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memorandum

date December 31, 2007

to Nancy Eklund, City of Puyallup

from Kent Hale, ESA Adolfson
Reema Shakra, ESA Adolfson

subject **City of Puyallup, Shoreline Master Program Update - Cumulative Impacts**

With the assistance of a grant, the City of Puyallup is updating its Shoreline Master Program (SMP) consistent with state guidelines (WAC Chapter 173-26). Under the shoreline guidelines, local jurisdictions are required to evaluate and consider cumulative impacts of reasonably foreseeable future development in the shorelines of the state (WAC 173-26-186(8)(d)). This memorandum assesses the cumulative impacts of development in the shoreline that would result from development and activities over time under the proposed City of Puyallup SMP. This memorandum is prepared as a grant deliverable (SMA Grant No. G0500027, Task 2.2) and is intended to support the environmental review of the proposed SMP amendments under the State Environmental Policy Act (SEPA).

For the City of Puyallup, shorelines of the state in the city limits and urban growth areas (UGA) include approximately 5.7 miles of the Puyallup River (between approximately River Mile (RM) 5.7 and 11.4) and nearly all 3.8 miles of Clarks Creek from its headwaters in the city to its confluence with the Puyallup River in the City's UGA. The Puyallup River is considered a shoreline of statewide significance. The City of Puyallup Comprehensive Plan (2006) identifies sub-areas within the unincorporated UGA. Portions of Clarks Creek and the Puyallup River are located in the West Valley Sub-area, west of the city limits. The portion of the Puyallup River east of the city limits is located in the East Valley Sub-area.

The purpose of evaluating cumulative impacts is to ensure that, when implemented over time, the aggregate of programs the City is employing to protect ecosystem functions, including the proposed SMP goals, policies and regulations, will achieve no net loss of shoreline ecological functions from current "baseline" conditions. Baseline conditions are identified and described in the City of Puyallup Shoreline Inventory and Characterization Report (ESA Adolfson, July 2007). The proposed Puyallup SMP provides standards and procedures to evaluate individual uses or developments for their potential to impact shoreline resources on a case-by-case basis through the permitting process. The purpose of this memorandum is to determine if impacts to shoreline ecological functions are likely to result from the aggregate of activities and developments in the shoreline that take place over time.

The guidelines state that, "to ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative

impacts and fairly allocate the burden of addressing cumulative impacts among development opportunities. Evaluation of such cumulative impacts should consider:

- Current circumstances affecting the shorelines and relevant natural processes;
- Reasonably foreseeable future development and use of the shoreline; and
- Beneficial effects of any established regulatory programs under other local, state, and federal laws" (WAC 173-26-186(8)(d)).

This cumulative impacts assessment uses these three considerations as a framework for evaluating the potential long-term impacts on shoreline ecological functions and processes that may result from development or activities under the aggregate of City planning and regulatory programs, including the proposed SMP, over time.

Existing Conditions

As part of the City's SMP update process, a shoreline inventory and characterization report and map folio was prepared in 2006. The report was revised in July 2007 to address technical and public review comments. The Shoreline Inventory and Characterization (ESA Adolfson, 2007) identifies existing conditions and evaluates the ecological functions and processes in the City's shoreline jurisdiction. The inventory included all shoreline areas within the City of Puyallup and its urban growth areas (UGA) and included a characterization of ecosystem-wide processes functioning at a watershed scale.

Issues of concern are focused on shoreline armoring, flooding, water quality, and habitat. There are a number of opportunities for conservation and restoration actions in the city to address such issues**.** However, the City would need to partner with other agencies to implement flood related restoration actions along the Puyallup River. The following sections further summarize existing conditions with regard to Puyallup's shorelines.

Figure 1. Shoreline Planning Area

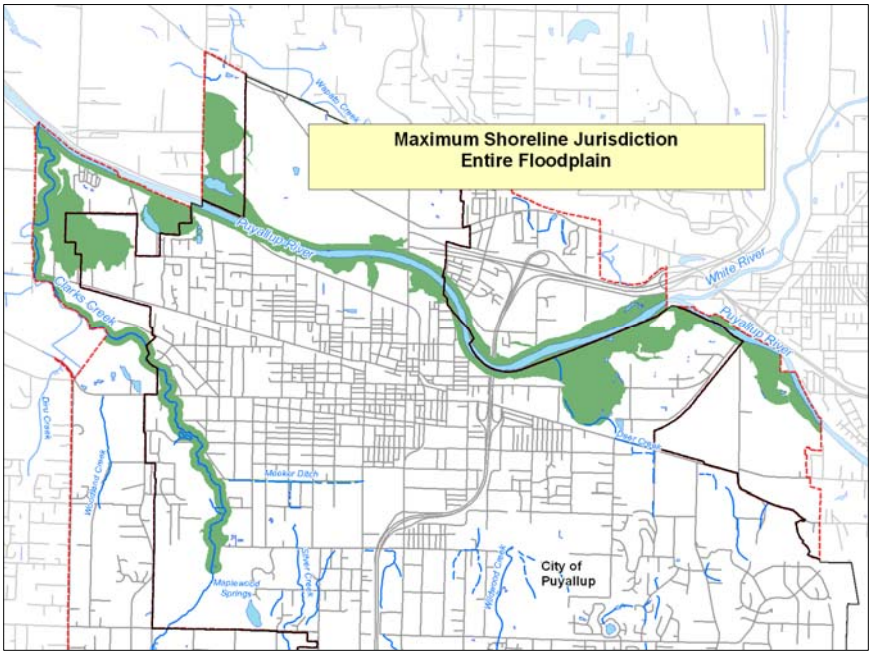

Figure 1. Shoreline Planning Area. The term "shoreline planning area" refers to the study area used for the shoreline inventory and characterization. The shoreline planning area was used for planning purposes to assist in developing the SMP update. It represents the maximum land and water area that Puyallup could regulate under the Shoreline Management Act – which is the entire 100-year floodplain associated with the Puyallup River and Clarks Creek. The location of the floodplain areas is based on Federal Emergency Management Agency (FEMA) Draft Flood Insurance Rate Maps (DFIRM) maps (2007).

