

**Shoreline Inventory and Characterization Report
Skamania County, Washington**

**Appendix B
Preliminary Shoreline Jurisdiction Maps and Letter**

May 6, 2015

Michelle McConnell, Shoreline Planner
SEA Program/Southwest Regional Office
Washington State Department of Ecology
PO Box 47775
Olympia, WA 98504

Dear Ms. McConnell:

Skamania County, in collaboration with BergerABAM, has developed the attached maps of the proposed preliminary minimum and optional shoreline jurisdiction for the County for Task 4 of the County's scope of work with the Department of Ecology (Ecology). Attachment 1 includes an index map of the whole County plus additional sheets of the four quadrants at a finer level of detail showing streams, rivers, lakes, and associated wetlands which are shorelines of the state. Associated wetlands have not historically been identified as shorelines in the Skamania County Shoreline Management Master Program (SMMP) or included in previous shoreline boundary mapping. Attachment 2 identifies "shorelines of statewide significance."

The first step in updating the map of shoreline jurisdiction was to review the shoreline and associated wetlands definitions found in RCW 90.58.030, related guidance found in Chapter 173-22 WAC, and guidance found in Chapter 5 of Ecology's Shoreline Master Program (SMP) Handbook. The following discussion describes the process used to map preliminary Skamania County shoreline jurisdiction to be refined during later SMP tasks.

1.0 STATUTORY MINIMUM JURISDICTION

1.1 General Applicability

As relevant to Skamania County, the Shoreline Management Act (SMA) generally applies to all rivers and streams with mean annual flow over 20 cubic feet per second (cfs); lakes and reservoirs exceeding 20 acres; wetlands associated with these areas; and lands extending landward 200 feet from the ordinary high water mark (OHWM) or 200 feet from the floodway along streams, where floodway information is available.

1.2 Ordinary High Water Mark

Since there is no available data source for establishing the precise location of OHWM, the County used Ecology's "SMA – Streams and rivers – points", "SMA – Streams and rivers – arcs", "SMA – Adopted arcs", "Suggested Shoreline Points", "Suggested Shoreline Arcs," "Suggested Shorelines Polygons", and the Department of Natural Resource's (DNR) "Hydrography" layers to depict an approximation of shoreline jurisdictional waters. A 200-foot offset was applied from the edge of these waterbodies as an approximation of the OHWM. In

some instances, however, only stream centerline data – not stream polygons - was available. For these streams, the 200-foot offset was applied from the centerline as an approximation of shoreline jurisdiction. Ecology does not require the preliminary SMP jurisdiction map to show the precise location of the OHWM. The statutory definition of the OHWM will be included in the updated Skamania County SMP. The precise location of the OHWM and adjacent shorelands will have to be determined on a case-by-case basis in the County as property owners file development applications (see SMP Handbook, Chapter 5, page 2).

1.3 Shorelines of Statewide Significance

RCW 90.58.030(2)(f) defines shorelines of statewide significance. Relevant definitions for Skamania County include:

- “Those lakes, whether natural, artificial, or a combination thereof, with a surface acreage of one thousand acres or more measured at the ordinary high water mark”
- “Those natural rivers or segments thereof as follows: any west of the crest of the Cascade range downstream of a point where the mean annual flow is measured at one thousand cubic feet per second or more” and “any east of the crest of the Cascade range downstream of a point where the annual flow is measured at two hundred cubic feet per second or more.”

Under these definitions and using Ecology’s “Suggested Shoreline Arcs” and “Suggested Shoreline Polygon” data layers, shorelines of statewide significance in Skamania County include Swift Reservoir, Spirit Lake, the Columbia River, and portions of Lava Creek, Trout Lake Creek, White Salmon River, Little White Salmon River, Wind River, and Lewis River (see Attachment 2).

1.4 Associated Wetlands

The County used its wetland database to determine associated wetlands. The County wetland data was originally generated by the U.S. Fish and Wildlife Service’s National Wetland Inventory (NWI) database. Ecology guidance states that an entire wetland is associated if any part of it lies within the area 200 feet landward of the OHWM of a state shoreline. Further guidance states that wetlands that are hydraulically connected to a shoreline are also considered to be associated. Wetlands that are separated by an obvious topographic break from the shoreline are not associated, provided they are outside the shoreland zone and provided that the break is not an artificial feature such as a berm or road. To determine the wetlands that were associated, the County and BergerABAM used GIS to select the wetlands that were partially or fully within the shoreland zone and/or within the 100-year floodplain 200 feet from the floodway or OHWM, or were shown as having a surface hydrologic connection to the shoreland area (stream or drainage connectivity to the shoreland).

1.5 Flood Hazard Areas

Under RCW 90.58.030, minimum shoreline jurisdiction also includes the floodway and contiguous floodplain extending 200 feet landward from the floodway. The floodway may be identified in one of two ways: (1) using FEMA FIRM maps or (2) using the SMA floodway as defined in RCW 90.58.030(2)(b)(ii). The County and BergerABAM reviewed FEMA flood insurance rate maps (FIRM) for Skamania County, but floodway information was not available. In addition, no maps are available which show the SMA floodway. Thus, the minimum jurisdiction maps rely on the OHWM to map shorelands as directed by Ecology in Chapter 5 of the SMP Handbook, page 20.

1.6 Federal Lands and Columbia River Gorge National Scenic Area

A large portion of Skamania County is under federal ownership (U.S. Forest Service or tribal lands), or is in the Columbia River Gorge National Scenic Area (NSA) as shown on Attachment 1. Chapter 5 of Ecology's SMP Handbook indicates that Ecology assumes federal lands are within shoreline jurisdiction unless a local government provides documentation of exclusive federal jurisdiction. The County has approached the Forest Service to begin determining whether that agency's land in the Gifford Pinchot National Forest is under sole federal jurisdiction, but at this stage, the County has mapped preliminary shoreline jurisdiction as applying to all federal lands and to the NSA. Per Task 4 of the County-Ecology scope of work, "the shoreline jurisdiction area will be refined during later tasks to identify and eliminate shorelines from the local SMP that are under sole jurisdiction of federal or tribal governments."

2.0 OPTIONAL SHORELINE JURISDICTION

In accordance, with RCW 90.58.030(2)(d), local jurisdictions may also include additional areas within shoreline jurisdiction beyond the statutory minimum. These "optional" shoreline jurisdiction areas may include: (1) all or part of the floodplain beyond the 200-foot mark from the OHWM or floodway; and (2) buffers necessary for the protection of critical areas. Local jurisdictions may choose to regulate some or all of the above described areas beyond the statutory minimum jurisdiction. If the entire floodplain and all critical area buffers are included in shoreline jurisdiction, this is the statutory "maximum area" to which the SMP would apply. Attachment 1 shows the optional jurisdiction areas (entire 100-year floodplain).

The County has not yet determined whether it will choose to extend shoreline jurisdiction into optional jurisdiction areas.

