plan that involves the City and may Achieve Restoration Objectives.

Location	Recommended Action (RA)	Description	Notes
Basin-wide	RA-1 Conduct a Flood Insurance Re-Study	Conduct a Flood Insurance Re-Study for the Stillaguamish River basin and pursue federal or state cost-sharing.	
Basin-wide	RA-13 Develop a Landslide Hazard Homeowner Education Program	Develop an education program that provides homeowners who live above or below geologically hazardous areas information on the risks of landslides and the benefits of retaining healthy vegetation on slopes.	
Basin-wide	RA-16 Participate in Habitat Restoration Projects that Provide Cumulative Flood Reduction Opportunities	Participate in future habitat restoration projects (developed post-plan adoption) that may provide the added benefit cumulative flood reduction opportunities in the basin.	
Mainstem	RA -31 Conduct and Avulsion Risk Assessment of the Dike Road Dike and Berm and Implement Findings.	Conduct a study to determine the risk of an avulsion through the abandoned channel behind the Dike Road Dike and berm and develop solutions to prevent such an event from occurring. Include City of Arlington to address that portion of the dike they own.	Study complete, implementation incomplete
Mainstem	RA-33 Investigate Methods for Flood Hazard Reduction Benefits as Part of the Restoration Activities in Portage Creek	Determine methods to use Portage Creek for flood reduction that support on-going efforts to restore the County-owned Wildlife Reserve.	

4.3.2 Critical Areas Monitoring and Adaptive Management Program

The monitoring and adaptive management program was developed to support implementation of Snohomish County’s critical area regulations in order to meet the requirements of the GMA. The program goal is to determine the effectiveness of the regulations in conserving the functions and values of the county's critical areas.

The City provides Snohomish County with information relevant to status reports. Currently the STAG reviews annual assessments of watershed recovery goals from the Chinook Plan. Elements of this monitoring that may be reflected in the monitoring within Arlington designated areas include riparian conditions, floodplain armoring and

side channel connectivity, LWD, hydrology, water quality, and sediment. The City or partners in restoration also submit the amount of riparian work that has been completed so that can be tracked over time.

The most current example of a City project being included in the County status report is the Graafstra/Country Charm acquisition of 137 acres of floodplain. The area is to be retained in open space by the changing of proposed zoning from residential to Public/Semi-Public for habitat and recreational uses.

Other local projects are likely to be included in future versions of the status report. One project was the installation of two log jams and flood fencing in the Arlington UGA reach by Snohomish County that occurred in summer of 2011. Another project was the construction of a stormwater wetland immediately downstream of the Stillaguamish River – City reach by the City in 2011.

4.4 Snohomish Conservation District

The Snohomish Conservation District (SCD) is a political subdivision of the State of Washington (authorities, powers, and structure contained in RCW 89.08). The mission of the SCD is “to work cooperatively with others to promote and encourage conservation and responsible use of natural resources.” The SCD covers most of Snohomish County and Camano Island, which is part of Island County. The total area that the SCD covers is 2,112 square miles of mainland and 40 square miles on Camano Island.

The SCD has no direct jurisdiction and authority over natural resources. Its responsibility lies primarily in working with owners and users of land and resources. The SCD, however, does work with administrators of public land on works affecting land and resources. In such activities, the SCD works with the public and private sectors on mutual problems and opportunities where respective interests need to be correlated.

The City annexed into the SCD in 2005 so landowners could benefit from SCD services. The SCD is coordinating with the City’s Natural Resources Department and Stormwater Department in providing assistance to landowners to implement Low Impact Development (LID) alternatives for reducing stormwater impacts. The two main features of the program include the installation of rain gardens and rainwater collection systems. The SCD is able to provide design assistance in partnership with the City.

4.5 Washington State Department of Ecology

The City continues to utilize Ecology staff as a resource for technical support and regulatory assistance when needed.

The City continues with implementation of the Phase II National Pollution Discharge Elimination System (NPDES) permit. The City participated in the development of the

total maximum daily load (TMDL) which identifies a specific allocation of pollutants which the City must take actions to stay within.

Ecology has provided excellent grant support over the past several years by providing funding towards the water reclamation facility, Old Town stormwater wetland, wetland restoration, and NPDES implementation.