Figure 2. Approximate Shoreline Jurisdiction

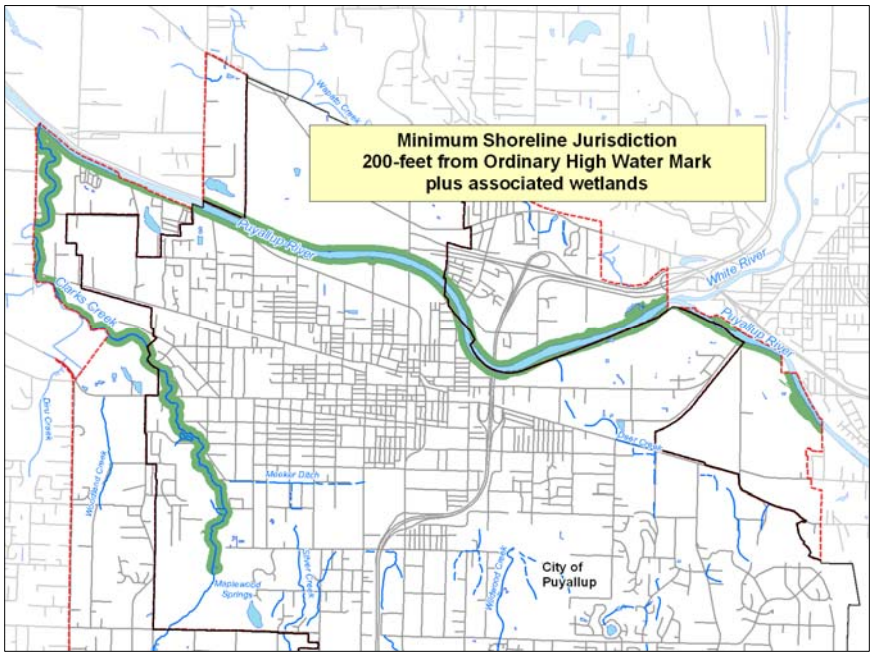

Figure 2. Approximate Shoreline Jurisdiction. The shoreline jurisdiction is different from the shoreline planning area in that the shoreline jurisdiction is subject to the proposed Puyallup SMP regulations and only includes the area two hundred feet from the ordinary high water mark (OHWM) and associated wetlands.

Watershed Context and Shoreline Modifications

The City of Puyallup is in the Puyallup-White River watershed (Water Resource Inventory Area (WRIA) 10). The Puyallup River travels approximately 54 miles from its headwaters on the southwest slopes of Mount Rainier to its mouth at Commencement Bay. The City of Puyallup and its UGA occupy approximately 17.8 square miles, or 1.7 percent of the land area included in all of WRIA 10. The portion of the Puyallup River within the city and its UGA is approximately 10.5 percent of the total length of the river. Clarks Creek is approximately 3.8 miles in length, extending from its headwaters at Maplewood Springs to its confluence with the Puyallup River. Nearly all of Clarks Creek is in the city limits and/or the UGA. Clarks Creek originates from groundwater surfacing at Maplewood Springs, which is located on the upland plateau. It flows north, descending into the Puyallup River floodplain and entering the Puyallup River near RM 5.8, near the Melroy Bridge.

Past river management projects have significantly altered the form and functioning of the Puyallup River in and near the city. Significant floods and the avulsion of the White River into the Puyallup River (via the Stuck River channel) in early 20th Century prompted the formation of the Inter-County River Improvement District (ICRID). The ICRID addressed flooding and erosion issues with a series of projects intended to manage the size, location, and behavior of the Puyallup River and its tributaries. Between 1908 and 1917, significant relocation (straightening), armoring, and diking of the Puyallup River was completed. Such alterations resulted in physically disconnecting the river channel from its floodplain and adjacent wetlands and restricted the river channel from naturally migrating. This has limited the lateral flow of surface water from the river to its historic floodplain resulting in a reduction in opportunity for overbank flooding. Loss of overbank flooding prevents the opportunity for floodplain sediment deposition, which is related to increased water quality and fertile soils.

The sediment dynamics of the lower Puyallup have been influenced by mining and river dredging activities. As part of ICRID programs and private-party mining operations, channel sediments were removed from the lower Puyallup River until the 1980s. This approach maintained channel capacity. In-channel gravel mining has generally ceased or has been significantly reduced in recent years to preserve instream habitat. As a result, the

lower Puyallup River has aggraded, or been elevated as sediment accumulates on the channel bed, thereby reducing flood carrying capacity.

The lower portion of Clarks Creek contains naturally occurring high banks and does not require levees to protect surrounding areas from flooding. However, most residential areas along the stream have constructed revetments (armored banks) to protect their homes from channel migration and the subsequent potential for erosion and loss of property. Armoring in residential areas varies from solid concrete to riprap to stacked sandbags. Bank armoring is also found in public parks. The only portion of Clarks Creek that has undisturbed banks is adjacent to and upstream of the Washington Department of Fish and Wildlife (WDFW) hatchery.