3.0 CONCLUSION

In summary, minimum shoreline jurisdiction in Skamania County applies to the following:

- Streams and rivers of 20 cfs or greater;
- Lakes and reservoirs 20 surface acres or greater in size;

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- Associated wetlands, which are those located entirely or partly within minimum shoreline jurisdiction or are hydraulically connected to the shoreline waterbody.
- Shorelands defined as areas extending 200 feet from the OHWM of stream, rivers, lakes, and reservoirs

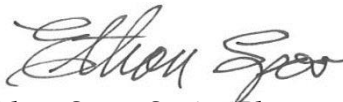
At the County's discretion, shoreline jurisdiction may extend to any or all of the following areas:

- All or part of the floodplain extending beyond 200 feet from the OHWM
- Critical areas and their buffers which cross the SMA jurisdictional limit

The County is working to confirm which lands under federal ownership are within sole federal jurisdiction. The preliminary shoreline jurisdiction map will be revised pending the determination of sole federal jurisdiction and once better data is available to represent approximate OHWM in those areas where stream centerline is the only currently available data.

Please let us know if you have any questions or comments on this letter or the preliminary shoreline jurisdiction maps.

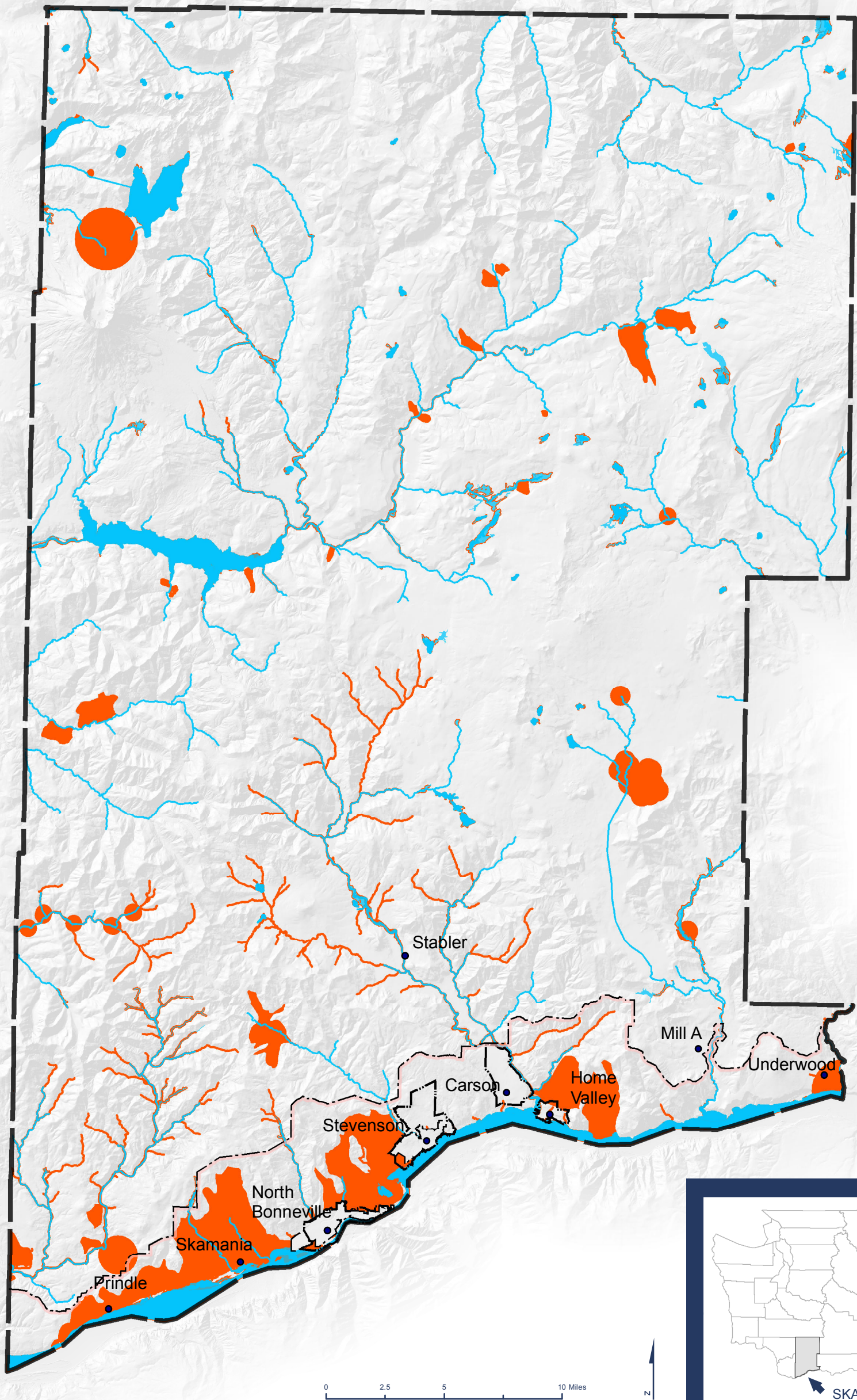
Sincerely,

A handwritten signature in cursive script, appearing to read "Ethan Spoo".

Ethan Spoo, Senior Planner
BergerABAM

ATTACHMENTS

- Attachment 1: Preliminary Shoreline Jurisdiction Maps
- Attachment 2: Shorelines of Statewide Significance Map



NARRATIVE:

METHODS:

SHORELINES DISCLAIMER: Shoreline jurisdiction boundaries depicted on this map are approximate. They have not been formally delineated or surveyed and are for planning purposes only. Additional site-specific evaluation may be needed to confirm/verify information shown on this map.

ASSUMPTION: This map depicts preliminary shoreline jurisdiction for Skamania County in its entirety, while maintaining an assumption that all federally owned land and all areas within the Col. River Gorge National Scenic Area outside of Urban Areas are likely to fall under sole federal jurisdiction.

LEGEND:

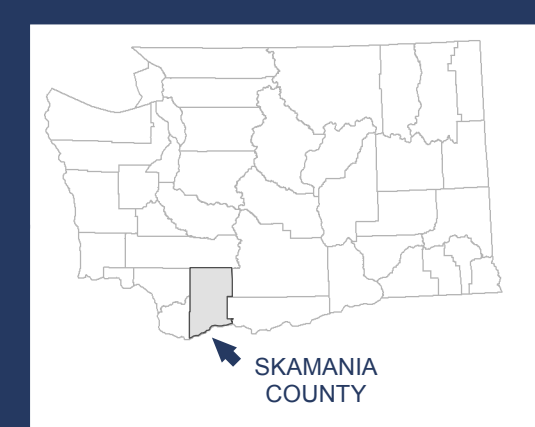
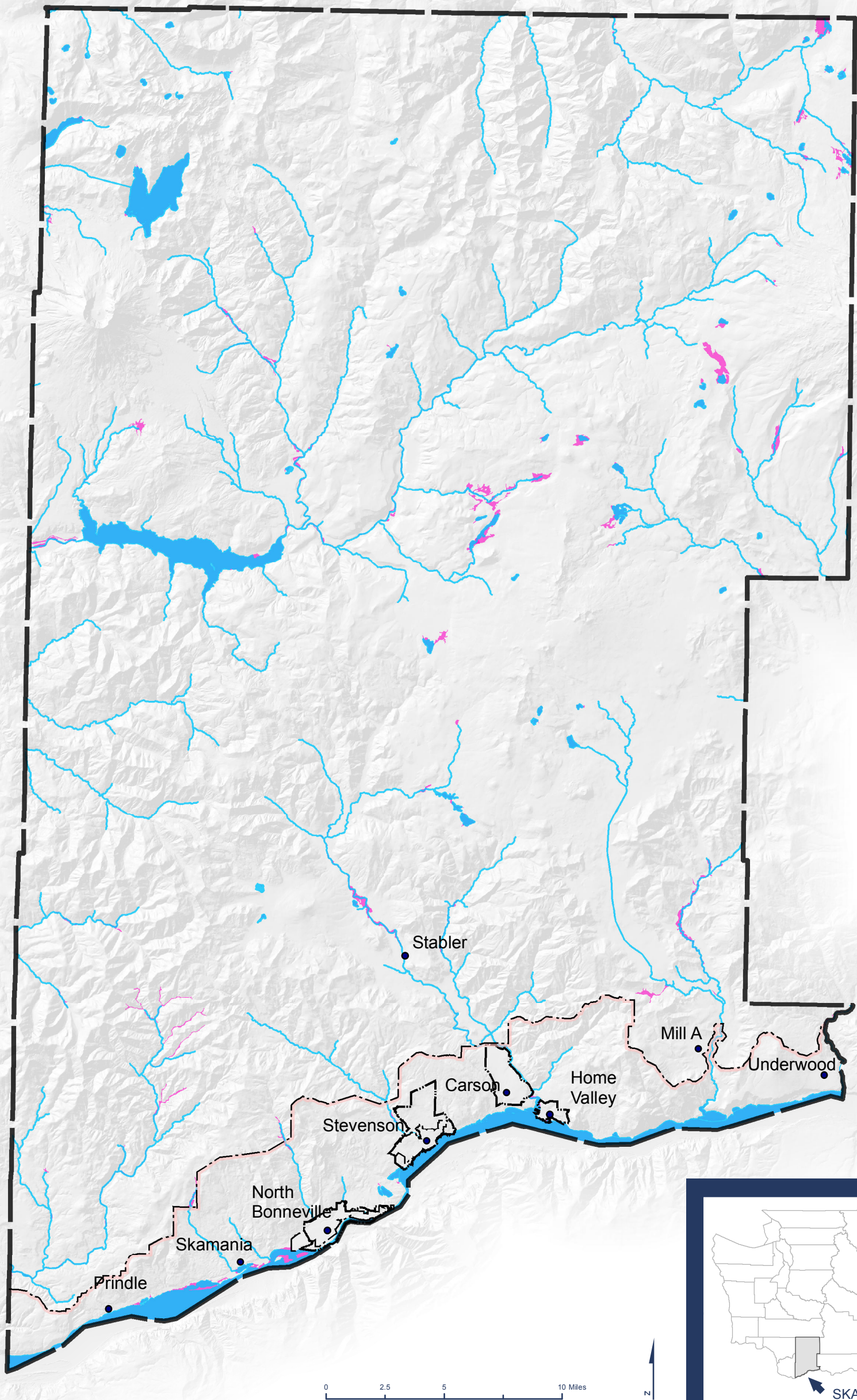
-  Preliminary Shoreline Jurisdiction (Minimum Area)
-  Preliminary Shoreline Jurisdiction (Maximum Area)
-  Skamania County boundary
-  Nat'l Scenic Area Bndy
-  Urban Area Bndy
-  City Limits



SKAMANIA COUNTY

DISCLAIMER: This map product was prepared by Skamania County and is for information purposes only. It may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

**PRELIMINARY
MAXIMUM
SHORELINE
JURISDICTION**



NARRATIVE:

METHODS: GIS datasets downloaded from WA Dept of Ecology representing currently adopted and suggested shoreline streams and waterbodies were merged to generate a dataset that includes all features from both datasets. An in-house Skamania County GIS dataset of the approximate Columbia River OHWM was used to represent the Columbia River. All described data were combined and a buffer was generated for areas within 200 feet of the water feature. The area of Northwestern Lake as represented in DOE data was adjusted because the lake no longer exists due to Condit Dam removal. The jurisdiction area was clipped to only areas within Skamania County. Areas within city limits of Stevenson and North Bonneville were removed from the jurisdiction area. The resulting dataset was used to identify NWI wetlands that are associated with the shoreline area.

SHORELINES DISCLAIMER: Shoreline jurisdiction boundaries depicted on this map are approximate. They have not been formally delineated or surveyed and are for planning purposes only. Additional site-specific evaluation may be needed to confirm/verify information shown on this map.

ASSUMPTION: This map depicts preliminary shoreline jurisdiction for Skamania County in its entirety, while maintaining an assumption that all federally owned land and all areas within the Col. River Gorge National Scenic Area outside of Urban Areas are likely to fall under sole federal jurisdiction.

LEGEND:

-  Preliminary Shoreline Jurisdiction (Streams/Lakes)
-  Preliminary Shoreline Jurisdiction (Assoc. Wetlands)
-  Skamania County boundary
-  Nat'l Scenic Area Bndy
-  Urban Area Bndy
-  City Limits



SKAMANIA COUNTY

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**PRELIMINARY
MINIMUM
SHORELINE
JURISDICTION**

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**Appendix C
Channel Migration Zone Analysis for
SMA Streams in Skamania County**

MEMORANDUM

To: Skamania County SMP Update Team

From: Jay Cook, Hydrogeologist, WA Department of Ecology

Date: May 19, 2016

Subject: Channel migration zone analysis for SMA streams in Skamania County

Provided with this memo is a collection of digital data files (ArcGIS map package) that show the results of a planning-level assessment of channel migration zones completed on behalf of the County for the Shoreline Master Program (SMP) Update.

The GIS map data provided by Ecology include two layers. The first is a line layer of the Planning Level Channel Migration Zone (pCMZ) boundaries. The second is a point layer with comments of notable observations, which is not required for the SMP update but hopefully will provide some useful information.

Please note that the pCMZs within the map package are currently drafts. Skamania County, upon review of the pCMZ map data and this document, may contact Ecology to discuss the delineations and the possibility and protocol for adjustments prior to finalizing.

Understanding the low development pressure in the federally owned lands within Skamania County and to expedite the process of generating pCMZs, the county was divided into two parts – low development potential (federally owned land) and higher development potential (privately held land within the National Forest and privately owned land within the rest of the county). In low-development areas, the pCMZ was auto-generated based on channel confinement and valley width. In the higher-development areas, a standard pCMZ analysis was performed.