5 INVOLVEMENT OF OTHER AGENCIES AND ENTITIES

5.1 Puget Sound Partnership

The Puget Sound Partnership (Partnership) consists of representatives from a variety of interests from the Puget Sound region including business, agriculture, the shellfish industry, environmental organizations, local governments, tribal governments, and the Washington state legislature. Some of the Partnership's key tasks are as follows:

- Develop a set of recommendations for the Governor, the Legislature and Congress to preserve the health of Puget Sound by 2020 and ensure that marine and freshwaters support healthy populations of native species as well as water quality and quantity to support both human needs and ecosystem functions.
- Engage citizens, watershed groups, local governments, tribes, state and federal agencies, businesses and the environmental community in the development of recommendations.
- Review current and potential funding sources for protection and restoration of the ecosystem and, where possible, make recommendations for the priority of expenditures to achieve the desired 2020 outcomes.

The Partnership, through the Leadership Council, released an Action Agenda in December 2008. Implementation of this Action Agenda has resulted in state and federal funding of restoration and protection initiatives and projects. This includes integrating the work of the Puget Sound Nearshore Restoration Project to increase focus on completing work necessary to request Puget Sound restoration funds under the Water Resources Development Act slated for 2012.

On an annual basis, each of the watershed groups representing the fourteen watershed chapters of the Puget Sound Salmon Recovery Plan, including the Stillaguamish Watershed Council, develop three-year work program updates to describe the watershed's accomplishments during the previous year, identify the current status of recovery actions, and to propose future actions in the next three years necessary to

implement the Salmon Recovery Plan. These work programs are intended to provide a road map for policy and technical decision makers across the Puget Sound region on priorities for implementing the salmon recovery plan, inform and support funding requests, and establish a recovery trajectory within each watershed and the region.

Additionally, the Stillaguamish Watershed Council is involved with the Puget Sound Partnership through the following:

- Monitoring and Adaptive Management Plan
- Whidbey Action Area Local Integration
- Ecosystems Recovery Board
- Puget Sound Salmon Recovery Council

6 STRATEGIES TO ACHIEVE LOCAL RESTORATION GOALS

This section discusses programmatic measures for the City designed to foster shoreline restoration and achieve a net improvement in shoreline ecological processes, functions, and habitats. With projected budget and staff limitations, the City is limited in its ability to implement restoration projects or programs on its own. However, the City's SMP represents an important vehicle for facilitating and guiding restoration projects and programs that can be achieved in partnership with private and/or non-profit entities. The City can provide direction and leadership to assure that restoration designs meet the identified goals of the various plans. The discussion of restoration mechanisms and strategies below highlights programmatic measures that the City may potentially implement as part of the proposed SMP, as well as parallel activities that would be managed by other governmental and non-governmental organizations.

6.1 Capital Facilities Program

The City's Natural Resources Department could develop shoreline restoration as a new section of the City's Capital Facilities Program (CFP) to facilitate implementation. The City could review the various elements of previously adopted plans and determine what projects have yet to be implemented in shoreline areas and develop a prioritized schedule. Examples include the riparian plantings projects or log jams to be installed at Country Charm.

6.2 Development Opportunities

When shoreline development occurs, the City has the ability to look for opportunities to conduct restoration in addition to minimum mitigation requirements as part of the SMP. Development may present timing opportunities for restoration that would not otherwise occur and may not be available in the future. Mitigation may also be allowed through the use of a fee-in-lieu-of or exchange of land for “banking” opportunities. In certain cases, on-site mitigation opportunities are limited due to building site constraints, limited potential ecological gains, or other site-specific factors. In these instances, the City shoreline administrator could identify an off-site restoration site within the immediate sub-basin that could be contributed to in lieu of on site mitigation.

The City can also provide coordination of the various non-profit groups or citizen volunteers that can assist with the installation and monitoring of restoration projects. The City strongly encourages the participation of the citizens to build a strong sense of stewardship that comes through their investment of time, money, or materials in to the project.

6.3 Development Incentives

Through the SMP, the City may provide development incentives for restoration, including the waiving of some or all of the development application fees, infrastructure improvement fees, parks mitigation fees, or stormwater fees. This may serve to encourage developers to try to be more imaginative or innovative in their development designs to include more access and preservation. Examples of development actions that could be incentivized include the building of trails, installation of rain gardens or other LID features above and beyond DOE requirements, shared parking, exceeding landscape or open space requirements, or other innovative measures that benefit the environment and the citizenry.