Water Quality

Impairments to water quality within the waters of the City of Puyallup have a variety of point and non-point sources. Many of these sources may also result from land uses and activities upstream of the City's jurisdictional boundaries. Agriculture, gardening practices, and property development can result in excessive nutrients (nitrogen and phosphorous) entering surface and groundwater, which promote algae growth and too much organic waste in the water. This reduces dissolved oxygen needed by fish. Failing septic systems and livestock are the typical sources of fecal coliform bacteria, which can indicate a risk to human health. Land development, roads, logging, and agriculture increase sediment in streams, cloud the water, and cover aquatic habitat. Although these activities may occur both upstream of the City and within the City's UGA, they both affect water quality in the City's waterbodies.

Within the City's UGA, contributing sources of increased nutrients could include agricultural land, areas using on-site septic systems, and residential lawns immediately adjacent to streams. In addition, stormwater discharged to streams and the Puyallup River can contain contaminants such as heavy metals, oil, grease, and organic compounds.

Both the Puyallup River and Clarks Creek were identified by the Department of Ecology as Category 5 waterbodies due to the presence of high levels of bacteria. Category 5 waters are polluted waters that are on the state's "303(d) list" of impaired waterbodies that require a Total Maximum Daily Load (TMDL) study. The Department of Ecology is currently in the process of developing a TMDL study for the Puyallup River and Clarks Creek in coordination with the City.

Habitat and Species

The shorelines within the City of Puyallup provide important habitat for a number of fish and wildlife species. The aquatic environments of the Puyallup River and Clarks Creek are important riverine corridors. Several state and federally listed species are known to occur, or could potentially occur, within the City's shoreline jurisdiction, including Chinook salmon, Puget Sound steelhead, and bull trout. Puget Sound/Strait of Georgia coho salmon, a federal species of concern, also occurs in the area. Priority species designated byWDFW that are documented in the city include several anadromous fish species, bald eagle, and concentrations of waterfowl. The City's shoreline planning area contains the following priority habitats designated by WDFW: riparian areas, urban natural open spaces, and wetlands. The entire length of the Puyallup River within the City's Shoreline Planning Area is designated as critical habitat for Puget Sound evolutionary significant unit (ESU) of Chinook salmon and bull trout.

Modifications to the river system have resulted in reduced levels of ecosystem functioning, including hydrology, water quality, riparian habitat, and in-stream habitat. Changes to hydrology focus on modified flow regime due to dams, channelization, diversion, withdrawals, and urbanization. River management and levees have reduced or eliminated the connection between the river system and the floodplains, changing the spatial pattern and extent of habitats, and limiting the potential for water quality processes to occur naturally. Disturbances to the channel banks have resulted in areas that are dominated by non-native invasive species. Wood, in the form of riparian trees and in-channel wood, is generally lacking within the system, which negatively impacts riparian and aquatic habitats.

Land Use

The upper Puyallup River watershed consists primarily of rural lands, with forestry and agricultural uses dominating. The lower Puyallup River watershed is characterized by more urban and industrial land uses. A third of the Puyallup River shoreline jurisdiction within the city is currently vacant (35 percent). While the term "vacant" may not always accurately reflect current conditions (such as passive use, open space, recreational areas), the classification generally indicates that no structural improvements have been made or assessed for taxes on the property. Depending on the land use and zoning designations, these areas may be subject to new development in the future. The second most common type of land use is agriculture (21 percent) The remaining land uses are located on the western portion of the river within the city and are a mix of open space/recreation, commercial, and low-density residential uses. Almost half of the shoreline jurisdiction for Clarks Creek, mainly along the eastern bank, is currently low-density residential (41 percent). Another large portion (40 percent) is used for parks, open space, and public facilities.

Public Access

The City of Puyallup has a diversity of parks, open space, and public facilities, some of which provide shoreline access. Public access to the Puyallup River for fishing and other recreation is available along the river, including the Riverfront Trail, Palmer Property and River Road levees. There is greater shoreline access to Clarks Creek through developed parks and publicly held land, including Clarks Creek Park and DeCoursey Park.

Restoration Opportunities

Based on the key ecosystem functions that are currently altered, three specific types of restoration actions have been identified that will provide the greatest benefit the Puyallup River and Clarks Creek. Some restoration actions must occur at the watershed scale, which will restore ecosystem functions that cannot be addressed solely within the city. Opportunities identified thus far include programmatic actions (such as stormwater management techniques city-wide to address water quality) and site specific actions (such as levee setbacks, bulkhead replacements, or vegetation enhancement projects on individual properties).

1) **Reconnect channel to floodplain.** Actions in this category will increase flood storage, restore floodplain area, and provide a more natural transition from aquatic to upland habitats. For the Puyallup River, these actions could include the use of setback levees and revetments, and regrade portions of the floodplain to create back channels and reconnect wetlands. On Clarks Creek, these actions could include the removal of bank armoring currently intended to prevent channel migration and/or bank erosion.

2) **Water quality improvements.** Actions in this category could take many forms. While the causes of water quality impairments may be numerous and not well understood, ongoing studies are underway to

investigate and establish baseline thresholds. Programmatic and site-specific measures could focus on source control, retrofitting, and advanced treatment technologies. These measures may relate to regulations for land use and development, protection of wetlands, and enhanced stormwater treatment.

3) **Enhance existing habitats.** Actions in this category will improve the functioning of the existing aquatic, riverine wetland, and riparian habitats that currently exist along the Puyallup River and Clarks Creek. These actions could include the removal of non-native invasive vegetation, installation of native riparian vegetation, and replacement of traditional "hard" shoreline armoring with more natural alternative bank stabilization.

Reasonable Foreseeable Future Development and Use

The City of Puyallup has regulatory authority over land uses within the city limits and plans for future land use in the city and UGA. The City's zoning and vision of future land use as established by the comprehensive plan land use designations is generally consistent with the existing land use pattern described for Clarks Creek. The lower reach of Clarks Creek would likely develop with residential properties while the upper reach would remain as open space. A planned transition from less intense to more intense land uses in the shoreline jurisdiction is expected to occur along the Puyallup River where existing land use is vacant or agriculture.