Low Potential Development Areas



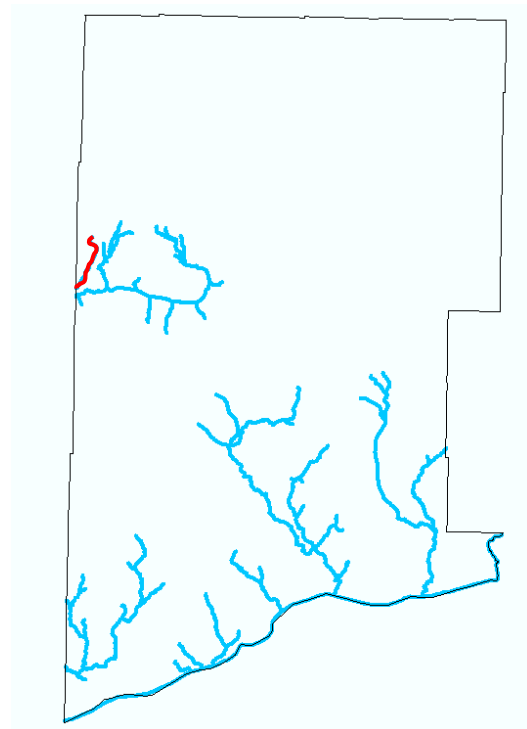
Auto-generated pCMZs

- In GIS, the SMA-jurisdiction streams layer was compared to the CHAMP (Channel Migration Potential) layer. CHAMP layer streams segments, which are present upstream of the 20 cubic feet per second (cfs) regulatory threshold, were trimmed to match the SMA jurisdictional extent. *CHAMP data are described in Ecology Publication No. 15-06-003, "Screening Tools for Identifying Migrating Stream Channels in Western Washington" and are available for public use at the Department of Ecology website.*
- The relative degree of channel confinement, found in the CHAMP dataset, was selected as the most suitable attribute to categorize stream segments for auto-generating pCMZs. Stream segments were divided into two categories: 1) unconfined, and 2) confined and moderately confined. The Screening Tools publication suggests that in confined and moderately confined stream settings, the valley bottom is a reasonable and conservative approximation of the planning level CMZ. The publication does not offer similar guidance for unconfined settings. Thus, the standard pCMZ methodology, outlined in Ecology's publication No. 14-05-025, "Methodology for Delineating Planning Level Channel Migration Zones", was consulted to aid in appropriately locating pCMZs. The auto-generated pCMZs were assigned as follows:
 - o Confined and moderately confined segments: pCMZ = Valley Bottom Width (attribute within CHAMP data layer).
 - o Unconfined segments: pCMZ = Valley Bottom Width plus 500 feet. Rationale for this approach is as follows: Ecology's pCMZ publication prescribes first delineating the "Modern Valley Bottom" (MVB), followed by situating the pCMZ at some distance relative to the MVB. In settings with very wide valleys relative to the stream, the pCMZ may be placed streamward of the MVB. In settings where the stream is likely to impinge on the valley wall, the pCMZ may be placed outside of the MVB to recognize potential erosion due to undercutting of valley walls. The placement of the pCMZ when outside of the MVB for any segment is controlled by several factors, including the probability of impingement against valley walls, erodibility of valley wall materials, and height of the valley wall. In settings with low erodibility and high valley walls, as generally expected in northern Skamania County, the methodology suggests the pCMZ be placed up to one channel width outside the MVB. In order to assign a common, protective "buffer" distance outside of the valley bottom for all streams in the low-development area, the area stream with the widest active channel, Muddy River, was evaluated. The active channel for Muddy River reaches more than 1,000 feet in width in a few places. While this appears to be atypically wide for streams in the general area, it was a consideration in determining the common pCMZ placement for unconfined stream segments. Considering the Muddy River channel, the hydrologic and geologic setting, and that no migration analysis was performed, it was determined that a reasonable and protective pCMZ for all unconfined stream segments is 500 feet outside of the valley bottom defined in the CHAMP dataset
- It should be noted that pCMZ areas delineated in this fashion are very coarse, and depending on actual stream location versus stream-location data in GIS, the delineated pCMZ area could be significantly misaligned. **Skamania County should narratively explain in their SMP update that**

proposed development near (inside or outside of) these auto-generated pCMZs should first be analyzed on the ground to determine if the project is actually within the valley bottom for confined stream segments or within about 500 feet of the valley bottom for unconfined stream segments. Additionally, the SMP update should note that proposed developments within the physical, on-the-ground boundaries will require a site-specific, detailed CMZ analysis. Ecology Publication #03-06-027 “A Framework for Delineating Channel Migration Zones” provides a methodology for such a detailed analysis that should be conducted by a qualified professional.

- There are 5 streams/stream segments within the Low Development Areas that fall under SMA jurisdiction but are not in the CHAMP stream dataset. Three are in the northwest corner of the county – South Coldwater Creek headwaters, North Fork Toutle River, and Studebaker Creek. Two are in the eastern portion of the county – Trout Lake Creek and the upper White Salmon River. Absent CHAMP data, valley width and confinement information, the valley bottom was hand-digitized using available data (USGS Topographic Information from ESRI, 10-m DEM, and Aerial Photos), and the pCMZ was set back 500 feet from the mapped valley bottom.
 - o The upstream portion of South Coldwater Creek is the outfall of Spirit Lake and appears to travel through a tunnel, thus no pCMZ was generated for that section.
- The pCMZ delineation lines within the GIS package overlap at many stream confluences. Where this occurs, the most protective (i.e., farthest from the stream) should be used.

Higher Potential Development Areas



- Standard pCMZ analyses were performed using available desktop methods.
- Note that all mapped CMZs are “Planning-Level”:
 - o Fairly abbreviated process, relying on visible landforms, channel characteristics, valley characteristics, historic migration, and soils/geology. Channel migration rates were not analyzed. Considering the abbreviated nature of the analysis, the pCMZs are relatively conservative (wide). More precise or narrower CMZs could be generated, but a more detailed analysis would require significantly more time and costs.
 - o In many cases, the pCMZ boundary is above the valley bottom onto valley walls as described in the previous section.
 - o For all streams, the “natural” pCMZ was mapped without regard for man-made structures such as levees and roads that may actually limit migration.
- LIDAR available – Lower White Salmon River – available LIDAR data were utilized to generate the pCMZ following the protocol outlined in Ecology’s Planning Level CMZ publication, referenced above.
- No other streams within the county had significant LIDAR coverage. Absent high-resolution data, ten-meter resolution Digital Elevation Model (DEM) data were used to analyze all other streams. Recognizing coarseness of the data and in order to be protective, the pCMZs were intentionally placed slightly farther from the streams than if LIDAR data were available. Relative Water Surface Elevations (RWSE) were produced for all stream segments using the 10-meter DEM data. The RWSEs were used to aid in visibly locating the preliminary pCMZ or to create a contour (5-10 meters) above the water surface to approximate the valley bottom or a reasonable zone above and outward from the active stream. Once generated, the preliminary pCMZ or the contour was manually adjusted (either streamward or landward) based on historic orthophotos, topographic information, and geologic/soils information. Again, protocol from Ecology’s pCMZ document was followed.
- Note, the unnamed stream in red in the map above was not delineated. It appears to be a mistake within the SMA jurisdiction GIS dataset. The stream is not readily evident in orthophotos or USGS topo maps.