6.4 Tax Relief / Fee System

A tax relief/fee system to directly fund shoreline restoration measures may be investigated under the SMP. One possibility is to have the City work with the county to craft a preferential tax incentive through the Public Benefit Rating System administered by the County under the Open Space Taxation Act (RCW 84.34) to encourage private landowners to preserve natural shore-zone features for "open space" tax relief. Ecology has published a technical guidance document for local governments who wish to use this tool to improve landowner stewardship of natural resources. More information about this program can be found at <http://www.ecy.wa.gov/biblio/99108.html>. The guidance in this report provides technically based property selection criteria designed to augment existing open space efforts with protection of key natural resource features that directly benefit the watershed. Communities can choose to use any portion, or all, of

these criteria when tailoring a Public Benefit Rating System to address the specific watershed issues they are facing.

A second possibility is a Shoreline Restoration Fund. A chief limitation to implementing restoration is local funding, which is often required as a match for state and federal grant sources. To foster ecological restoration of the City's shorelines, the City may establish an account that may serve as a source of local match monies for non-profit organizations implementing restoration of the City's shorelines. This fund may be administered by the City shoreline administrator and be supported by a levy on new shoreline development proportional to the size or cost of the new development project. Monies drawn from the fund would be used as a local match for restoration grant funds, such as the SRFB, Aquatic Lands Enhancement Account, or another source.

6.5 Resource Directory

Development of a resource list would be helpful in aiding property owners who want to be involved in restoration. Examples of grant programs that could be included are:

Landowner Incentive Program: This is a competitive grant process to provide financial assistance to private individual landowners for the protection, enhancement, or restoration of habitat to benefit species-at-risk on privately owned lands.

SRFB Grant Programs: SRFB administers two grant programs for protection and/or restoration of salmon habitat. Eligible applicants can include municipal subdivisions (cities, towns, and counties, or port, conservation districts, utility, park and recreation, and school districts), tribal governments, state agencies, nonprofit organizations, and private landowners.

Recreation and Conservation Office is a Washington State entity that hosts a variety of grant programs that range from recreation to watershed recovery.

The Tulalip Tribes and the Stillaguamish Tribe of Indians are developing various grant programs that may support access and trails that would provide social benefits to the citizens.

6.6 Volunteer Coordination

The City will continue to emphasize and accomplish restoration projects by using community volunteers and coordinate with organizations such as the Stilly/Snohomish Fisheries Enhancement Task Force, Evergreen Fly-fishing Club, Stillaguamish Tribe of Indians, local churches, Kiwanis, Rotary International, the Chamber of Commerce, and the Arlington School District.

Probably the most important volunteer is the landowner that acts as the steward of the land following the completion of a project. The City may have to provide ongoing

assistance and resources to landowners that need additional plantings, equipment use, or other materials to maintain their restoration project.

6.7 Regional Coordination

The City will continue its association and active involvement with the SWC, Puget Sound Salmon Recovery Council, Partnership, Snohomish County, and fellow stakeholders in the Whidbey Action Area. The City may also look for other time-sensitive opportunities for involvement in regional restoration planning and implementation.

7 PROPOSED IMPLEMENTATION TARGETS AND MONITORING METHODS

7.1 Project Evaluation

When a restoration project is proposed for implementation by the City, other agency, or by a private party, the project should be evaluated to ensure that the project's objectives are consistent with those of this Restoration Plan and, if applicable, that the project warrants implementation above other candidate projects. It is recognized that, due to funding sources or other constraints, the range of any individual project may be narrow. It is also expected that the list of potential projects may change over time, that new projects will be identified and existing opportunities will become less relevant as restoration occurs and as other environmental conditions, or our knowledge of them, change.

When evaluating potential projects, priority should be given to projects most meeting the following criteria:

- Restoration meets the goals and objectives for shoreline restoration listed in Chapter 3.
- Restoration or protection of processes is generally of greater importance than restoration of functions.
- Restoration avoids residual impacts to other functions or processes.
- Addresses a known degraded condition or limiting factor for salmon recovery.
- Conditions that are progressively worsening are of greater priority.
- Restoration addresses multiple functions or processes.