According to the Pierce County Assessor information for existing land use, a third of the Puyallup River shoreline jurisdiction is currently vacant (35 percent) and nearly a quarter is used for agriculture (21 percent). The other common land uses are Open Space/Recreation (12 percent) Commercial (11 percent), and Single-family Residential (10 percent). Commercial land uses are concentrated west of SR 512 along River Road. The proposed shoreline environment designation for the Puyallup River shoreline areas is Puyallup River Urban Conservancy (see subsequent section on environment designations below).

The City's Comprehensive Plan (2006) designates the north bank of the Puyallup River as Light Manufacturing/Warehousing, Moderate-Density Residential, and Low-Density and Rural Buffer Residential with portions also within an Agricultural Overlay District. The south bank of the Puyallup River is predominantly designated Auto-Oriented Commercial and High-Density Residential, with Low-Density Residential just west of State Route (SR) 512. Portions of the south bank in the UGA are predominantly designated Moderate-Density Residential and Business/Industrial Parks. Zoning designations in the city generally follow the land use designations established in the Comprehensive Plan.

Figure 3. Puyallup River

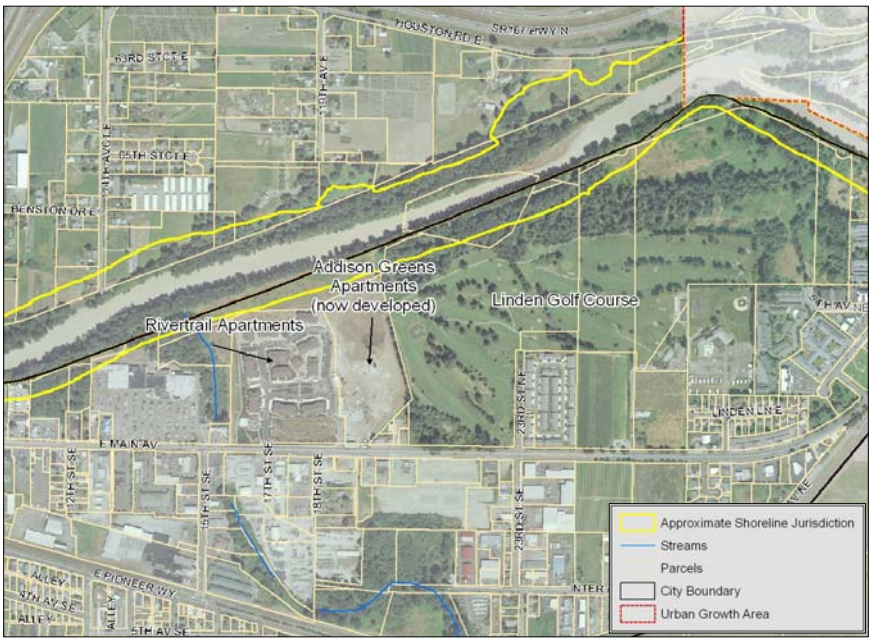

Figure 3. Puyallup River. Areas of transition in the Puyallup River shoreline jurisdiction are vacant or agricultural lands zoned for more intensive uses. Rivertrail Apartments and Addison Greens are recent examples where vacant land along the river was developed as multi-family residential. Both apartment complexes are located in close proximity to the river's shoreline jurisdiction, west of the Linden Golf Course

Figure 4. Puyallup River

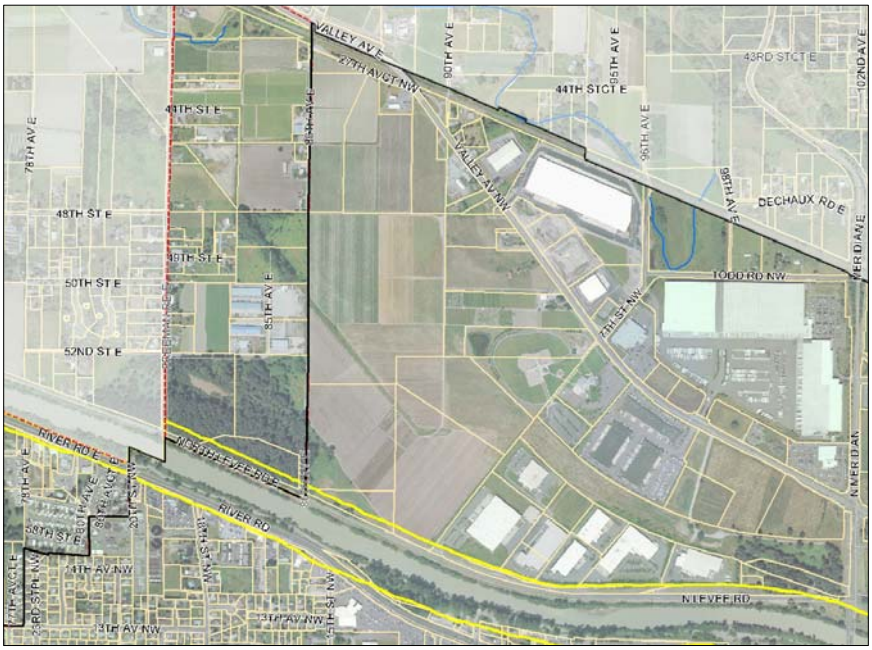

Figure 4. Puyallup River. Another large area in proximity to the Puyallup River shoreline jurisdiction that has potential to develop is located near the western city limits (see Figure 2). The area is currently a mix of vacant and agricultural land which has comprehensive plan designations of Medium Density Residential and Light Manufacturing/Warehouse.