Columbia River

Understanding that the Columbia River has little tendency to migrate and in being consistent with previous CMZ assessments, it was decided to use the existing FEMA 100-year flood zone delineation as the pCMZ. The most current digital flood-zone data available for Skamania County are the FEMA Q3 data, which often do not project well in GIS. This problem, which results in the 100-year flood delineation not aligning properly with the river and adjacent landforms, was noted during assessment of the Q3 data for the Columbia River.

The Columbia River pCMZ delineation presented by Ecology for Skamania County should be recognized in the SMP update as imprecise and should be used only in an advisory capacity. Project-level decisions should utilize existing Flood Insurance Study maps and information and/or more detailed, site-specific delineations.

**Shoreline Inventory and Characterization Report
Skamania County, Washington**

**Appendix D
General and NSA Zone Land Use Conflicts**

Because no existing detailed land use analysis was available, the shoreline use analysis was conducted by examining the County's Comprehensive Plan (Skamania County, 2007a) and subarea plans, the Port of Skamania County's (the Port) Comprehensive Scheme of Harbor Improvements (Port, 2013), as well as the Skamania County Economic Development Council's (SCEDC) 2003 Community Action Plan Update (Skamania County EDC, 2003). Summaries of the plans are provided below.

County Plans and Codes

Skamania County regulations are anchored by the County comprehensive plan and subarea plans, which are implemented by the County's Zoning and Critical Areas Ordinances, and NSA Regulations. Each of these documents and their effect on the demand for conflicting shoreline uses is discussed below.

Skamania County Comprehensive Plan

The Skamania County Comprehensive Plan is used as a tool to broadly define the future location and mix of land uses in the County. Because Skamania County is a non-GMA County, it is not required to adopt and update its comprehensive plan but last did so in 2007. "Since the initial adoption of the 1977 Comprehensive Plan, communities have changed due to population growth, new residential development, the creation of the National Scenic Area, and changes in businesses and local industries. The Comprehensive Plan was updated to reflect these changing conditions and to reassess population trends" (Skamania County, 2007a)

In general, the distribution of land uses outlined in the Comprehensive Plan are concentrated in the southern region of the County, and more particularly in the subareas identified in the sections below. Shorelines that are already developed in South Skamania County and are likely to continue to undergo new development as referenced above, include the Washougal River, Canyon Creek, the Washougal River West Fork; Woody's Lake, Duncan Creek, Ashes Lake, Wauna Lake, Wind River, Panther Creek, Muddy Creek, and Bear Creek, and along the White Salmon and Little White Salmon Rivers in east County. Potential development along these shorelines generally consists of high and low density residential, commercial, industrial, and open space as shown on Map 09 in the Map Portfolio in Appendix A.

The County's Comprehensive Plan provides an overall population growth estimate for the 20-year period beginning in 2007, but does not provide analysis of demand for specific uses, nor was the comprehensive plan population growth allocated across different uses. Of the subarea plans, the West End (Skamania County, 2007b) and Swift Subarea Plans (Skamania County, 2007c) contain population projections but, as with the Comprehensive Plan, do not project demand for specific types of uses.

According to the Comprehensive Plan, "the Washington State Office of Financial Management (OFM) estimates that Countywide (including the cities of Stevenson and North Bonneville), the County's population will increase by approximately 4,903 people by the year 2025. Skamania County's growth rate is projected at 1.6 percent annually until the year 2025" (Skamania County, 2007a). Consistent with historical trends and the comprehensive plan, this growth will primarily be accommodated in south County and subareas.

Carson Subarea Plan

The Carson Subarea Plan was developed to provide tailored land use regulations to a unique part of Skamania County. The Carson Subarea is a Gorge Urban Area, which consists of a larger density of residential and commercial structures than can be found throughout most of unincorporated Skamania

County. In 1995, a subarea plan was developed and passed into law, to accommodate the unique characteristics of this area.

Land uses within Carson fall within four different categories: residential, commercial, industrial, or destination resort. A majority of the subarea is composed of residential land uses, primarily on the north and south ends. Commercial land uses can be found along a vertical strip located centrally within the subarea. Additionally, there is a small industrial area near the northeast portion of the subarea, and destination resort in the south east.

One shoreline water body – the Wind River – is within the vicinity of the Carson Subarea. The Wind River is located just east, and adjacent to the Carson Subarea. Designated land uses that are located near or within shoreline jurisdiction of the Wind River include Rural Residential, Rural Estate, High Density Residential, Industrial, and Destination Resort.

Because there are no population projections unique to the Carson Subarea, for the purposes of this analysis, it is assumed that Carson will grow at a rate similar to that of the overall County (1.6 percent annually).

West End Subarea

A large number of rezone requests were received by Skamania County in the early 2000's, prompting the County to examine their comprehensive plan. According to the plan, it was determined that "changes were necessary to provide for orderly planned growth that protected the rural character of the West End Community" (Skamania County, 2007b). The result was the development and adoption of the West End Subarea Plan in 2007, which would consist of approximately 67,000 acres or 105 square miles of land located within Skamania County. The focus of the West End Subarea Plan is to provide for the local needs relating to land use, including the protection of natural resources, rural life style and property rights.

Land distribution regulated by the West End Subarea Plan applies to lands located in the southwest portion of the County. The West End Subarea is dominated by West End Commercial Resource Lands and West End Forest Lands in the north portion of the subarea, with Rural Lands, and Neighborhood Commercial Lands in the southwest corner of the subarea.

There are a number of shoreline waterbodies within the West End Subarea. Major water bodies include the Washougal River, Canyon Creek, Wildboy Creek, and Dougan Creek. A majority of the waters regulated by the SMP are bordered by West End Commercial Resource Lands, or West End Forest Lands. However, the Washougal River bisects a relatively developed portion of the subarea that contains Rural Lands and Neighborhood Commercial development.

According to the OFM in July 2004, the West End Subarea included 715 existing residences. "For the purpose of the West End Subarea Plan, it was determined that the current population of the West End Subarea is calculated to be 1,868 people. A review of the building permit records shows that in the West End Subarea, the number of residences has increased an average of twenty-six (26) units each year during the last five years. This represents a 3.9 percent annual increase in the number of residences in the West End Subarea during the last five years" (Skamania County, 2007b).

"Using the actual building permit statistic of 3.9 percent annual increase in the number of residences, the number of residences in the West End Subarea is projected to increase by 868 residences by the end

of 2025, giving the West End Subarea a total of 1,583 residences. In this analysis, the total population of the West End Subarea would be 4,135 people” (Skamania County, 2007b). This demand will likely increase the pressure on Skamania County shorelines for single-family homes, which are a preferred shoreline use provided they are developed consistent with protection of the environment.