- Restoration has a high benefit to cost ratio.
- Restoration has a high probability of success.
- Restoration is feasible, such as being located on and accessed by public property or private property that is cooperatively available for restoration.
- Restoration project design should consider impacts to adjacent property owners.
- There is public support for the project.
- The project is supported by, and consistent with, other restoration plans.

The City should consider developing a project “scorecard” as a tool to evaluate projects consistent with these criteria.

7.2 Monitoring and Adaptive Management

In addition to project monitoring required for individual restoration and mitigation projects, the City should conduct system-wide monitoring of shoreline conditions and development activity, to the degree practical, recognizing that individual project monitoring does not provide an assessment of overall shoreline ecological health. The following three-prong approach is suggested:

1. Track information using the City’s geographic information system (GIS) and permit system (tracking should include high-quality aerial photo documentation for future analysis) as activities occur (development, conservation, restoration, and mitigation). Such activities might include:
 - New shoreline development
 - Shoreline variances (including the nature of the variance)
 - Compliance issues
 - New impervious surface area
 - New and existing Critical Area Protection Easements
 - Removal of fill or armoring
 - Addition of fill or armoring
 - Installation of riparian buffers
 - Vegetation retention/loss

- Installation of LWD projects
- Locations where in-lieu-of mitigation program has been utilized (both the sending and receiving locations of impact)

The City may require project proponents to monitor as part of project mitigation, which may be incorporated into this process. Regardless, as development and restoration activities occur in the shoreline area, the City should seek to monitor shoreline conditions to determine whether both project-specific and overall-SMP goals are being achieved.

2. Periodically review and provide input to regional ongoing monitoring programs, such as:
 - SWC adaptive management of Chinook Plan
 - Ecology monitoring programs
 - Puget Sound Partnership monitoring programs

Through this coordination with regional agencies, the City should seek to identify any major environmental changes that might occur.

3. Re-review status of environmental processes and functions at the time of periodic SMP updates to, at a minimum, validate the effectiveness of the SMP. Re-review should consider what restoration activities actually occurred compared to stated goals, objectives and priorities, and whether restoration projects resulted in a net improvement of shoreline resources.

Under the SMA, the SMP is required to result in no net loss of shoreline ecological functions. If this standard is found to not be met at the time of review, Arlington will be required to take corrective actions. The goal for restoration is to achieve a net improvement. The cumulative effect of restoration over time between reviews should be evaluated along with an assessment of impacts of development that is not fully mitigated to determine effectiveness at achieving a net improvement to shoreline ecological functions.

Evaluation of shoreline conditions, permit activity, GIS data, and policy and regulatory effectiveness should occur at varying levels of detail consistent with the comprehensive plan update cycle. A complete reassessment of conditions, policies and regulations should be considered every eight years. To conduct a valid reassessment of the shoreline conditions every eight years, it is necessary to monitor, record and maintain key environmental metrics to allow a comparison with baseline conditions. As monitoring occurs, the City should reassess environmental conditions and restoration objectives. Those ecological processes and functions that

are found to be worsening may need to become elevated in priority to prevent loss of critical resources. Alternatively, successful restoration may reduce the importance of some restoration objectives in the future.

7.3 Reporting

Chapter 4 describes project opportunities to restore shoreline conditions. The restoration opportunities included are based upon a detailed inventory and analysis of shoreline conditions by many sources. Nonetheless, exhaustive scientific information about shoreline conditions and restoration options is cost prohibitive at this stage. Additionally, restoration is at times experimental. Monitoring must be an aspect of all restoration projects. Information from monitoring studies will help demonstrate what restoration is most successful. Generally, conservation of existing natural areas is the least likely to result in failure.

This Restoration Plan does not provide a comprehensive scientific index of restoration opportunities that allows the City to objectively compare opportunities against each other. If funding was available, restoration opportunities could be ranked by which opportunities are expected to have the highest rates of success, which address the most pressing needs, and other factors. Funding could also support a long-term monitoring program that evaluates restoration over the life of the SMP (as opposed to independent monitoring for each project). However, the following table (Table 7-1) outlines a possible schedule and funding sources for implementation of a variety of efforts that could improve shoreline ecological function, and are described in previous sections of this report.