Figure 5. Puyallup River

Figure 5. Puyallup River. Another large property currently in agricultural use is located just beyond the eastern city limits in the East Valley Sub-area, south of the Puyallup River. The area is designated for Business/Industrial Park development. The City Parks and Recreation Department has expressed interest in purchasing a portion of the property for development into active recreational uses such as ball fields.

Almost half (41 percent) of existing land use in the shoreline jurisdiction along Clarks Creek is low-density residential. Open Space and Recreational uses make up another 29 percent of the shoreline jurisdiction. Most of this area is associated with Clarks Creek Park, DeCoursey Park, and WDFW-owned land. Washington State University (WSU), located in the UGA on the west side of Clarks Creek, makes up 11 percent of the shoreline jurisdiction. The proposed shoreline environment designation on Clarks Creek is Clarks Creek Urban Conservancy except that WDFW-owned land and portions of Clarks Creek Park are designated as Natural (see subsequent section on environment designations below).

Comprehensive plan designations more closely follow existing land uses for Clarks Creek than for the Puyallup River. Comprehensive plan designations along Clarks Creek are mainly residential (Low-Density, Medium-Density and Rural Buffer Residential). The area surrounding the creek's headwaters, WDFW-owned land and City parks located along the creek are designated as Parks and Open Space. WSU is designated as Public Facilities. Zoning designations generally follow the land use designations established in the Comprehensive Plan.

Figure 6. Lower Clarks Creek

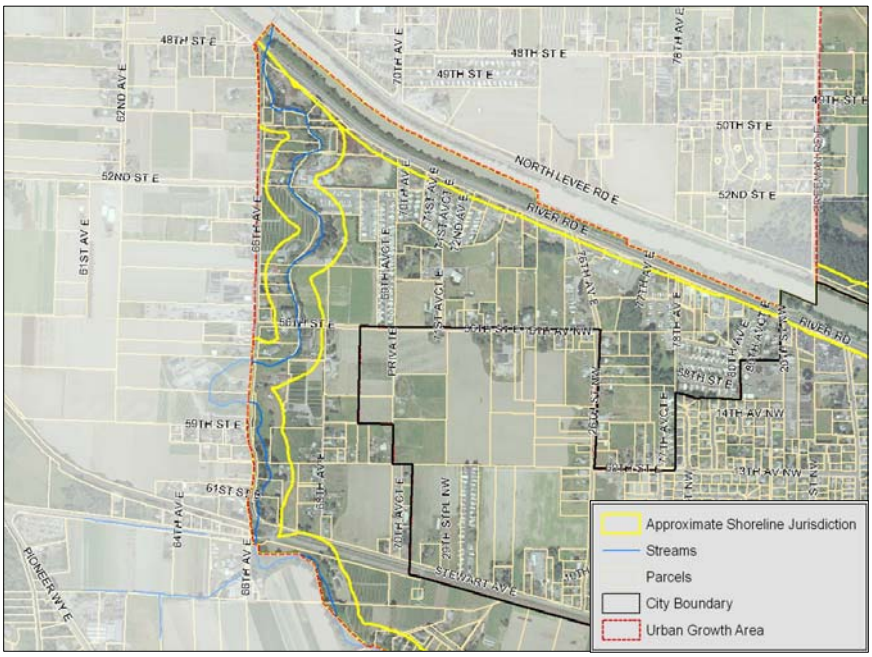

Figure 6. Lower Clarks Creek. Areas of planned transition in Clarks Creek shoreline jurisdiction are in the lower reaches near the Puyallup River. A development currently under construction called The Lakes Development is located in close proximity to the shoreline jurisdiction, east of Clarks Creek. The development will convert a large vacant area to multi-family uses.

Figure 7. Clarks Creek – WSU Property

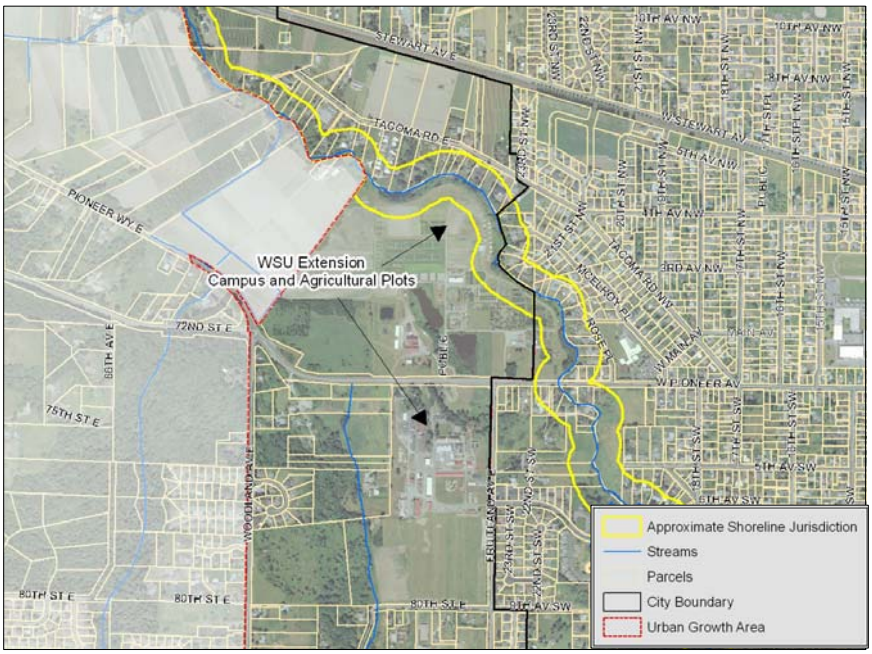

Figure 7. Clarks Creek – WSU Property. There are no immediate plans to add buildings to the WSU campus, which is designated as Public Facilities. Subject to funding, there is an intent to add programs which could require additional buildings. If new buildings are added to the WSU campus they would most likely occur near the existing cluster of buildings located west of Fruitland Avenue East, outside the shoreline jurisdiction. WSU is currently working with the City, Pierce County, the Puyallup Tribe, and Friends of Clarks Creek on design of shoreline restoration plantings over nearly 3,500 linear feet along Clarks Creek (Erwin, 2007).