Swift Subarea Plan

The purpose of the Swift Subarea Plan (Skamania County, 2007c) is to limit the development in the area to ensure that it remains similar to how it currently was during the plan’s visioning process in 2006 and 2007. The area is not intended to be a focus for future growth. It is a recreational area and an area devoted to providing commercial timber resources.

The Swift Subarea is located in central Skamania County along the County’s western boundary. The subarea consists wholly of commercial resource, and recreational lands, which is consistent with the subarea’s vision. There is a multitude of waterbodies that are regulated by the County’s SMP within the Swift Subarea, including but not limited to, the Swift Reservoir, Lewis River, Muddy River, and Swift Creek. Development along these shorelines consists of Swift Recreational, Mountain Recreational, Swift Forest Lands, or Swift Commerical Resource Lands. Existing recreational uses include vacation homes and cabins, accessory uses, and private boating facilities.

“The Swift Subarea Plan envisions a buildout potential of approximately 1,000 recreational cabins under the proposed land use designations over at least the next 20 years. Included in this buildout number are the existing 339 recreational cabins in the Swift Subarea as of February 2007. The buildout potential of 564 new recreational cabins is appropriate since the Swift Subarea currently does not have the necessary infrastructure and county services to accommodate full-time recreational growth¹” (Skamania County, 2007c). Similar to the West End Subarea Plan, new residential growth will increase pressures on shorelines within this subarea, for single-family residences, a preferred shoreline use.

SCEDC Community Action Plan Update

The SCEDC Community Action Plan Update contains a generalized demographic analysis using 2000 census data but also does not provide an indication of demand for specific land uses. The Community Action Plan Update notes that the County’s proximity to the Portland-Vancouver metro area, access from Interstate 84 and State Route 14 in combination with recreational destinations, such as the Gorge, GPNF, Mount St. Helens, Skamania Lodge, Bonneville Hot Springs Resort, Columbia Gorge Interpretive Center, and the Bonneville Fish Hatchery attract millions of visitors each year. The Community Action Plan Update also notes that traditional industries, such as agriculture and forestry are giving way to the service and housing sectors. Retirement-age populations were noted as growing quickly, underscoring the demand for housing, much of which is likely to be in shoreline areas. The commute and vacation-home populations are helping drive demand for housing. Forecasted land demand for employment uses is 92 acres for industrial, 33 acres for office, and 8 acres for government by 2020. The Community Action Plan Update includes a preferred project list of 31 projects, approximately half of which would occur partly or wholly within Skamania County shoreline

jurisdiction. Projects range from infrastructure upgrades (broadband installation to the Wind River Nursery) to a new Port of Skamania waterfront building.

Port's 2013 Comprehensive Scheme of Harbor Improvements

The Port's 2013 Comprehensive Scheme of Harbor Improvements contains a capital improvement program for 2013-2014. Eight projects are listed including, two of which are in shoreline jurisdiction: the Columbia River Shoreline Improvement/Enhancement/Rock Creed Dredging and the SR 14 and Dam Access Road Intersection Improvements.

Skamania County Zoning Code

The Skamania County Zoning Code is the regulatory document that implements the County's Comprehensive Plan and Subarea Plans. Based on BergerABAM's review of the Skamania County Code, the following use conflicts have the potential to occur based on permitted uses within zoning categories: agriculture, road construction or modification, fire protection, agricultural building additions, high-density residential, retail, commercial, utility facilities (non-water-oriented), office, membership facilities (religious, lodges, clubs, etc.), medical and health facilities, education facilities, public service facilities, forestry, mining/surface mining, and non-water-oriented industrial (warehouses, etc.). For further detail on use conflicts, and which zones use conflicts would occur in, please see Appendix D (General and NSA Zone Land Use Conflicts).

There are several geographic areas throughout Skamania County that may present potential use conflicts between the County's current zoning and SMA preferred uses based on where zoning categories occur. The areas where a conflict occurs between County zoning, and the SMA, may require SMP regulatory language to prioritize water-oriented uses. The following are potential areas of concern, categorized by general zoning type:

Agricultural Zones – Agricultural zones in Skamania County are primarily located in the West End Subarea and in the southeast corner of the County. There are two areas in particular where use conflicts may occur. Currently portions of Franz Lake and the White Salmon River are zoned agricultural and allow uses that directly conflict with SMA preferred uses.

Commercial Zones – A majority of commercially-zoned areas are located along the Columbia River, near the Carson Subarea. Major SMP regulated waterbodies which are located adjacent to commercial zones include the Wind River, Washougal River, Little White Salmon River, Columbia River, and Woody's Lake. Pressures for non-water-oriented commercial uses in these areas will require SMP regulatory language increasing setbacks for these uses or prohibiting them where net loss of function would occur.

Forest Zones – Forest zones occur throughout a wide range of area within the County, but are primarily concentrated in or around the Swift, West End, and Carson Subareas, and in east Skamania County. The National Forest does not have a zoning designation. Major Water bodies adjacent to the forest zones are the Swift Reservoir, Columbia River, Washougal River, Wind River, White Salmon River, and the Little White Salmon River. Forestry uses (harvest, processing facilities, etc.) are not preferred shoreline uses. It will be important for the SMP to allow for ongoing forestry uses within shorelines, while crafting

regulatory language that promotes water-dependent forestry and recreational uses next to the water such as log storage, where necessary and compatible.

Industrial Zones – There are relatively few industrial zoned lands within the County; however, the industrial zones that do exist are located within or near the Carson Subarea. Potential use conflicts may occur from development pressures for non-water-oriented industrial uses and the SMP should recognize this and require appropriate setbacks, and demonstrate that water-oriented uses will not be displaced.

Open Space Zones – Open Space zones are concentrated in the southern portion of the County, often bordering the Columbia River, or other major water ways. Utilities are a conflicting land use permitted in this zone. The SMP needs to allow for utility facilities, require that they be placed underground, with a preference for water-dependent utilities (outfalls) along the shoreline over other types of utilities and require an alternatives analysis for primary utility facilities in shoreline jurisdiction. These provisions will be most important along the Columbia River, Hamilton Creek, Franz Lake, Wind River, Little Wind River, Little White Salmon River, and White Salmon River where open space zones are most common.

Public Recreation Zones – Public recreation zones are concentrated near two of the subareas, West End and Carson. Use conflicts, primarily resource uses such as mining, agriculture, and forestry, may occur on the Columbia River, Hamilton Creek, Wind River, and Drano Lake where this zone is concentrated. The SMP should provide for special management provisions which prioritize recreational and water-dependent resource uses in these areas.

Residential Higher Density Zones – All of the higher density residential zones occur within the southern portion of the County, primarily within or near subareas. Geographically, there are concentrations of residential higher density zones in the West End along the Washougal River, north of Woody's Lake, north of Stevenson near Rock Creek, and adjacent to the Wind River, Bear Creek, and Panther Creek near Carson. Potential use conflicts that include multifamily residential, public facilities and utilities, agriculture, and forest practices. The SMP should contain use and development provisions prioritizing water-oriented uses in each of these zones.