Table 7-1. Implementation Schedule and Funding for Restoration Projects, Programs and Plans.

Restoration Project/Program	Schedule	Funding Source or Commitment
SMP – overall plan effectiveness	8-year review	Arlington General fund and Ecology grant
SWC annual review of adaptive management (AM)	Annual	Arlington General Fund, County, Tribal and State funding
SWC five-year review of AM, and recommended actions to meet goals	5-year review	Arlington General Fund, County, Tribal and State Funding
Stormwater Comprehensive Plan	As prioritized in adopted plan	Stormwater fees, grant funds
Privately funded projects	1-, 5-, and 10-year review	Private, in-lieu-of, grant funding or volunteer monitoring
Stakeholder partnerships	Annual	Arlington General fund, stormwater fund or volunteer monitoring
Tree City report	Annual	Arlington General fund

City planning staff is encouraged to track all land use and development activity, including exemptions, within shoreline jurisdiction, and may incorporate actions and programs of the other departments as well. A report may be assembled through the use of "Permit Trax" the City permit computer tracking system that provides basic project information, including location, permit type issued, project description, impacts, mitigation (if any), and monitoring outcomes as appropriate. Examples of data categories might include square feet of non-native vegetation removed, square feet of native vegetation planted or maintained, reductions in chemical usage to maintain turf, linear feet of eroding stream bank stabilized through plantings, or linear feet of shoreline armoring removed. The report would also outline implementation of various programs and restoration actions (by the City or other groups) that relate to watershed health.

The staff report may be assembled to coincide with comprehensive plan updates and may be used, in light of the goals and objectives of the SMP, to determine whether implementation of the SMP is meeting the basic goal of no net loss of ecological functions relative to the baseline condition established in the *Shoreline Analysis Report for the City of Arlington's Shoreline*. In the long term, the City should be able to demonstrate a net improvement in the City's shoreline environment.

8 REFERENCES

City of Arlington. 2005. Comprehensive Plan.

City of Arlington. 2010. Final Comprehensive Stormwater Plan. Prepared by the City of Arlington with assistance from URS Consultants and Katy Isaksen & Associates. October.

City of Arlington. 2011. Stormwater Management Program. Version 2011-1.

Snohomish County. 2003. Public Draft Review Stillaguamish River Comprehensive Flood Hazard Management Plan. Surface Water Management Division. Everett, WA.

Stillaguamish Implementation Review Committee (SIRC). 2005. Stillaguamish Watershed Chinook Salmon Recovery Plan. Published by Snohomish County Department of Public Works, Surface Water Management Division. Everett, WA.

Stillaguamish Technical Advisory Group (STAG). 2000. Technical assessment and recommendations for chinook salmon recovery in the Stillaguamish watershed.

The Watershed Company (TWC). January 2011. Final Shoreline Analysis Report for the City of Arlington's Shoreline: South Fork and Mainstem Stillaguamish River and Portage Creek. Prepared for the City of Arlington, Arlington, WA.

9 LIST OF ACRONYMS AND ABBREVIATIONS

BMP	Best management practice
City	City of Arlington
Chinook Plan	Stillaguamish Watershed Chinook Salmon Recovery Plan
Country Charm.....	Country Charm Recreation and Conservation Area
Ecology	Washington State Department of Ecology
ESA	Endangered Species Act
GMA	Growth Management Act
Guidelines	Shoreline Master Program Guidelines (WAC 173-26, Part III)
HC.....	Highway Commercial (City zoning designation)
LID	Low impact development
LWD	Large woody debris
NPDES.....	National Pollution Discharge Elimination System
OTBD.....	Old Town Business District (City zoning designation)
P/SP.....	Parks/Semi-Public (City zoning designation)
RLMD	Low to Moderate Density Residential (City zoning designation)
RHD.....	High Density Residential (City zoning designation)
RMD	Moderate Density Residential (City zoning designation)
SCD.....	Snohomish Conservation District
SIRC.....	Stillaguamish Implementation Review Committee
SMA.....	Shoreline Management Act