In contrast with the lower reach of Clarks Creek, the upper reach is less likely to be developed. The upper reaches include the City-owned Clarks Creek Park, a 55-acre site. Directly south and contiguous is stated-owned Clarks Creek Watershed, a 113-acre site.

Figure 8. Upper Clarks Creek

Figure 8. Upper Clarks Creek. The Clarks Creek Watershed is owned and managed by WDFW to protect the watershed upstream of the state fish hatchery. The property surrounds Clarks Creek headwaters at Maplewood Springs, which is also a source of drinking water. The City is interested in exploring options and opportunities for establishing long term protection of the watershed and its headwaters.

In summary, the City's shoreline planning area along the Puyallup River is primarily designated as high-density residential, auto-oriented commercial, business/industrial park, and limited manufacturing/warehouse. Since the predominant types of existing land uses are vacant and agriculture lands (35 percent and 21 percent respectively) it is expected that there will be more intensive land uses near the shoreline over time. The City's shoreline planning area along Clarks Creek is designated as Low Density, Medium Density and Rural Buffer Residential, Open Space/Public Park, and Public Facility. These designations are in large part consistent with the existing land uses. Future development would likely include new single family residential development in the lower reaches.

Changes to Shoreline Environment Designations

The City of Puyallup first adopted its SMP in 1974 with a subsequent major update in 1987. The SMP provides policies and regulations to govern development and other activities in the City's shorelines and regulates shoreline development by requiring shoreline permits consistent with the Shoreline Management Act and the SMP.

Local SMPs establish a system to classify shoreline areas into specific "environment designations." The purpose of shoreline environment designations is to provide a uniform basis for applying policies and use regulations within distinctly different shoreline areas. In a regulatory context, shoreline environment designations provide the governing policy and regulations that apply to land within the SMP jurisdiction. Portions of individual parcels that are outside SMP jurisdiction are governed by zoning and other applicable land use regulations. Generally, environment designations should be based on biological and physical characteristics of the shoreline, existing and planned development patterns, and a community's vision or objectives for its future development.

The environment designations in the City's current SMP were developed based on the shoreline's natural characteristics and development patterns at that time (City of Puyallup, 1987). The City included three shoreline environment designations consistent with state guidelines in place at that time: Urban, Rural and Conservancy. Two designations (Rural and Urban) are applied to portions of the Puyallup River and Clarks Creek within the

City's municipal boundaries. Conservancy was applied to Clarks Creek on the upper reaches of the stream near Maplewood Springs.

The proposed SMP provides a new system of environment designations in compliance with State guidelines (WAC 173-26-211). The proposed environment designations include Urban Conservancy for areas of the City that have both designated critical areas and existing or planned urban development that is compatible with maintaining or restoring ecological functions; and Natural which is designated for the purpose of protecting those shoreline areas that are relatively free of human influence and/or that include intact or minimally degraded shoreline functions and processes. The new system applies designation criteria and management policies consistently across areas with similar current and planned land uses and resource characteristics. The new shoreline designations also pre-plan for future annexation areas so that future inconsistencies in shoreline development are avoided. The proposed designations are consistent with both the existing land use pattern and the Comprehensive Plan future land use designations and provide for more uniform management of similar shoreline areas. Uniform management of critical areas such as wetlands, fish and wildlife habitat areas, and frequently flooded areas is accomplished through the integration and implementation of the City's critical area regulations in the SMP (CAO, Ordinance No. 2859, adopted September 21, 2006, Puyallup Municipal Code (PMC) 21.06). Regulation of uses and shoreline modifications associated with each designation is generally most restrictive or protective for Natural areas, followed by Clarks Creek Urban Conservancy and then Puyallup Urban Conservancy.

The existing and proposed shoreline environment designations are shown on Attachment 1. Generally, the proposed changes to environment designations (from the existing 1987 SMP to the proposed SMP) can be summarized as:

- Areas designated Conservancy on Clarks Creek became Natural;
- Areas designated Rural and Urban on the Puyallup River become Puyallup River Urban Conservancy;
- Areas designated Rural and Urban on Clarks Creek become Clarks Creek Urban Conservancy.

Changes to Development Standards and Use Regulations

The proposed SMP offers several changes to the development regulations that encourage shoreline conservation and prohibit activities that would cause adverse impact to shoreline functions and processes. One of the most significant changes is integration of critical areas regulations (PMC 21.06). Under the proposed SMP, standards and regulations for designated critical areas (e.g., wetlands, fish and wildlife habitat areas, critical aquifer recharge areas, geologically hazardous areas, and frequently flooded areas) that are physically located in the shoreline jurisdiction would apply to all shoreline uses and development. The CAO standards provide many provisions to protect the Puyallup River, Clarks Creek, associated wetlands, and adjacent upland areas. The CAO standards not only require a 150-foot buffer from the Puyallup River and Clarks Creek but also require native vegetation within the buffer to be retained or replanted if inadequate. The minimum buffer requirement currently established by the CAO provides a uniform standard in contrast with the existing SMP which has a range of shoreline buffer widths (from 20 to 150 feet) based on the type of use proposed. Also, the existing SMP does not require buffers to be re-vegetated.

Another change is the requirement of environmental impact mitigation where unavoidable impacts to shoreline ecological functions would occur as a result of allowed uses or development under the SMP. Consistent with state guidelines (WAC 173-26-201(2)(c)), the proposed SMP requires mitigation measures where impacts from allowed uses and development are unavoidable to achieve the "no net loss" of ecological functions standard.