Residential Lower Density Zones – Residential lower density zones primarily occur in four areas, the Swift Subarea, West End Subarea, Carson Subarea, and the eastern County near Underwood. Concentrations of residential lower density occur on Swift Reservoir, Washougal River, Wind River, and the Little White Salmon River. Draft SMP standards should regulate potential use conflicts such as agriculture, public facilities and utilities, office, commercial, forest practices, utilities, and surface mining by requiring that use conflicts occur as far back as possible from the shoreline.

Skamania County Critical Areas Ordinance

The Skamania County Critical Areas Ordinance (Skamania County, 1996) was drafted and adopted to direct intensive development away from critical areas and require mitigations to offset impacts within the County's critical areas (wetlands, ponds and lakes, frequently flooded areas, aquifer recharge areas, fish and wildlife areas, and geologically hazardous areas). In general, uses allowed within critical areas, are SMA preferred uses and include recreation, resource management/enhancement, and open space. However, a few use conflicts do exist; the current Skamania County Critical Areas Ordinance allows for the construction of structures less

than 120 square feet in area and agriculture, which are not preferred uses in the County's SMP. Standard exemptions available in WAC 173-27-040 which will be incorporated into the draft SMP by reference, will likely exempt structures less than 120 square feet in area from permit requirements. Nonetheless, the SMP should require that, such structures adhere to setback standards, if they are non-water-oriented uses. Non-water-oriented agricultural uses should be placed further from the water.

Columbia River Gorge National Scenic Area Standards

The Columbia Gorge National Scenic Area Act was adopted in 1986 "to protect and provide for the enhancement of the scenic, cultural, recreational, and natural resources of the Columbia River Gorge and to protect and support the economy of the Columbia River Gorge area by encouraging growth to occur in the existing urban areas." (United States, 2003). The Scenic Area Management Plan adopted in 1991 includes guidelines and land use designations for lands in the Special Management and General Management Areas. Five of the six counties in the Gorge including Skamania County implement ordinances under the Management Plan to manage land use within the Gorge outside of urban areas. Title 22 of the Skamania County Code ("Columbia River Gorge National Scenic Area Ordinance") was adopted in 2008 in accordance with the Scenic Area Management Plan.

Proposed development within Skamania County's non-urban areas that fall within the National Scenic Area boundary must comply with SCC Title 22. The code regulates both the Special Management and General Management Areas of the Gorge which are further divided into zones. Both the Special and General Management Areas contain specific scenic, natural, cultural and recreational resource protection standards which apply to new development.

Because of its emphasis on protection of scenic, cultural, recreational, and natural resources of the Gorge, SCC Title 22 significantly restricts the development of new uses, their placement on properties to avoid resources, and their design within the Gorge. Title 22 divides new uses and construction into three basic categories (1) uses which do not require review (2) uses allowed through expedited review and (3) uses which require review. The SMA has more restrictive zone standards than does the General Management Area. After careful review of Title 22, BergerABAM determined the following use conflicts may occur based on permitted uses in NSA zones: agricultural uses; fire protection structures; railroad and utility facilities; road facilities; wineries and tasting rooms; disposal sites; addition, repair, maintenance & operations of existing structures; communication facilities; fruit and produce stands; asphalt batch plant operations; certain bed and breakfast inns; expansion of nonprofit group camps, retreats, and conference or education centers; exploration, development, and production of sand, gravel, and crushed rock for road and forestry uses; schools and expansions; animal boarding; certain research facilities; decks not associated with a single family home; schools and expansions; and new forest practices. For further detail on use conflicts, and which zones use conflicts would occur in, please see Appendix D.

Northwest Forest Plan

As previously mentioned in section 5.2 of this report, much of Skamania County is located within the Gifford Pinchot National Forest and new land uses are managed by the National Forest Service under the Northwest Forest Plan. Skamania County does not apply zoning designations to National Forest lands, so the County critical areas ordinance, building codes, and the National Forest Plans are what regulate land use in these areas. The National Forest Plan contains six land use management categories as described in section 5.2 of this report, which are Adaptive Management, Administratively Withdrawn, Congressionally Withdrawn, Late Successional Reserve and Managed Late Successional Reserve, Matrix, and Other Owners.

In addition, the Northwest Forest Plan contains an Aquatic Conservation Strategy which establishes Riparian Reserves. Riparian Reserves apply buffer widths on both sides of waterbodies which help protect ecological function and habitat. In many cases, Riparian Reserve widths are greater than shoreline jurisdiction. The following Riparian Reserve widths apply to these different waterbody types:

- Fish-bearing streams: 300 feet slope distance on both sides of the stream
- Permanently flowing non-fish-bearing streams: 150 slope distance on both sides of the stream
- Constructed ponds and reservoirs and wetland greater than 1 acre: 150 feet slope distance
- Lakes and natural ponds: 300 feet slope distance
- Seasonally flowing or intermittent streams: 100 feet slope distance

While a full analysis and comparison of streams regulated under the Northwest Forest Plan and shoreline jurisdiction was not performed, many if not all shoreline waterbodies within the National Forest would also qualify as Riparian Reserves. Within the Riparian Reserves, uses are limited to those which will not be detrimental to the waterbody and will meet the Aquatic Conservation Strategies. Conflicting shoreline uses within Riparian Reserves under limited circumstances, may include roads, grazing, mineral extraction, hydroelectric and surface water development proposals. The SMP should contain use provisions regulating each of these types of uses within shoreline jurisdiction.

Table D-1. General Zone Category, Specific Zone, and SMA Use Conflicts

General Zone Category	Specific Zone	SMA Use Conflicts
Agriculture	• Ag (SMA) • Large-Scale Ag (GMA) A-1 • Small-Scale Ag (GMA) A-2	• Agriculture • Construction or modifications of roads • Fire protection • Additions to existing buildings
Commercial	• Commercial (C) • Commercial (GMA) • Commercial Rec (GMA)	• High density residential • Retail • Commercial

General Zone Category	Specific Zone	SMA Use Conflicts
	• Commercial Rec (CR) • Community Commercial (CC) • Destination Resort (DR) • Neighborhood Commercial (NC) • Rural Center (GMA) RC	• Utility facilities • Agriculture • Office • Membership Organization (civic, religious, political etc.) • Medical and Health • Education facilities • Public service and facilities • Forestry
Forest	• Commercial Forest (GMA) F-1 • Forest (SMA) • Forest Ag 10 (FA10) • Forest Ag 20 (FA20) • Large Woodland (GMA) F-2 • Small Woodland (GMA) F-3(20) • Small Woodland (GMA) F-3(40) • Swift Commercial Resource Lands 40 (SW-CRL40) • Swift Forest Lands 20 (SW-FL20) • West End Commercial Resource Lands 40 (WE-CRL40) • West End Forest Lands 20 (WE-FL20)	• Forest practices (unless water-dependent) • Agriculture • Public facilities and/or utility systems • Mining • Fire protection
Industrial	• Carson Industrial (C-I) • Industrial (MG)	• Utility facilities • Non-water dependent industrial uses
Open Space/Conservancy	• Open Space (GMA) • Open Space (SMA)	• Utility facilities for public service
Public Recreation	• Public Rec (GMA) • Public Rec (SMA)	• Forest practices • Utility facilities for public service • Agriculture • Mining
Residential High Density	• High Density Residential (HDR) • Residential (GMA) R-1 • Residential (GMA) R-10 • Residential (GMA) R-2 • Residential (GMA) R-5 • Residential 1 (R1) • Residential 2 (R2) • Rural Lands 2 (RL2)	• High density residential • Public facilities and utilities • Agriculture • Forest practices