- SMP..... Shoreline Master Program
- SR Suburban Residential (City zoning designation)
- SRFB..... Salmon Recovery Funding Board
- STAG Stillaguamish Technical Advisory Group
- SWC..... Stillaguamish Watershed Council
- TMDL Total maximum daily load
- WAC Washington Administrative Code
- WDFW..... Washington Department of Fish and Wildlife
- WRIA..... Water Resource Inventory Area

APPENDIX D

Jurisdiction Exhibits (Excerpts from the
Shoreline Master Program Handbook)

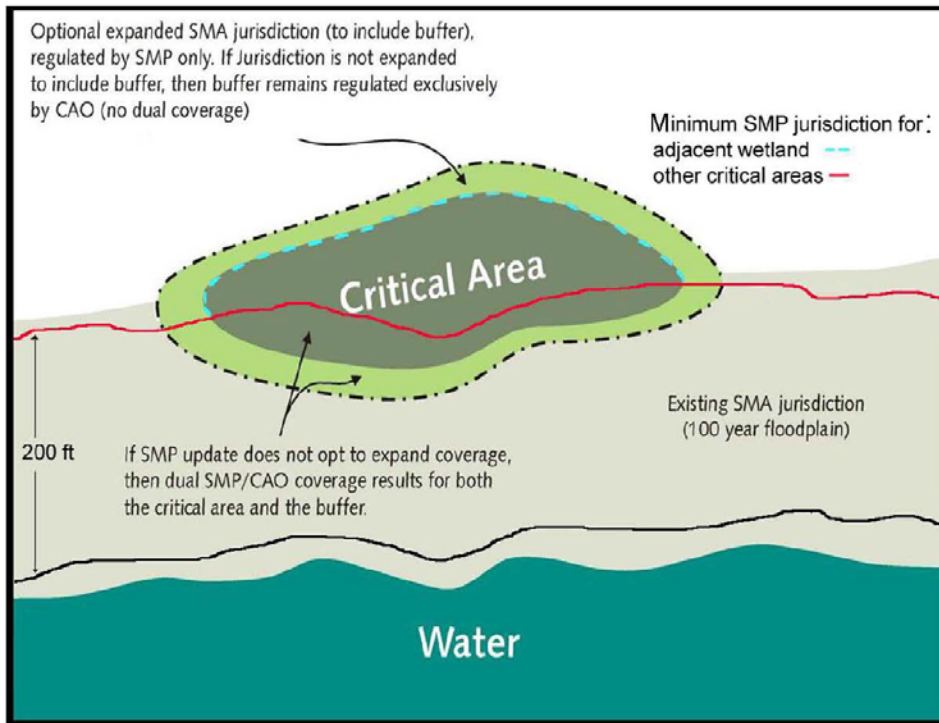


Figure 5-8: Local governments have the option to expand SMA jurisdiction to include lands necessary for buffers for critical areas.

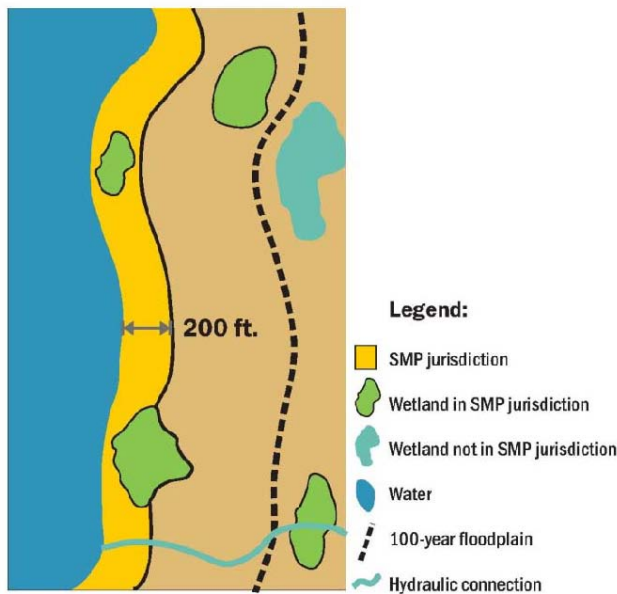


Figure 5-9: Wetlands in shoreline jurisdiction are either fully or partially within 200 feet of the OHWM, within the floodplain, or associated through hydraulic continuity.