The proposed changes to use regulations are, in general, more protective than the existing SMP. There are less uses permitted in the proposed Natural shoreline designation than the existing Conservancy shoreline designation for the upper reaches of Clarks Creek. The following uses are no longer permitted in the proposed Natural designation: residential development, transportation facilities, dredging, fill, flood control structures and shoreline stabilization developments. Such uses are prohibited in order to protect an area that has largely intact shoreline ecological functions. The only type of utility development permitted in the Natural shoreline designation is public drinking water supply facilities. This is more restrictive than the existing SMP which allows buried electric transmission lines, and public or private water distribution/transmission lines facilities.

The existing SMP allows dredging for a wide variety of purposes including improving public recreation, public safety or habitat; creating a public use or recreation area; or removing silt or sediment deposited by severe and unusual erosion or due to bulkhead on nearby properties. The proposed SMP only allows dredging for flood management when addressed as part of a comprehensive management plan or for habitat enhancement/restoration purposes.

The proposed development regulations for flood control structures and shoreline stabilization are more protective than the existing SMP. Unlike the existing SMP, new lots and site development must be configured to avoid the need for new flood control structures or shoreline stabilization to the greatest extent possible. When new flood control measures are needed, non-structural methods must be considered and utilized whenever feasible. Bioengineering or "soft-shore" erosion control techniques are the only shoreline stabilization methods allowed for new development.

The proposed SMP establishes a preference for transportation facilities to be located outside of the shoreline jurisdiction. Proponents would need to provide an analysis of alternative alignments or routes, modes, or demand management, including alignments or routes outside shoreline jurisdiction. The width of bridges or roadways crossing water bodies is restricted to 30 feet. The existing SMP does not provide width restrictions for road crossings.

Visual or physical public access to the shoreline for certain new developments, including commercial and industrial developments and subdivisions of more than four parcels, is required in the proposed SMP. Public access must include a dedication of land or a physical improvement in the form of a walkway, trail bikeway, corridor, viewpoint, park or other area that provides a view of and/or physical approach to the shoreline. A fee-in-lieu is suggested in certain cases. These requirements are a change from the existing SMP which has policies encouraging public access but no specific regulations.

To address stormwater runoff and water quality, the proposed SMP requires shoreline uses and activities to be designed and constructed using best management practices (such as catch basins, oil/water separators). A utility rate discount may be available for properties which employ low impact development techniques to manage and treat stormwater runoff, such as vegetated swales and pervious pavement. Hazardous or toxic materials are not permitted to be stored within the shoreline jurisdiction. No similar regulations are present in the existing SMP.

Restoration Planning

Consistent with state guidelines (WAC 173-26-186), the proposed SMP includes a new section of goals, policies, and development standards addressing shoreline restoration within Puyallup. The goals and policies for restoration have been modified to acknowledge that the City's intent is to meet the "no net loss" standard, and result in an overall improvement to the condition of the habitat and resources within the shoreline jurisdiction of the City over time. Standards contained in the CAO regulations would require the shoreline buffer width to be increased or the buffer to be planted if there is no existing native vegetation community at the time of the development. This would ensure that the shoreline functions and values are adequately protected.

In addition to goals and policies for restoration, the draft SMP Restoration Plan (ESA Adolfson, 2007) represents the shoreline restoration element of the SMP. The plan identifies opportunities for restoration activities or efforts that include programmatic opportunities (such as stormwater management techniques city-wide to address water quality), site-specific opportunities (such as levee setbacks, bulkhead replacements, or vegetation enhancement projects on individual properties), regional plans and policies for restoration, and potential funding and partnership opportunities. The SMP's restoration planning is focused on areas where shoreline functions have been degraded by past development activities. The areas with impaired functions were identified in the City's Shoreline Inventory and Characterization. Recognizing that much impairment to the Puyallup River's shoreline processes and functions are the result of watershed scale activities beyond the City's control, the implementation of the Restoration Plan will improve shoreline ecological functions in the city over time. The City may have better opportunities to address restoration on Clarks Creek. The overall system is smaller and much of the stream and contributing drainage basin is in the city or UGA. The nature and scale of alterations to the system are also focused more at the reach scale when compared to the Puyallup River.

Beneficial Effects of Any Established Regulatory Programs under Other Local, State, and Federal Laws

A variety of other regulatory programs, plans, and policies work in concert with the City's SMP to manage shoreline resources and regulate development near the shoreline. The City's Comprehensive Plan establishes the general land use pattern and vision of growth and development the City has adopted for areas both inside and outside the shoreline jurisdiction. Various sections of the PMC are relevant to shoreline management, such as zoning (PMC Title 20), stormwater management (PMC 14.26), and flood damage protection (PMC 21.07). The City's development standards and use regulations for critical areas (PMC 21.06) are particularly relevant to the City's SMP. Designated critical areas are found throughout the City's shoreline jurisdiction, including wetlands, fish and wildlife habitat areas, critical aquifer recharge areas, geologically hazardous areas, and frequently flooded areas. As noted above, standards and regulations in the critical areas regulations are now integrated in the proposed SMP.

A number of state and federal agencies may have jurisdiction over land or natural elements in the City's shoreline jurisdiction. Local development proposals most commonly trigger requirements for state or federal permits when: they impact wetlands or streams; potentially affect fish and wildlife listed under the federal Endangered Species Act (ESA); result in over one acre of clearing and grading; or affect the floodplain or floodway. As with local requirements, state and federal regulations may apply throughout the city, but regulated resources are common within the City's shoreline jurisdiction. The state and federal regulations affecting shoreline-related resources include, but are not limited to:

Endangered Species Act (ESA): The federal ESA addresses the protection and recovery of federally listed species. The ESA is jointly administered by the National Oceanic and Atmospheric Administration (NOAA) Fisheries (formerly referred to as the National Marine Fisheries Service), and the United States Fish and Wildlife Service (USFWS).