General Zone Category	Specific Zone	SMA Use Conflicts
Residential Lower Density	• Mountain Recreational 10 (MR10) • Mountain Recreational 20 (MR20) • Mountain Recreational 5 (MR5) • Northwestern Lake Recreational 2 (NLR-2) • Northwestern Lake Recreational 5 (NLR-5) • Residential 10 (R10) • Residential 5 (R5) • Rural Estate (RE) • Rural Estate 20 (RES20) • Rural Lands 10 (RL10) • Rural Lands 5 (RL5) • Rural Residential (RR) • Swift Recreational (SR)	• Agriculture • Public facilities and utilities • Office/commercial • Forest practices • Private utilities • Surface mining
Unzoned	• TBD • Unzoned (SkaCo)	Potential conflicts may occur due to the lack of regulated uses allowed in these zones.

Source: Skamania County Title 21, "Zoning."

Table D-2. NSA Zones and Potential SMA Use Conflicts

NSA Zone	Potential SMA Use Conflicts
Uses Allowed in All Areas	Agricultural uses, but not new cultivation • New forest practices • Repair, maintenance & operation of existing structures • Certain accessory structures • Fences and walls of certain dimension • Transportation facilities • Non-water-oriented utilities • Signs • Decks not associated with a single-family home
General Management Area	
Large-scale Agricultural (AG-1 and 2)	• Agricultural uses, structures, and dwellings • Outdoor lights • Fire protection structures • Personal use airstrips • Railroad facilities • Wineries and tasting rooms • Animal boarding • Certain bed and breakfasts • Certain research facilities • School and church expansions • Fruit and produce stands • Mineral and geothermal exploration and development • Disposal sites • Asphalt batch plants
Commercial Forest (F-1)	• Agricultural uses, structures, and dwellings • New forest practices and auxiliary/temporary structures • Addition, repair, maintenance & operation of existing structures • Towers and stations for fire protection • Railroad and utility facilities • Road facilities • Wineries and tasting rooms • Animal boarding • Certain bed and breakfasts • Certain research facilities • Expansion of existing nonprofit group camps, retreats, or conference centers • Private roads • Asphalt batch plants • Fruit and produce stands • Exploration, development and production of mineral and geothermal resources • Disposal sites
Large and Small Woodland (F-2 & F3)	• Agricultural uses, structures, and dwellings • New forest practices and auxiliary/temporary structures • Addition, repair, maintenance & operation of existing structures • Railroad and utility facilities • Road facilities • Wineries and tasting rooms • Animal boarding • Certain bed and breakfasts • Certain research facilities • Expansion of existing non-profit group camps, retreats, or conference centers

NSA Zone	Potential SMA Use Conflicts
	• Towers and stations for fire protection • Non-water-oriented utilities • Private roads • Decks not associated with a single-family home • Asphalt batch plants • Fruit and produce stands • Exploration, development and production of mineral and geothermal resources • Disposal sites
Residential	• Agricultural uses, structures, and dwellings • Addition, repair, maintenance & operation of existing structures • Schools and expansions • Fire stations • Non-water-oriented parks and playgrounds • Child care centers • Certain bed and breakfasts • Wineries/tasting rooms • Animal boarding
Rural Center	• Agricultural uses, structures, and dwellings • Addition, repair, maintenance & operation of existing structures • Schools and expansions • Fire stations • Libraries • Government buildings • Community centers and meeting halls • Service commercial and tourist commercial uses • Non-water-oriented parks and playgrounds • Child care centers • Certain bed and breakfasts • Wineries and tasting rooms • Animal boarding • Places of worship
Commercial	• Agriculture, but not new cultivation • Additions, repair, maintenance & operation of existing structures • Gift shops • Certain bed and breakfasts • Restaurants
Public Recreation (PR)	• Agricultural uses, structures, and dwellings • Additions, repair, maintenance & operation of existing structures • Communication facilities • Commercial uses and non-resource based recreation uses
Commercial Recreation (CR)	• Agricultural, uses, structures, and dwellings • Repair, maintenance & operation of existing structures • Communications facilities • Commercial uses, including restaurants and non-resource-based recreation uses
Open Space (OS)	• Agriculture, but not new cultivation • Repair, maintenance & operation of existing structures • Transportation facilities • Removal of timber, rocks, other material for public safety • Harvesting of wild crops

NSA Zone	Potential SMA Use Conflicts
	• Livestock grazing • Continued operation of existing quarries
Special Management Area	
Agriculture (A)	• Agricultural uses, structures, and dwellings • Fruit and produce stands • Asphalt batch plant operations • Certain bed and breakfast inns • Community facilities and nonprofit facilities • Expansion of existing nonprofit group camps, retreats, and conference or education centers • Road and railroad construction • Exploration, development, and production of sand, gravel, and crushed rock for road and forestry uses • Additions, repair, maintenance & operation of existing structures • Disposal sites
Forest (F)	• Agricultural uses, structures, and dwellings • Fruit and produce stands • Asphalt batch plant operations • Certain bed and breakfast inns • Community facilities and nonprofit facilities • Expansion of existing nonprofit group camps, retreats, and conference or education centers • Road and railroad construction • Exploration, development, and production of sand, gravel, and crushed rock for road and forestry uses • Additions, repair, maintenance & operation of existing structures • Disposal sites • Silviculture nurseries • Temporary portable facilities for the processing of forest products • Towers and fire stations • Community facilities and nonprofit facilities related to forest management • Clearing trees for new agricultural use
Public Recreation (P)	• Forest uses and practices • Agricultural uses, structures, and buildings • Public nonprofit group camps, retreats, conference or educational centers, and interpretive facilities • Road and railroad construction • Fruit and produce stands • Asphalt batch plant operations • Community facilities and nonprofit facilities related to agricultural resource management • Expansion of nonprofit group camps, retreats, and conference or education centers • Exploration, development, and production of sand, gravel, and crushed rock for road and forestry uses. • Certain bed and breakfast inns.
Open Space (S-O)	• Reconstruction, replacement, and expansion of existing structures and transportation facilities

Source: Skamania County, Title 22 "Columbia River Gorge National Scenic Area"