Clean Water Act (CWA): The federal CWA requires states to set standards for the protection of water quality for various parameters, and it regulates excavation and dredging in waters of the U.S., including wetlands. Certain activities affecting wetlands in the City's shoreline jurisdiction or work in the adjacent rivers may require a permit from the U.S. Army Corps of Engineers and/or Washington State Department of Ecology under Section 404 and Section 401 of the CWA, respectively.

Hydraulic Project Approval (HPA): WDFW regulates activities that use, divert, obstruct, or change the natural flow of the beds or banks of waters of the state and may affect fish habitat. Projects in the shoreline jurisdiction requiring construction below the ordinary high water mark of streams in the city could require an HPA from WDFW. Projects creating new impervious surface that could substantially increase stormwater runoff to waters of the state may also require approval.

National Pollutant Discharge Elimination System (NPDES): Ecology regulates activities that result in wastewater discharges to surface water from industrial facilities or municipal wastewater treatment plants. NPDES permits are also required for stormwater discharges from industrial facilities, construction sites of one or more acres, and municipal stormwater systems that serve populations of 100,000 or more.

Conclusion

There are opportunities for new commercial, industrial and residential developments along the Puyallup River. These types of developments are expected to occur on lands currently vacant or utilized for agriculture. It is not expected that such developments would be water-dependent and, therefore would have to meet the minimum 150 foot setback from the ordinary high water mark. The development and use patterns along Clarks Creek shoreline are well established with limited opportunities for new development. Therefore, change within the Clarks Creek shoreline will primarily be the result of redevelopment activities. Additional buildings may be added to the WSU Campus outside of the shoreline jurisdiction and new single family development is expected in the lower reach. The system of shoreline environment designations and use regulations in the proposed SMP is consistent with the objective of protecting existing ecological resources and implementing shoreline restoration while accommodating the land use vision planned for in the City's comprehensive plan, zoning and other long-range planning documents.

The proposed SMP provides a new system of shoreline environment designations that establishes more uniform management of the City's shoreline. The updated development standards and regulation of shoreline modifications provides more protection for shoreline processes by being more restrictive of activities that would result in adverse impacts to the shoreline environment. The restoration planning effort outlined in the proposed SMP provides the City with opportunities to improve or restore ecological functions that have been impaired as a result of past development activities. In addition, the proposed SMP is meant to compliment several city, county, state and federal efforts to protect shoreline functions and values.

In summary:

- The majority of the Puyallup River shoreline is designated high-density residential, auto-oriented commercial, business/industrial park, and limited manufacturing/warehouse. The proposed shoreline environment designation along the Puyallup River is Puyallup Urban Conservancy. Anticipated development would transition this area from less intense to more intense land uses, where existing land use is vacant or agricultural. The majority of Clarks Creek shoreline is designated as Low Density, Medium Density and Rural Buffer Residential, Open Space/Public Park, and Public Facility. The proposed shoreline environment designation is Clarks Creek Urban Conservancy except that WDFW-owned land and portions of Clarks Creek Park is designated as Natural. Future development would likely include new single family residential development in the lower reach. Where allowed, new development along the shorelines would comply with the proposed regulations that are designed to achieve no net loss of ecological functions. Developments would be set back 150 feet to accommodate shoreline buffers unless they are water-dependent, water-oriented, or provide expanded or enhanced public access (via trail extensions or low-intensity public open space).

- Other regulatory measures, most notably the application of Critical Areas Ordinance regulations in the shoreline, are designed to protect shoreline resources. In the event allowed development or redevelopment resulted in unavoidable impacts to shoreline ecological functions, mitigation would be required to provide equivalent or better ecological functions. These measures ensure the "no net loss" standard would be met under the proposed SMP.

- There are a number of opportunities for conservation and restoration actions in the city to address flooding, shoreline armoring, water quality, and habitat. The City would need to partner with other agencies to implement flood related restoration actions along the Puyallup River. Implementing stormwater management techniques city-wide would help address water quality. Levee setbacks, improved methods to replace bulkheads, or vegetation enhancement projects can be implemented on individual properties to help address shoreline armoring and habitat issues.

Based on assessment of these factors, the cumulative actions taken over time in accordance with the proposed SMP are not likely to result in a net loss of shoreline ecological functions from existing baseline conditions. In concert with implementation of restoration actions in the city, the regulatory provisions of the proposed SMP would serve to improve the overall condition of shoreline resources in the city.

References

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ATTACHMENT 1.
EXISTING AND PROPOSED
SHORELINE ENVIRONMENT DESIGNATIONS

Puyallup River - Urban Conservancy

Clarks Creek - Urban Conservancy

Clarks Creek - Natural
(left bank upstream of 12th Ave SW; right bank upstream of 15th Ave SW)

City of Puyallup

Puyallup River

White River

Clarks Creek

Meeker Ditch

Maplewood Springs

Silver Creek

Wildwood Creek

Deer Creek

Woodland Creek

Diru Creek

PUYALLUP SHORELINE MASTER PROGRAM

CZM Grant No. G0500027

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Proposed Shoreline Environment Designations

- Puyallup River - Urban Conservancy
- Clarks Creek - Urban Conservancy
- Clarks Creek - Natural

1987 Shoreline Environment Designations

- Conservancy
- Rural
- Urban

- City Boundary
- Urban Growth Area
- Waterbodies
- Streams
- Parcels

0 1,500 3,000 Feet

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SOURCE: Pierce County GIS, 2004; City of Puyallup GIS, 2004

ESA Adolfson

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